A THEORETICAL COST COMPARISON OF P3 AND TRADITIONAL PUBLIC DELIVERY MODELS USED IN DEVELOPING SOCIAL INFRASTRUCTURE

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Introduction

There is very little qualitative analysis that compares the three most common development models considered by public agencies for the development of social infrastructure. The term "Social Infrastructure" is used to designate buildings that are for the operational purposes of a public agency. City halls, public university facilities, police stations, and courthouses are examples of social infrastructure. The following analysis is a theoretical financial comparison of three delivery models commonly discussed when considering the development of social infrastructure projects for the public sector.

In this paper, we will compare the following delivery models: Traditional Public Delivery using General Obligation Bonds; the American Approach P3 model using rate tax-exempt lease revenue debt; and finally, the Availability Based P3 model using private equity and conventional debt.

The Availability Based P3 model is often referred to as DBFOM, or Design-Build-Finance-Operate-Maintain. It should be made clear that DBFOM is an acronym that defines the list of services requested by the public agency. Like a bandage being called a "Band-Aid", DBFOM has increasingly been used as an eponym for Availability Based models. This is an incorrect use of the term DBFOM, as both the Availability Based P3 and the American Approach P3 are capable of providing a wide range of services including those requested by a DBFOM project. For the examples presented in this paper, all three development models will provide Design-Build-Finance-Operate-Maintain services.

Moving forward with the theoretical cost comparison, we will begin by defining the assumptions of each scenario. Next, we will determine construction and financing costs and calculate sources and uses. We will then address debt service, rent, and operations and maintenance packages (O&M) with the goal of understanding how these three models compare with each other.

Scenario Set Up

In 2013, the Long Beach Courthouse in Long Beach, California, formally titled the Governor George Deukmejian Courthouse, became the first social infrastructure project completed using the Availability Based P3 model in the United states. The project is privately financed and therefore is not subject to the same transparency rules that typically govern a public works project. This made it difficult to obtain specific information regarding the project. However, after some investigation, we were able determine the significant financial components of the project. The theoretical Availability Based P3 scenario presented in this paper is based on the actual numbers from the Long Beach Courthouse project. This project was selected as the basis for comparison of the Availability Based P3 model because, at this time, it is the only completed social infrastructure project using the Availability Based P3 structure in the United States.

Instead of using specific data inputs from real completed projects for the Traditional Public Delivery Model and the American Approach P3 Delivery Model, we have used generalized data points based on industry standards that are typical of the market. There have been many examples of public facilities built using a Not-for-Profit tax-exempt delivery P3 like the American

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Approach, enough that we can create an accurate hypothetical project that is realistic in its data inputs. The same also applies to the Traditional Public Delivery model.

Where applicable, we have used the Long Beach Courthouse project to determine data inputs for the other two represented models to draw a fair comparison. The Long Beach Courthouse project was bid in 2010, thus many of the negotiated terms of the contract would have been predicated on the 2010 real estate development market. For all three models, we have also assumed that, our project is a complex, high-end building like the Long Beach Courthouse.

The development models we will compare are as follows:

- **Traditional Public Delivery**
  This example represents a common public delivery model that uses tax-exempt General Obligation Bonds, and offers the lowest interest rate available to the public agency. It has the longest construction period of the three models, but provides the public agency with complete control over the project.

  While there are many delivery methods employed by the public sector to develop buildings, the factors used to define our data inputs would apply to most public delivery methods, including Design-Build, Design-Bid-Build, and General Contractor/Construction Manager (GC/CM).

- **The New American Approach P3**
  The New American Approach, also called the American Model, is a Public-Private Partnership (P3) approach that uses tax-exempt lease revenue bond debt, either 63-20 or 501(c)(3) bonds. In 2010, 63-20 bond rates were approximately 35 basis points higher than G.O. Bonds. This model finances the project with tax-exempt bonds issued by a private not-for-profit, allowing the project to be developed by a private-sector development team outside of the traditional public works process. This results in significant cost savings, primarily due to reduction in development and construction timeline.

- **The Availability Based P3**
  The Availability Based P3 is the P3 model used to develop the Gov. George Deukmejian Courthouse in Long Beach, California. It uses a combination of taxable debt and private equity resulting in significantly more expensive capital costs, but can reduce costs related to design and construction by reducing the construction timeline. This model proposes long term operations and maintenance agreements that provide private-sector guarantees designed to mitigate risk on-behalf of the public partner.

It is important to emphasize that this is a theoretical comparison. While the data inputs we have used to calculate the financial outcomes of each model are well vetted, it is impossible to build the same building twice. Each project is subject to its own challenges, be they of political, physical, or financial design, making a genuine direct comparison impossible.

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Assigned Construction Cost

The base construction cost for our theoretical building has been set at $200 million. This is the initial estimated cost for the project, absent financing fees and capitalized or construction interest. The $200 million project represents a large and complex project, such as a hospital expansion, a civic center, or a state-of-the-art biomedical laboratory in a high-cost real estate market like Long Beach, California.

Additionally, $200 million is considered to be the bottom threshold for most firms proposing the Availability Based P3. According to industry experts, the $200 million threshold is predicated on two factors. First, the return on equity must be significant enough to attract developers and/or investors. Second, the cost savings earned by the private sector, due to their reduced construction timeline and other efficiencies, must be able to show cost savings to make the model worthwhile for the public partner. Availability Based P3 projects smaller than $200 million would not have sufficient economies of scale to produce the desired cost savings.

The American Approach P3 model has a significantly lower bottom threshold of $20 million. Because the American Approach uses tax-exempt bonds to finance 100% of project costs, it is not necessary to incorporate a paid return on equity. However, the costs of financing and issuance are typically higher than those seen in a traditional public delivery project. On projects less than $20 million, the increase in financing and issuance costs are not sufficiently offset by the savings provided by timeline reduction and private sector expertise to produce a benefit to the public agency.

While the scale of the project and local procurement rules may determine the project's approach from Design Build to GC/CM, it is fair to say that the Traditional Public Delivery models do not generally have a project-cost threshold.

313,824 Gross Square Feet and $637.30 per Sq. Ft. Construction Cost

All three models have been assigned a $637.30 cost per gross square foot. This number is derived by using the actual $346,725,495 million in construction costs of the Long Beach Courthouse project (absent fees, legal costs and construction interest). We subtracted $8,319,628 used to construct the parking structure, then divided by the building's 531,000 gross square feet.[1] The resultant cost per square foot was divided into our $200 million theoretical project cost to arrive at a project size of approximately 313,824 gross square feet.

Although a construction cost of $637.30 per gross square foot would have been considered higher than average for buildings in the area of Long Beach, California during the year 2010, we have elected to use this as the assumed price per square foot in all three of our theoretical scenarios in order to standardize the project across all three delivery models.

We recognize that design and site acquisition for the parking garage might be included in the Other Costs category on Table 2.3 of the Cost analysis (see Appendix 1). We have elected not to

[1] Administrative Office of the Courts, *Governor George Deukmejian Courthouse: Evaluation of Cost-Effectiveness Report to the California Legislature as Require by Senate Bill 75,* Page 30 (see Appendix 1)

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parse this cost since our goal is to create a general but realistic scenario. We are using 313,824 gross square feet for all three project models.

Construction Term

A complex, high end building of 313,824 square feet should take a private development team approximately 2 years to build. Both the Availability Based P3 model and the American Approach model employ private developers and incentivize them to produce a high-quality building as efficiently as possible. For that reason, we have assigned 2 years as the construction term for both P3 models presented in our scenario.

In a typical public delivery model, it is commonplace to see the construction timeline extended by 25% -50% over a privately delivered building of comparable quality and complexity. We have applied a 25% increase in construction term, resulting in 6 months of added timeline for our Traditional Public Delivery example. The increase in timeline is costly, extending the construction term and the capitalized interest costs. It also increases overhead and labor costs, rental equipment costs, and exposes the project to inflationary risks. These cost increases are multiplied as they cascade downward through each level of subcontractors. The 25% increase in construction term also increases capitalized interest.

In our theoretical scenario, we have increased construction costs for the Traditional Public Delivery example by 15% to $230 million, a $30 million increase over the privately delivered P3 models. We consider these adjustments to be conservative relative to what we typically see in projects delivered by the public sector.

In the *Governor George Deukmejian Courthouse: Evaluation of Cost-Effectiveness Report* issued by the State of California's Administrative Office of the Courts (AOC), the AOC determined that the privately delivered Long Beach Courthouse was completed on a significantly shorter timeline than the publicly delivered San Bernardino Justice Center:

> *"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 (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."*[2]

[2] Administrative Office of the Courts, *Governor George Deukmejian Courthouse: Evaluation of Cost-Effectiveness Report to the California Legislature as Require by Senate Bill 75,* Page 1 (see Appendix 2)

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In an audit of King County's Ninth and Jefferson Building, the King County (Washington) Auditor's office came to a similar conclusion regarding the cost savings generated by private sector expertise. The project was first bid as a GC/CM delivered project, but encountered significant cost overruns resulting in a full stop to the project. The County restructured the project as a P3 DBFOM project using the American Approach P3 delivery model. Upon completion, an audit produced by the King County Auditor's office found significant project savings in favor of the American Approach P3 model which benefits from private sector development expertise and uses tax-exempt debt. Also, the model can avoid financing delays like a cancelled bond sale referenced in the San Bernardino Justice Center project because the debt is privately issued.

> *"Project team members representing King County, Harborview, and UW relied upon the development expertise of Wright-Runstad and NJB Properties to deliver the project as efficiently and cost effectively as possible. This helped reduce the shell and core cost for the building by $7.6 million. It also delivered an estimated 13-percent reduction in the overall cost per square foot for the building and parking garage over the initial project and an estimated 50-percent reduction in the cost per square foot for the building itself."*[3]

A similar conclusion was reached in a study conducted by the University of Washington School of Medicine comparing its Molecular Sciences Building, delivered using the University's traditional public delivery method, with the UW School of Medicine's Biomedical Research Facility, delivered using the American Approach. The buildings were constructed during a similar time period and with similar design components. After adjusting for scale in an effort to create an equal comparison, the UW report shows that the P3 delivery produced a 13%-33% reduction in time and a 14%-29% reduction in cost.[4]

In our theoretical Traditional Public Delivery scenario, we assume the public agency managing the project does not regularly build complex, state-of-the-art buildings, resulting in a longer development timeline than projects delivered by private-sector development teams with extensive experience.

If a public agency is regularly engaged in building projects of a certain nature, or if they hired staff with significant experience, it would increase their development expertise for such projects. The increase in expertise should reflect positively on their construction timeline, reducing it significantly. However, the public sector's desire for consensus decision making, potential financing delays and the involvement of multiple departments would likely adversely impact the construction timeline.

[3] King County Auditor's Office, *Final Oversight Report on Ninth and Jefferson Building Project*, Page 9 (see Appendix 3)

[4] UW School of Medicine College & University Science Facilities, *The Public Sector Perspective & Comparison Case Study*, (see Appendix 4)

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Assigned Interest Rates

To calculate the cost of financing, we used the actual required equity yield for the Long Beach Courthouse project, set at 14.48%, and its construction loan rate, set at 6.88%.[5] It is important to note here that the Long Beach Courthouse project had a financing term of 35 years. We have changed the term to 30 years in this scenario to draw a more direct comparison to the typical tax-exempt bond issue. One could expect the conventional debt rate to be slightly lower due to this change in term. We have chosen not to speculate on what that change in rate might have been and have left interest rates at their original percentages.

General Obligation Bonds in November of 2010, the month of closing for the Long Beach Courthouse, were averaging 3.5% in California. We have assigned 3.85% for 63-20 bonds in the American Approach P3 scenario, which tend to be approximately 35 basis points higher than G.O. Bonds.

Fees and Legal Costs

In our scenario, we have calculated loan origination fees at 1% of the construction costs for the project. We have also done the same for Legal, Accounting and Admin costs related to the project. This is typical for the market.

The administrative/construction manager fee is set at 3.5% for the Traditional Public Delivery model and 4.5% for the American Approach P3 model, which was typical of the market in 2010 when the Long Beach Courthouse project was bid.

We used a 12% developer fee for the Availability Based P3 model and consider this to be a fair estimate of the fee percentage typically seen in Availability Based infrastructure projects. While we were unable to ascertain the exact developer fee for the Long Beach Courthouse project due to the lack of transparency in the project documents, the 12% Developer fee appears to fit with the project's actual total cost and so we expect it would be of a comparable percentage. If a lower fee were used it would not materially change the outcome in comparison to the other two models.

All the fee percentages we have assigned to this scenario are based on market standards. It is important to note that in real application, they can shift up or down based on the individual project and the private sector's bid.

Interest Rate on Invested Funds

The Traditional Public Delivery model and the American Approach P3 model use tax-exempt bonds for 100% of project costs. All funds for the project, including capitalized interest, are included in the bond issue and are deposited in a project account held by a trustee immediately following bond sale. During construction, funds are drawn from the project account to pay costs related to the project. The funds received from the bond sale are typically invested to generate earnings while they are held by the trustee. We have assigned a 1% interest rate of return on invested funds. This rate is typical of what we could expect in 2010. The interest earned from the

[5] Administrative Office of the Courts, *Governor George Deukmejian Courthouse: Evaluation of Cost-Effectiveness Report to the California Legislature as Require by Senate Bill 75,* Page 34 (see Appendix 5)

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return on investment is subtracted from the capitalized interest calculation, which will be reflected in our sources and uses.

Loan to Cost Ratio

The Traditional Public Delivery model and the American Approach P3 model have a loan-to-cost ratio of 100%. In other words, they are funding 100% of the project with tax-exempt bonds. This is the most common scenario for public facilities when using tax-exempt debt.

For the Availability Based P3 model, Loan-to-Cost Ratio is set at 93% with the remaining 7% of the project funded with an equity investment. This is the equity investment percentage and loan-to-cost ratio used in the Long Beach Courthouse project.[6]

Off-Balance Sheet, Off-Credit?

It is a common belief among public agencies that using an alternative financing and ownership structure will keep the transaction off-balance sheet and off-credit, thus preserving their debt capacity and minimizing the project's impact on their credit rating. This is an incorrect assessment.

Under the American Approach P3 Model, the facilities lease is considered to be a "capital lease," and is required to be included on the public agency's balance sheet according to generally accepted accounting principles (GAAP). Under an Availability Based P3 model, the government retains ownership of the facility, a structure which clearly requires the project to be reflected on the public agency's balance sheet.

Even if a P3 social infrastructure project could be kept off the public agency's balance sheet, the project would still impact the public agency's credit rating. The consensus among rating agencies is that P3 projects are on the public institution's credit, regardless of their treatment on the balance sheet.

Standard & Poor's 2015 paper "How Standard & Poors Treats Public-Private Partnerships in the U.S. State and Local Government Debt" states that "P3 availability payments have many features that make them debt-like" and "if [they]consider the revenue stream used to repay the obligation to be tax-backed revenue, then [they will] include the P3 obligation as tax-supported debt,"[7] subject to some adjustments. Even in P3 structures where the public agency is not contractually obligated for the payment of debt service, rating agencies may consider the public to be benefiting from the project to such an extent that they would not allow a default on the debt, and thus consider the project to be on-credit.

It is fair to assume that all three development models in our scenario should be considered On-Balance Sheet and On-Credit for the public agency engaged in our theoretical comparison.

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[6] Administrative Office of the Courts, *Governor George Deukmejian Courthouse: Evaluation of Cost-Effectiveness Report to the California Legislature as Require by Senate Bill 75*, Page 34 (see Appendix 5)

[7] Standard & Poor's Ratings Services, *Credit FAQ: How Standard & Poor's Treats Public-Private Partnerships in U.S. State and Local Government Debt Analysis*, Page 4
Available for download: http://www.ncsl.org/Portals/1/Documents/fiscal/JSugdensouthern16.pdf

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Ownership

In a Traditional Public Delivery, the public agency has ownership of the project throughout development and after completion, so the issue of transferring ownership is moot.

In the American Approach, a not-for-profit special purpose entity delivers the project and maintains ownership on behalf of the public entity until the retirement of the debt, which may occur at the end of the term or earlier if the public agency chooses to retire the debt prior to maturity. After the debt has been paid, ownership reverts to the public agency at no additional cost. This is required by IRS rules when using 63-20 bonds and written into the project development agreements.

The issue of ownership in an Availability Based P3 is negotiated and can manifest in a variety of arrangements. For our scenario, we have assumed that ownership of the facility is maintained by the public agency throughout development, with the private partner controlling the facility through a concessionaire agreement and contracting to operate and maintain the facility through a 30-year term.

For all three delivery models in this scenario we have assumed that ownership of the facility will transfer unencumbered to the public client at the retirement of the debt or at the end of the negotiated period. In practice, if the deal structure involved selling the facility or any additional transfer of monies in order for the public partner to assume ownership of the facility, those costs would need to be included in the cost analysis of the project.

Funding and Project Assumptions

The assumptions for our scenario are summarized below:

	Traditional Public Delivery	American Approach P3	Availability Based P3
Funding and Project Assumptions	Tax-Exempt: G.O. Bonds	Tax-Exempt: 63-20/501c3 bonds	Taxable Private Equity and Debt
Initial estimated cost (absent fees and capitalized interest)	$200,000,000	$200,000,000	$200,000,000
Percentage of added cost related to increased timeline	15%	N/A	N/A
Construction Cost of Project	$230,000,000	$200,000,000	$200,000,000
Loan-to-Cost Ratio	100%	100%	93%
Percentage of Equity Investment	N/A	N/A	7%
Interest Rate on Debt	3.50%	3.85%	6.88%
Required Equity Yield (IRR)	N/A	N/A	14.48%
Construction Period in years	2.5	2	2
Interest Rate on Invested Funds	1%	1%	N/A
Gross Square Feet	313,824	313,824	313,824

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Sources and Uses

We can calculate the sources and uses for each delivery model using the funding and project assumptions detailed above.

	Traditional Public Delivery	American Approach P3 Model	Availability Based P3
Sources of Funds	Tax-Exempt: G.O. Bonds	Tax-Exempt: 63-20/501c3 bonds	Taxable Private Equity and Debt
Debt Issued (with interest)	$262,316,024	$228,291,220	$235,715,947
Equity Invested (with interest)	N/A	N/A	$21,621,874
Total Amount Funded	$262,316,024	$228,291,220	$257,337,821

	Traditional Public Delivery	American Approach P3 Model	Availability Based P3
Use of Funds	Tax-Exempt: G.O. Bonds	Tax-Exempt: 63-20/501c3 bonds	Taxable Private Equity and Debt
Construction Costs or Turnkey Costs	$230,000,000	$200,000,000	$200,000,000
Loan Origination/Discount Fees (Typically 1% of construction cost)	$2,300,000	$2,000,000	$2,000,000
Legal, Accounting, Admin (Typically 1% of construction cost)	$2,300,000	$2,000,000	$2,000,000
Capitalized Interest/Construction Interest and Cost of Equity	$19,666,024	$15,291,220	$20,337,821
Debt Service Reserve Fund	N/A	N/A	$9,000,000
Project Developer/Construction Management Fee	$8,050,000	$9,000,000	$24,000,000
Typical fee percentage for private developer/CM	*3.50%*	*4.50%*	*12%*
Total Funds Used	$262,316,024	$228,291,220	$257,337,821

Debt Service Reserve Fund

A debt service reserve fund is not applicable to the Traditional Public Delivery model nor the American Approach P3 model. General Obligation bonds do not require a debt service reserve fund, nor does the American Approach, which uses tax-exempt lease revenue bonds like 63-20 bonds and 501(c)(3) bonds to build essential facilities that are leased directly to creditworthy governments. The tax-exempt bond market is generally more willing to accept subject to annual appropriation risk on essential facilities than the conventional debt markets. A tax-exempt P3 project that is subject to annual appropriations may require up to a full year of reserve if the facility being financed is not an essential government facility.

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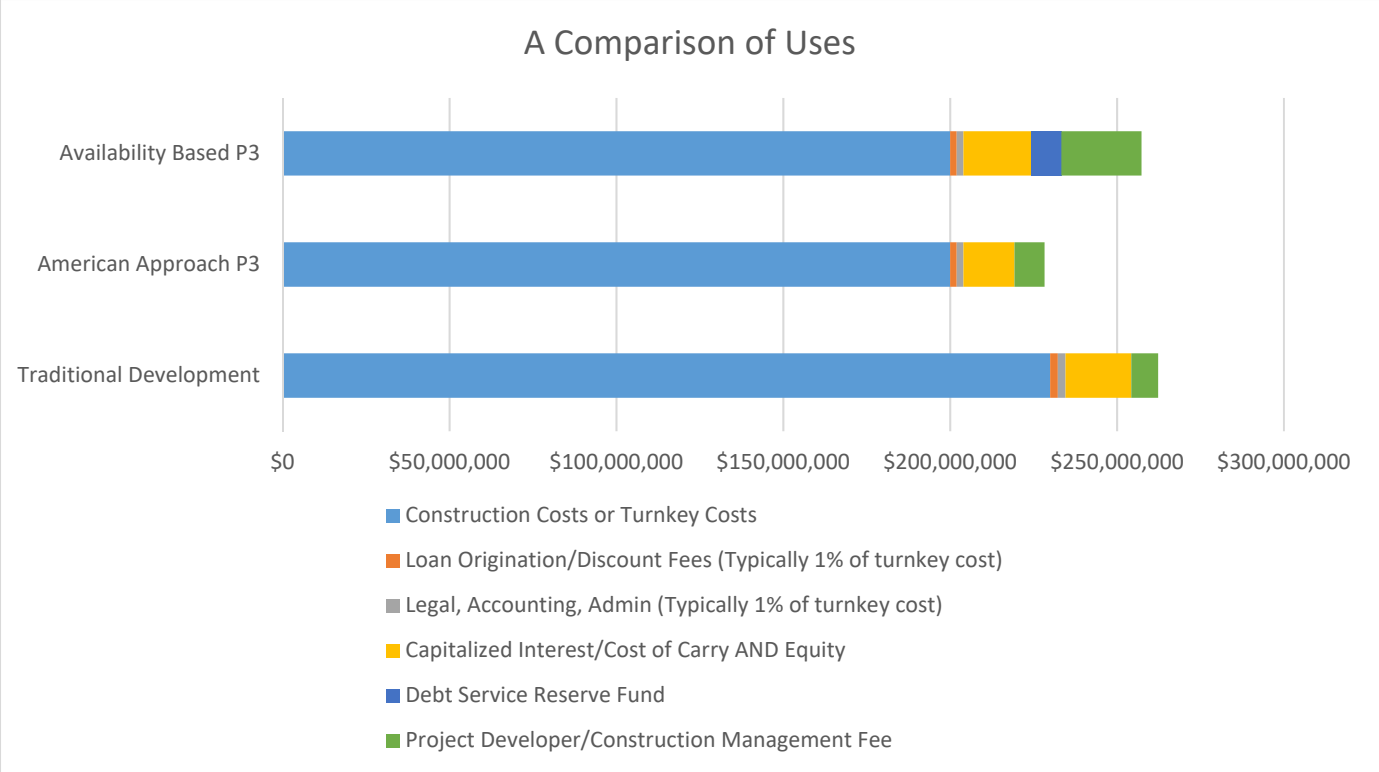
Availability Based P3 projects typically require a debt service reserve, and any unused funds are retained by the private partner. The size of the fund and how it is used would depend on the agreement between the public agency and the private partner during the bidding and negotiation process and could be widely variable depending on the project. It is common for an Availability Based P3 project to require a debt service reserve fund equal to the first 6 months of debt service. In an effort to be conservative, we have assigned $9 million in debt service reserve for the Availability Based P3 model.

The main concern here is that money is being borrowed and a cost is incurred in advance with any unused portion potentially retained by the private partner. The reserve fund is invested at short term interest rates, resulting in a significantly increased budget and lease payment in excess of the return on investment. In other words, the public agency is borrowing and then paying interest on the debt service reserve fund. If they do recover the funds, they have paid interest on that amount for the term of the debt, in our model, 30 years.

Project Cost Analysis Absent Operations and Maintenance Costs



In contrasting the three models, the Traditional Public Development Model is the most expensive, more than $34 million more expensive than the American Approach P3 model. This is due to the 15% increase in costs related to the extended timeline and the impact of the extended timeline on capitalized interest. The more favorable interest rate on G.O. bonds and the lowest private developer/construction manager fee should give the public delivery model the financial advantage, and both do their part in lowering costs for the project comparatively speaking.

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However, the extended timeline and the costs associated with it are significant, resulting in increased project costs. The 'cost-of-time' advantage for P3 models is the primary reason P3 models are attractive to local governments.

The second most expensive delivery option is the Availability Based P3 model, which is $29 million more expensive than the American Approach P3 model. This is due to multiple factors: the inclusion of the $9 million debt service reserve fund, the increased developer fee of 12%, and the equity and conventional debt costs, respectively at 14.48% and 6.88%.

Debt Service

The overall construction cost reflected in the sources and uses section of this study is useful and is often the main talking point when referencing the cost of a project in presentations to other public officials. It also tends to be the focus of voters and the media. Financing, however, is the critical driver of long-term costs and is typically the primary concern of the public agency's finance department.

	Traditional Public Delivery	American Approach P3	Availability Based P3
Debt Service Assumptions	Tax-Exempt: G.O. Bonds	Tax-Exempt: 63-20/501c3 bonds	Taxable Private Equity and Debt
Loan Amount (including Cap I and Fees)	$262,316,024	$228,291,220	$257,337,821
Term in years	30	30	30
Term in Months	360	360	360
Annual Interest Rate (blended rate for Availability Based P3)	3.50%	3.85%	7.41%
Monthly Interest Rate	0.2917%	0.3208%	0.6177%

In calculating debt service, we continued with the inputs already prescribed in our Funding and Project Assumptions. We have assigned each delivery model a term of 30 years and used a blended annual interest rate of 7.41% for the Availability Based P3 model.

Based on the above assumptions, the debt service calculation results in the following:

	Traditional Public Delivery	American Approach P3	Availability Based P3
Debt Service	Tax-Exempt: G.O. Bonds	Tax-Exempt: 63-20/501c3 bonds	Taxable Private Equity and Debt
Monthly Debt Service	$1,177,916	$1,070,248	$1,783,862
Annual Debt Service	$14,134,994	$12,842,976	$21,406,346

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Debt service is where the Traditional Public Delivery Model makes up for its costlier construction cost of $262.3 million. The monthly debt service payment of $1,177,916 is a product of the low 3.5% interest rate on tax-exempt G.O. Bonds, a 1.0 debt service coverage ratio and 100% financing ratio.

The American Approach P3 model has a higher interest rate at 3.85% but has the lowest debt service payment of $1,070,248 per month due to the lower construction cost achieved through private delivery efficiency. Total annual debt service is $1.29 million less the Traditional Public Delivery Model.

The Availability Based P3 model has by far the costliest annual finance obligation (debt service plus equity return) due to its higher blended cost of capital of 7.41%. The result is a monthly debt service of $1.78 million. This is more than 65% higher than the debt service of the American Approach. Under the Availability Based P3 model, the public agency will pay $8.56 million per year more in annual finance obligation than if they had selected the American Approach or $7.27 million more than if they had chosen the Traditional Public Delivery model. Over the 30-year term, this would result in the public agency paying $218.1 million more than if they had used their own traditional model and $256.9 million more than if they had used the American Approach.

Operations and Maintenance

Based on our debt service calculations, it would be easy to draw the conclusion that the Availability Based P3 approach is too costly to be considered a viable option for financing public social infrastructure. However, Availability Based P3 advocates argue that one of the primary benefits of their model is in cost guarantees for the operations and maintenance of the project, resulting in long term savings and solving deferred maintenance issues.

It is undeniable that the public sector suffers from problems relating to deferred maintenance. There are legitimate reasons for why this occurs. Money is often channeled away from preventative maintenance projects like roof repairs and building systems updates because of budget demands that address the immediate needs of the community.

While there are legitimate reasons for deferring maintenance, it does not negate the fact that the public sector is likely to struggle with properly maintaining their building. The result could be a facility that needs to be replaced prematurely. To address the issue of deferred maintenance, the Availability Based P3 uses a long-term operations and maintenance (O&M) package that provides risk transference and guarantees to the public client. The assumption is that the private partner assumes responsibility for operating and maintaining the facility during the life of the debt, which ultimately extends the life of the facility and saves the public client money.

We have compared the O&M package used in the Long Beach Courthouse with typical O&M costs for privately developed and managed buildings of similar complexity and size within the Los Angeles and Long Beach area. In all three O&M scenarios, the public client is responsible for property taxes, security, and utility costs. In both the Traditional Public Delivery Model and the American Approach P3 model, the projects are exempt from property tax. The Availability Based

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P3 model required special legislative authority to exempt it from property tax that would have been born by the public agency if not successful.

The O&M package for Availability Based P3 projects uses an availability payment approach that factors into a predetermined O&M fee the projected costs of operations, long term maintenance and concessionaire risk and profit. The cost of utilities and labor or direct pass through cost to the public agency. The Long Beach Courthouse O&M package is a 35-year contract which includes annual inflation adjustments. Because we cannot predict the market, we have not included any escalations in our calculations. However, when considering a real project, the nature of those escalations should be considered.

The American Approach O&M package is competitively bid every 3-5 years. This ensures market rates during the 30-year term of the debt on the project.

O&M Cost Per Square Foot

The Building Owners and Managers Association (BOMA) tracks costs related to O&M in markets across the United States. We have used the BOMA Market Standard for O&M costs for high-end buildings in the Long Beach/Los Angeles area during the year 2010 to determine the O&M cost per square foot of $10.04[8] for the American Approach P3 and Traditional Public Delivery models in our scenario.

Under the American Approach P3 model, the not-for-profit building owner hires a professional property management firm and employs them under short-term competitively bid contracts on 3-5 year intervals. This incentivizes the firm to perform to the public agency's expectations and ensures that costs are kept at market rates. Short-term competitively bid management contracts are typical of the private sector O&M practice for privately financed, long-term assets. The BOMA rate of $10.04 per square foot is an appropriately assigned O&M rate for this model. It is important to note, in this model, the public client is at risk for any major repairs or replacements to the building after the warranty period has expired.

While the O&M cost would not be part of the financing package for a publicly delivered project, the public agency would still be responsible for costs related to maintaining and operating the facility. It is difficult to ascertain an accurate operations and maintenance cost for publicly operated and managed facilities. Deferred maintenance is a common problem. For our scenario, we have assumed that the public agency is appropriately and efficiently maintaining the building, thus we have assigned the Traditional Public Deliver model the BOMA rate of $10.04 per square foot.

The Availability Based P3 model's cost of $35.64 per square foot is derived from the Long Beach Courthouse Project Agreement by adding the Base Operating Cost of $33.27 per square foot with Market Operating Charges, such as roads & grounds maintenance, exterior janitorial, elevator

[8] See Appendices 6 and 7 for a detailed explanation of how this amount was derived

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systems, security systems, and operating insurance.[9,10] In contrast to the O&M arrangement represented by the two tax-exempt models, the Availability Based P3 operations and maintenance package provides risk guarantees that hold the private partner responsible for faulty or worn out components of the building. The premiums associated with the transfer of risk and the possibility of being responsible for replacing any faulty or worn out building components contribute to the higher cost in O&M.

	Traditional Public Delivery	American Approach P3	Availability Based P3
Operations and Maintenance	Tax-Exempt: G.O. Bonds	Tax-Exempt: 63-20/501c3 bonds	Taxable Private Equity and Debt
Gross Square Feet	313,824	313,824	313,824
Annual O&M cost per square foot	$10.04	$10.04	$35.64
Total Annual Cost of O&M	$3,150,793	$3,150,793	$11,184,687

The Availability Based P3 long term O&M contract is 3.5 times more expensive than the BOMA Market Standard, resulting in a difference of $8 million annually. Stated another way, the difference of $25.60 per square foot is required to fund the cost of replacement of exhausted and defective items not subject to insurance (e.g. roof, elevator and carpet replacement). Considering the significant increase in cost is likely the product of risk premiums and profit, the public client could conceivably pay for privately managed operations and maintenance at $10.04 per square foot and place the remaining $8 million annually into a repair and replacement reserve fund. At the end of our 30-year term, provided they did not have any major repairs to the building, they would have accrued $241 million. That is enough to build the building again.

Other O&M Considerations

There are three other operations and maintenance considerations that would have a direct financial impact on the public partner while engaged in a long-term O&M contract.

First, the O&M contractor for an Availability Based P3 project is typically present in the planning phase and is making suggestions on materials that would provide for optimal O&M costs over the life of the facility. Premium and higher-cost materials should produce a lower cost in operations and maintenance with a benefit derived by the public agency. However, for the first 30 years of the project, when the building is in its best condition, the savings related to maintaining the building are not realized by the public client who is also paying for the higher quality materials that are incorporated into the construction cost of the project.

Second, any warranties for products and services used in the construction of the facility would likely be expired by the end of the long-term operations and maintenance contract. The building

[9] Long Beach Judicial Partners LLC, *Project Agreement for the Design, Construction, Financing, Operation, Maintenance and Management of the New Long Beach Court Building*, Page 123 (see Appendix 8)
[10] See Appendices 6 and 7 for a detailed explanation of how this amount was derived

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components are purchased by the public agency as a part of construction cost, however the warranty would be to the financial benefit of the private developer.

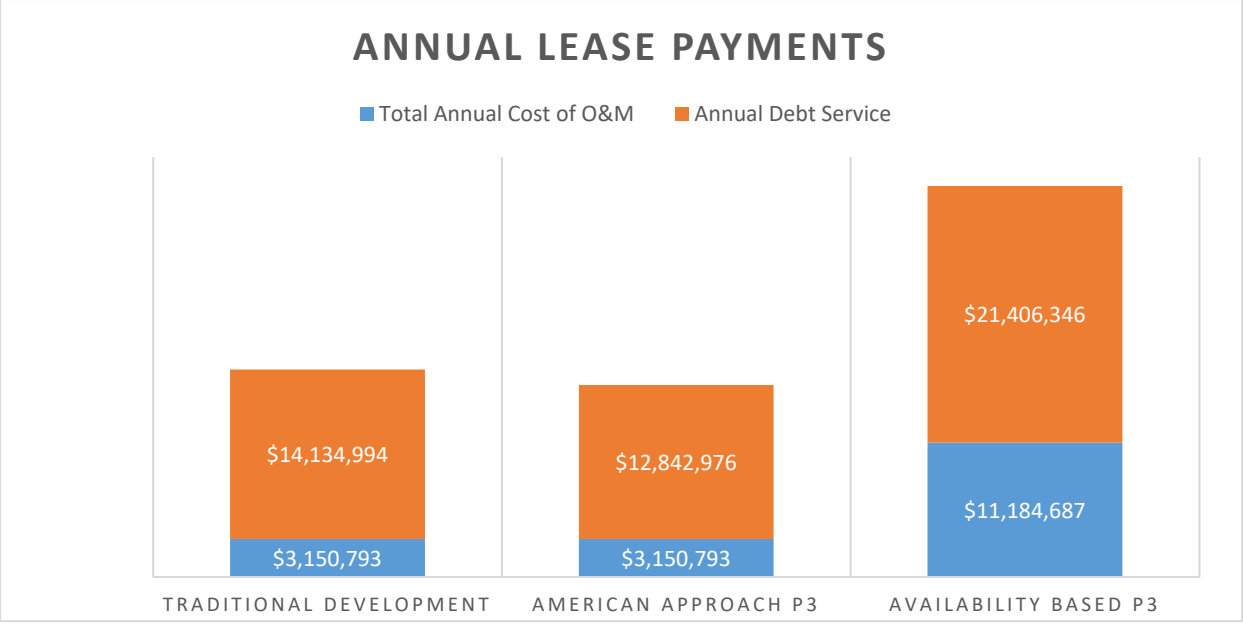
Third, technology for mechanical systems is advancing quickly. It is likely that during the long-term operations and maintenance contract, one or more of the facilities systems would need to be upgraded due to improved technology. It would be likely that the public agency would need to pay any costs related to upgrading those systems and would need to negotiate with the private O&M contractor the maintenance costs involved in maintaining the new system.

The Final Countdown: Lease Payments

By combining Debt Service and O&M we have the lease payments for each respective delivery model in our theoretical $200 million 313,824 gross square foot building:

	Traditional Public Delivery	American Approach P3 Model	Availability Based P3
Lease Payments (Debt Service + O&M)	Tax-Exempt: G.O. Bonds	Tax-Exempt: 63-20/501c3 bonds	Taxable Private Equity and Debt
Annual Lease Payment	$17,285,787	$15,993,769	$32,591,034
Monthly Lease Payment	$1,440,482	$1,332,814	$2,715,919

The American Approach P3 model is $1,292,018 less costly per year than the Traditional Public Delivery model, making it the least costly development model in our comparison[11].



[11] See Appendix 9 for a complete comparison of models.

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Hypotheticals

As we have stated previously, all projects are unique and depend on a variety of factors to determine the model that should be used when building a public facility. We consider the original analysis to represent the most likely performance of each model. If we change our data inputs to maximize performance of each model can we achieve greater savings with the Traditional model and/or the Availability Based P3 model?

Traditional Public Delivery vs. American Approach

It is difficult to imagine a scenario where Traditional Public Delivery, considering the 'cost-of-time' assumptions we have defined, could outperform the American Approach model. The public delivery team would have to reduce its delivery timeline to only 3 months longer (12.5%) than the private development timeline of 2 years. It would also need to reduce the percentage of added costs related to the increased timeline from 15% to 5%. The changes would result in funding and project assumptions reflected in the table below:

	Traditional Public Delivery	American Approach P3 Model
Change in 'cost-of-time' assumptions for the Traditional Delivery Model	Tax-Exempt: G.O. Bonds	Tax-Exempt: 63-20/501c3 bonds
Initial estimated cost (absent fees and capitalized interest)	$200,000,000	$200,000,000
Percentage of added cost related to increased timeline	5% (from original 15%)	N/A
Construction Cost of Project	$210,000,000	$200,000,000
Loan-to-Cost Ratio	100%	100%
Percentage of Equity Investment	N/A	N/A
Interest Rate on Debt	3.50%	3.85%
Required Equity Yield (IRR)	N/A	N/A
Construction Period in years	2.25 (from original 2.5)	2
Interest Rate on Invested Funds	1%	1%
Gross Square Feet	313,824	313,824
	Traditional Public Delivery	American Approach P3 Model
Lease Payments (Debt Service+O&M)	Tax-Exempt: G.O. Bonds	Tax-Exempt: 63-20/501c3 bonds
Annual Lease Payment	$15,952,996	$15,993,769
Monthly Lease Payment	$1,329,416	$1,333,814

Time delays are not predictable and require quick decision making to reduce their length. If the public agency could reduce their time-related costs to these levels, the public delivery example would outperform the American Approach's annual lease payments by $40,000 per year.

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Considering the complexity of the project and the lack of private sector expertise guiding the project, success in achieving these goals is an extremely challenging proposition.

Traditional Public Delivery vs. Availability Based P3

Even at the originally prescribed 'cost-of-time' increases for the Traditional Public Delivery example, the Availability Based P3 model is almost twice as expensive. We consider our 'cost-of-time' estimates for the public delivery model in our original scenario conservative. But what if we increase the original construction cost increase related to the increased timeline for the publicly delivered building to 25% and also applied a 50% extension to the construction timeline?

	Traditional Public Delivery	Availability Based P3
Increasing the 'cost-of-time' assumptions for the Traditional Delivery Model	Tax-Exempt: G.O. Bonds	Taxable Private Equity and Debt
Initial estimated cost (absent fees and capitalized interest)	$200,000,000	$200,000,000
Percentage of added cost related to increased timeline	25% (increased from 15%)	N/A
Construction Cost of Project	$250,000,000	$200,000,000
Loan-to-Cost Ratio	100%	93%
Percentage of Equity Investment	N/A	7%
Interest Rate on Debt	3.50%	6.88%
Required Equity Yield (IRR)	N/A	14.48%
Construction Period in years	3 (increased from 2.5 years)	2
Interest Rate on Invested Funds	1%	N/A
Gross Square Feet	313,824	313,824
Use of Funds		
Construction Costs or Turnkey Costs	$250,000,000	$200,000,000
Loan Origination/Discount Fees (Typically 1% of turnkey cost)	$2,500,000	$2,000,000
Legal, Accounting, Admin (Typically 1% of turnkey cost)	$2,500,000	$2,000,000
Capitalized Interest/Cost of Carry AND Equity	$26,066,149	$20,337,821
Debt Service Reserve Fund	N/A	$9,000,000
Project Developer/Construction Management Fee	$8,750,000	$24,000,000
Typical fee percentage for private developer/CM	*3.50%*	*12%*
Total Funds Used	**$289,816,149**	**$257,337,821**
Annual Debt Service	$15,616,848	$21,406,346
Operations and Maintenance		

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Annual O&M cost per square foot	$10.04	$35.64
Total Annual Cost of O&M	$3,150,793	$11,184,687
Lease Payments (Debt Service+O&M)		
Annual Lease Payment	**$18,767,641**	**$32,591,034**
Monthly Lease Payment	**$1,563,970**	**$2,715,919**

Annual lease payments under the Availability Based P3 model are still $13.8 million more than with the Traditional Public Delivery model.

If we set an extreme example of inefficiency and increased the public delivery model's construction period to 5 years and the percentage of added cost related to increased timeline by 100%, the annual lease payment would still be to the advantage of the Traditional Public Delivery model by $2.7 million.

	Traditional Public Delivery	Availability Based P3
Increasing the 'cost-of-time' assumptions for the Traditional Delivery Model	Tax-Exempt: G.O. Bonds	Taxable Private Equity and Debt
Initial estimated cost (absent fees and capitalized interest)	$200,000,000	$200,000,000
Percentage of added cost related to increased timeline	100%	N/A
Construction Cost of Project	$400,000,000	$200,000,000
Loan-to-Cost Ratio	100%	93%
Percentage of Equity Investment	N/A	7%
Interest Rate on Debt	3.50%	6.88%
Required Equity Yield (IRR)	N/A	14.48%
Construction Period in years	5	2
Interest Rate on Invested Funds	1%	N/A
Gross Square Feet	313,824	313,824
Lease Payments (Debt Service+O&M)		
Annual Lease Payment	**$29,889,747**	**$32,591,034**
Monthly Lease Payment	**$2,490,812**	**$2,715,919**

Optimizing Availability Based P3 Costs

All projects are unique and there are multiple approaches to an Availability Based P3. Perhaps the Long Beach Courthouse was overly expensive and will prove to be a poor example for defining the Availability Based P3 model. Is it possible to reduce Availability Based P3 costs below the cost of a publicly delivered project based on our original assumptions for the Traditional Public Delivery model?

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What if we cut the developer fee in half, remove the debt service reserve fund and reduce the annual O&M cost per square foot by 66%?

	Traditional Public Delivery	American Approach P3 Model	Availability Based P3
Hypothetical adjustments to the Availability Based P3 model	Tax-Exempt: G.O. Bonds	Tax-Exempt: 63-20/501c3 bonds	Taxable Private Equity and Debt
Initial estimated cost (absent fees and capitalized interest)	$200,000,000	$200,000,000	$200,000,000
Percentage of added cost related to increased timeline	15%	N/A	N/A
Construction Cost of Project	$230,000,000	$200,000,000	$200,000,000
Loan-to-Cost Ratio	100%	100%	93%
Percentage of Equity Investment	N/A	N/A	7%
Interest Rate on Debt	3.50%	3.85%	6.88%
Required Equity Yield (IRR)	N/A	N/A	14.48%
Construction Period in years	2.5	2	2
Interest Rate on Invested Funds	1%	1%	N/A
Gross Square Feet	313,824	313,824	313,824
Use of Funds			
Construction Costs or Turnkey Costs	$230,000,000	$200,000,000	$200,000,000
Loan Origination/Discount Fees (Typically 1% of turnkey cost)	$2,300,000	$2,000,000	$2,000,000
Legal, Accounting, Admin (Typically 1% of turnkey cost)	$2,300,000	$2,000,000	$2,000,000
Capitalized Interest/Cost of Carry AND Equity	$19,666,024	$15,291,220	$18,535,736
Debt Service Reserve Fund	N/A	$0	~~$9,000,000~~
Project Developer/Construction Management Fee	$8,050,000	$9,000,000	$12,000,000
Typical fee percentage for private developer/CM	*3.50%*	*4.50%*	*6%* *(from original 12%)*
Total Funds Used	**$262,316,024**	**$228,291,220**	**$234,535,736**
Operations and Maintenance			
Annual O&M cost per square foot	$10.04	$10.04	$12.00 (from original $36.64)
Total Annual Cost of O&M	$3,150,793	$3,150,793	$3,765,888
Lease Payments (Debt Service+O&M)			
Annual Lease Payment	**$17,285,787**	**$15,993,769**	**$23,275,469**
Monthly Lease Payment	**$1,440,482**	**$1,332,814**	**$1,939,622**

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The result is a $23.27 million annual lease payment, $6 million per year more expensive than the originally proposed Traditional Public Delivery example and $7.2 million per year costlier than the American Approach P3 model. These changes to the Availability Based P3 project are so dramatic that they could be considered unrealistic, but even if the private partner was willing to make these adjustments, the Availability Based P3 model would still fail to outperform either of the tax-exempt financing examples.

About the Author

Public Facilities Group

Public Facilities Group (PFG) is a leading practitioner of Public-Private Partnerships (P3) for Social Infrastructure and experts in P3 finance. Our professional staff have completed 28 projects with a total development cost of $1.8 billion. Each of these projects have been completed on or ahead of schedule and on or under budget with a lower cost than our public partners had experienced with alternative delivery models.

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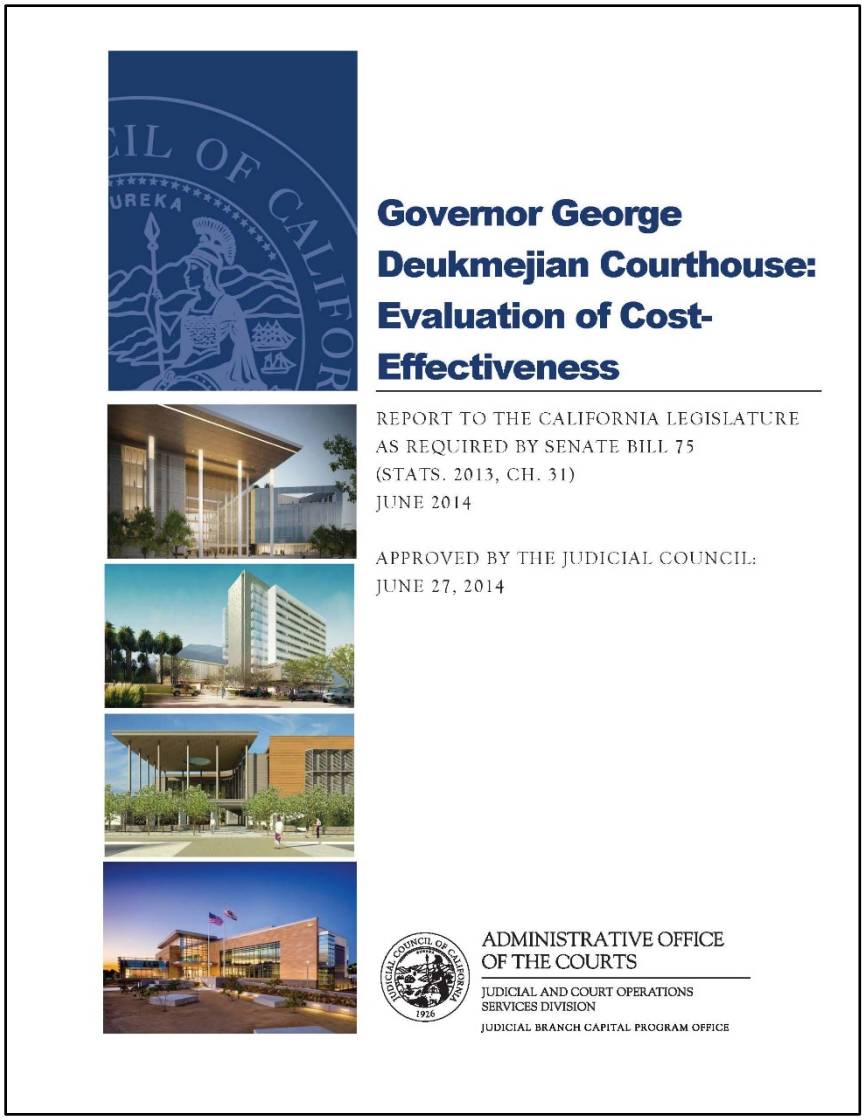
Appendix 1

Table 2.3: Value for Money Analysis (Page 30)

Governor George Deukmejian Courthouse: Evaluation of Cost Effectiveness Report to the California Legislature as Required by Senate Bill 75



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

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

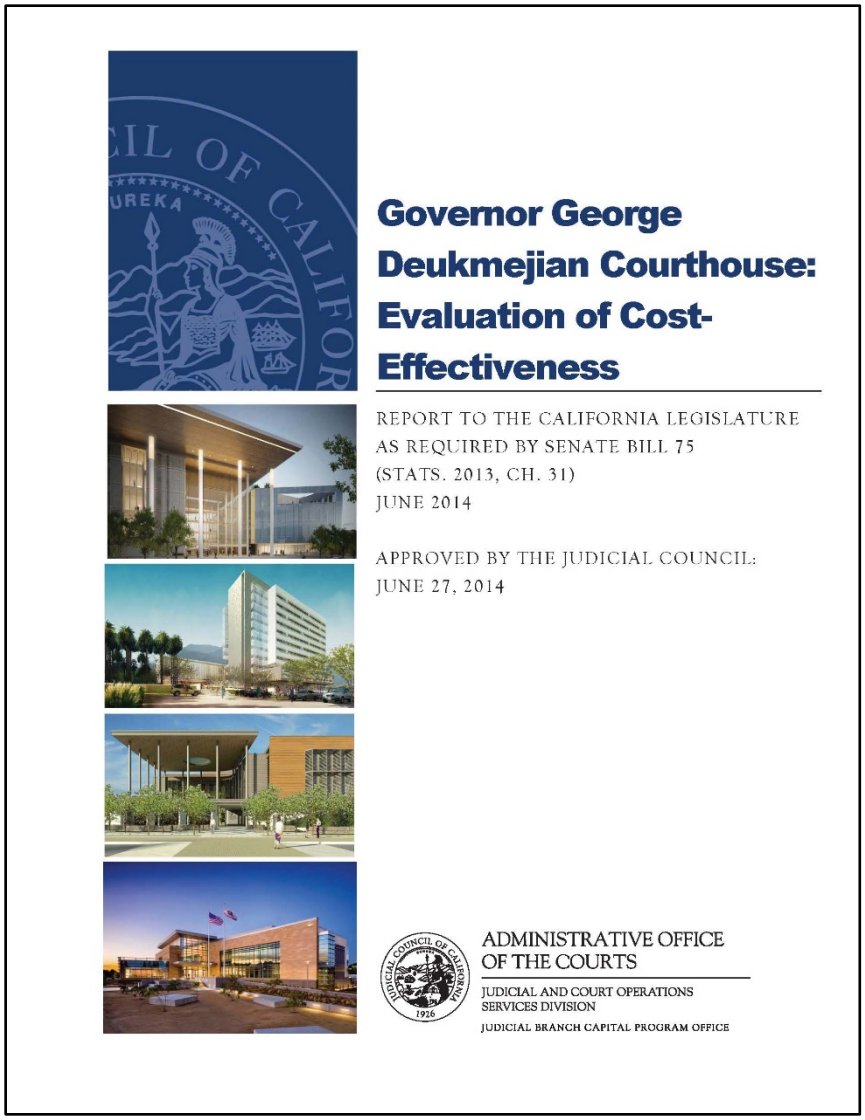
Capital Project Costs (nominal unless stated otherwise)	Assumption	Actual
1. Size of Facility (total nominal gross areas)		
a. Superior court facility	416,100 sq ft	416,100 sq ft
b. County justice agencies	73,900 sq ft	73,900 sq ft
c. Probation	31,400 sq ft	31,400 sq ft
d. Commercial	2,100 sq ft	2,100 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.

Appendix 2

Key Findings Summary (Page 1)

Governor George Deukmejian Courthouse: Evaluation of Cost Effectiveness
Report to the California Legislature as Required by Senate Bill 75



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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.

Appendix 3

Lessons for 63-20 Public-Private Partnership Projects

3) Leveraging the private sector expertise of the developer, general contractor, and product vendors is recommended to help achieve the most cost-effective outcome. (Page 8-9)

Final Oversight Report on Ninth and Jefferson Building Project
King County Auditor's Office
Capital Projects Oversight Program

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The project combined the resources of King County, Harborview, and UW, each of which has its own reporting, accounting, and building operations tracking systems. In addition, NJB Properties and Wright-Runstad have their own systems. This resulted in the need to convert project data into multiple formats to meet the needs of each stakeholder. It also made it difficult for Wright-Runstad to answer some project data requests, including providing a cost summary separating out the tenant improvement and underground parking garage construction costs from the building shell and core total.

In the future, the project stakeholders should agree on a common standard for reporting project data and include this in the building development agreement. The staff responsible for ongoing building operations should assist in the development of requirements for O&M manuals and as-built drawings that meet their needs.

Lessons for 63-20 Public-Private Partnership Projects

The lessons learned provided below are based on the experience of FMD, NJB Properties, and Wright-Runstad in completing 63-20 projects. Recommendation 3 is made to assure that the specialized knowledge of FMD's NJB project management team is transferable to other county project managers.

1) **Partnering with highly qualified nonprofit organizations and building developers who have prior experience successfully completing 63-20 projects is important.**

FMD and NJB Properties indicated that the project benefited from FMD's selection process, which evaluates the qualifications and experience of the nonprofit partner and the building developer separately. FMD selects the nonprofit partner first, so they can advise the county during developer selection. These processes helped FMD select a nonprofit partner and building developer who performed their assigned roles in a well-coordinated and collaborative manner which resulted in a finished product that met the county's and Harborview's expectations.

2) **It is important to assign agency representatives to 63-20 projects who are familiar with public-private partnerships, including enforcing the legal agreements involved.**

FMD and NJB Properties indicated that the project benefited from county and Harborview/UW staff, management, and elected officials who were experienced with 63-20 public-private partnerships. The lease agreement and development agreement used for NJB were tested and refined during previous 63-20 projects, resulting in clear roles and responsibilities and successfully protecting the county from cost and scope risk during construction. The lease agreement also established a clearly defined process for operating the building, including maintenance standards, property tax payments, utility cost pass-throughs, and so on.

Because of their experience managing 63-20 projects, the FMD and Harborview/UW project managers were able to work collaboratively with NJB Properties and Wright-Runstad to deliver the project on schedule, without cost overruns, and without any legal disputes.

Post project surveys indicate that tenants are satisfied with both the quality of their space and the building management effort to date.

3) **Leveraging the private sector expertise of the developer, general contractor, and product vendors is recommended to help achieve the most cost-effective outcome.**

Project team members representing King County, Harborview, and UW relied upon the development expertise of Wright-Runstad and NJB Properties to deliver the project as efficiently and cost effectively as possible. This helped reduce the shell and core cost for the building by $7.6 million. It also delivered an estimated 13-percent reduction in the overall cost per square foot for the building and parking garage over the initial project and an estimated 50-percent reduction in the cost per square foot for the building itself.

4) A guaranteed maximum price for the building must be established and enforced.

FMD and NJB Properties reported that establishing and enforcing a guaranteed maximum price is critical to the success of 63-20 projects. Both the county's lease agreement with NJB Properties and the development agreement between NJB Properties and Wright-Runstad included a $178,237,000 guaranteed maximum price for completing the project. This provided FMD with the leverage necessary to avoid project cost over-runs resulting from errors or omissions by the nonprofit owner or their developer, unauthorized changes to the project scope, or by adverse changes in market conditions. This issue came up during the tenant improvement work for NJB when FMD and Wright-Runstad felt that Turner's pricing was not reflecting the market's lower construction costs later in the project. In response, Wright-Runstad opened up the bidding process to other contractors during the next tenant improvement phase as a signal to Turner to reduce their costs, or face the possibility of being replaced as the contractor for the project. This strategy worked, and FMD and Wright-Runstad were satisfied with Turner's pricing thereafter.

RECOMMENDATIONS

1) The County Executive should review existing policies, procedures, and standard contract language for GC/CM projects and revise them as needed to guard against cost risks like those experienced during the initial project.
2) FMD should work with the PAO and council to streamline the county's lease approval process in order to be more competitive in the marketplace without unduly sacrificing risk control.
3) FMD should document its practices for managing 63-20 public-private partnership projects and develop strategies to transfer the specialized knowledge of experienced project management personnel to other project managers in FMD and other divisions new to this funding method.

Appendix 4

Full Slide Show Report
Data from Slides 6-9

Public/Private Partnerships
The Public Sector Perspective & Comparison Case Study
UW School of Medicine
College & University Science Facilities

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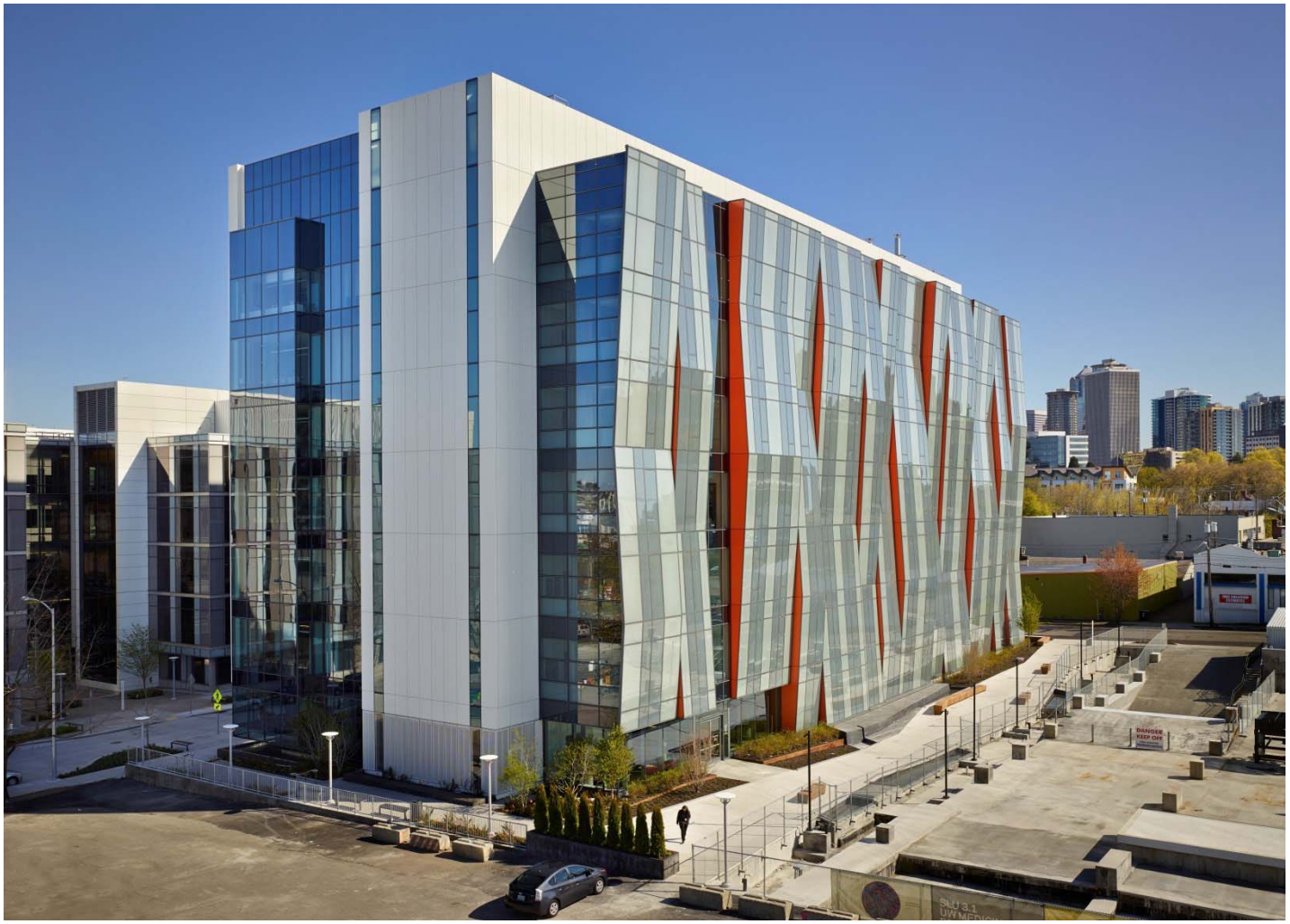
PUBLIC/PRIVATE PARTNERSHIPS

THE PUBLIC SECTOR PERSPECTIVE
&
COMPARISON CASE STUDY

JILL MORELLI, FAIA, DIRECTOR OF FACILITIES,
UW SCHOOL OF MEDICINE
COLLEGE & UNIVERSITY SCIENCE FACILITIES:

UW SOM SOUTH LAKE UNION



UW School of Medicine

MOLECULAR SCIENCES

UW School of Medicine

SIMILARITIES

SLU 3.1 (P3) & MoIES (GC/CM)

- Scientists like working in both buildings
- Wet bench science
- Urban sites
- LEED Gold
- Layout of typical floor
- Seattle permitting/review processes
- Tax deferral on equipment & research
- Second phase not constructed but needing support work in first phase
- Contingencies, furniture, equipment in “soft costs” are considered all spent

DIFFERENCES

SLU 3.1 (P3)

- 216,019 GSF (7 flrs+)
- 128,891 ASF
- BSL-3/SA, 2 interstitial spaces, 4 bay loading dock; pad built for 3.1 + 3.2
- $109.6M TPC (adj.)
- $ 92.0M TCC (adj.)

MolES (GC/CM)

- 90,374 GSF (4 flrs)
- 47,060 ASF
- minimal vibration and electromagnetic interference; radiant floors; bldg. expandable for Phase 2.
- $72.6M TPC (adj.)
- $58.6M TCC (adj.)

TIMELINESS

SLU 3.1 (P3)

- Modified IPD
- Ground breaking: July 2011
- Opened: April 2013
- Construction time: **21 months**
- Impacts: fire June 16, 2012. All space built out; all space fully occupied 8 weeks after opening.

MoIES (GC/CM)

- GC/CM, subs as advisors
- Ground breaking: October 2009
- Opened: September 2012
- Construction time: **35 months**
- Impacts: fit out designed during construction; not fully occupied at time of opening.

SLU 3.1 was delivered in 14 months less time.

Comparison Worksheet: SLU 3.1 and MolES: 7 October 2013

Jill Morelli

Between 2009 to 2013, the Schoolof Medicine and the College of Engineering both built a wet bench laboratory building using different project delivery methods. SoM 3.1 was constructed using a 501(c)3; the CoE building was constructed using the GC/CM process through UW's CPO.

PROJECT COSTS: WITHOUT FINANCING & MUP COSTS

Project Name	Adj. Project Cost (TPC)	Total Construction Cost (TCC)	% of Const. cost to TPC	GSF	ASF	TPC/GSF	TPC/ASF	TCC/GSF	TCC/ASF	Typ. floor efficiency	Typ. Bldg. efficiency
SLU 3.1	$109,595,788	$92,032,232	84%	216,109	128,891	$507.13	$850.30	$425.86	$714.03	87%	60%
MolE building	$72,600,000	$58,600,000	81%	90,374	47,060	$803.33	$1,542.71	$648.42	$1,245.22	76%	51%
SLU is cheaper than MolES by....						37%	45%	34%	43%		
when modified for smaller scale of MolES (1.13 reduction factor)											
SLU 3.1						$507.13	$850.30	$425.86	$714.03		
MolES						$710.91	$1,365.23	$573.82	$1,101.96		
SLU is cheaper than MolES by....						29%	38%	26%	35%		

PROJECT COSTS: INCLUDING FINANCING (and other costs associated with rent, broker fees etc)

Project Name	Adj. Project Cost (TPC w/F)	Total Construction Cost (TCC)	% of Const. cost to TPC	GSF	ASF	TPC/GSF	TPC/ASF	TCC/GSF	TCC/ASF
SLU 3.1	$131,513,206	$92,032,232	70%	216,109	128,891	$608.55	$1,020.34	$425.86	$714.03
MolE building	$72,600,000	$58,600,000	81%	90,374	47,060	$803.33	$1,542.71	$648.42	$1,245.22
SLU is cheaper than MolES by..						24%	34%	34%	43%
when modified for smaller scale of MolES									
SLU 3.1						$608.55	$1,020.34	$425.86	$714.03
MolES						$710.91	$1,365.23	$573.82	$1,101.96
SLU is cheaper than MolES by..						14%	25%	26%	35%

SUMMARY: CASE STUDY

Timeliness

- perception: P3's take less time
- reality: True; SLU 3.1 took less time by 13%-33%

Quality & Control

- perception: P3's are of a lower quality
- reality: False: a different approach to maintenance drives different decisions
- perception: institution has many decision making entities
- reality: True; SLU designated SOM decision-makers.

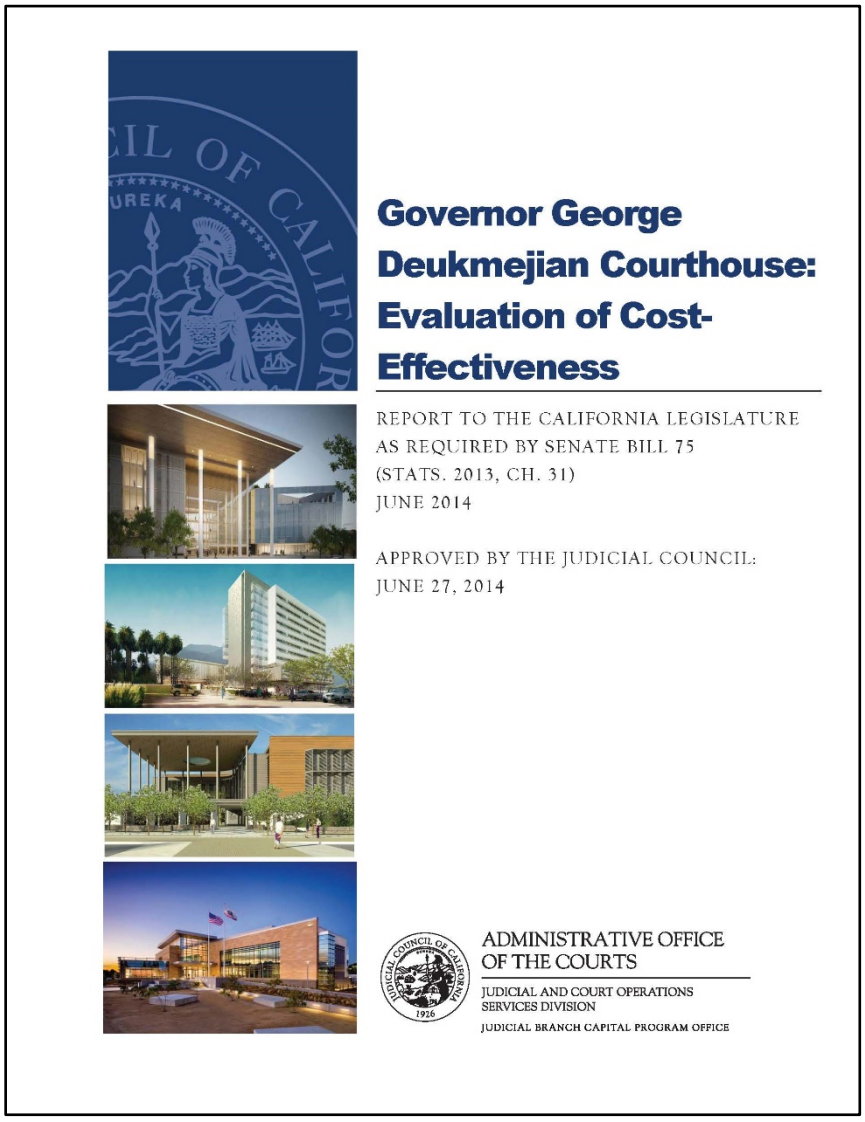
Cost

- perception: P3's cost less
- reality: True: by 14% to 29%

Appendix 5

Table 2.7: Value for Money Analysis Assumption and December 2013 Financing (Page 34)

Governor George Deukmejian Courthouse: Evaluation of Cost Effectiveness
Report to the California Legislature as Required by Senate Bill 75



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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

Appendix 6

An Explanation and Categorical List of Operations and Maintenance Costs used in Calculating Per Square Foot O&M amounts

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Availability Based P3/Long Beach Courthouse O&M Costs

Operation and Maintenance Charge	Cost Per Sq. Ft.	Cost per Year
Base Operating Cost	$33.27	$13,844,467
Roads and Grounds Maintenance	$0.08	$33,842
Exterior Janitorial	$0.12	$49,500
Elevators and Conveyance Systems	$0.35	$143,550
Asset and Resource Trash and Recycling Management	$0.10	$43,125
Security Electronics	$0.26	$106,652
Required Operating Insurance	$1.46	607,360
Total per Year	$35.64	$14,221,136

Long Beach Courthouse Operations and Maintenance cost per square foot number is calculated using the O&M Costs per year listed in Appendix 5 (also represented on the above chart) and dividing those by 416,000 square feet, the amount of space occupied by the Judicial Office of California, Administrative Office of the Courts.

While the total project size of the Long Beach Courthouse is 531,000 square feet, 73,900 square feet are leased to the County Justice Agencies and 31,400 square feet is leased to Probation Offices, the remaining difference of 9,600 square feet is leased to Commercial and Retail tenants. This space is considered third party subleases and those lease arrangements belong to the developer. The state pays for the Shell & Core but not tenant improvements.

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BOMA Market-Standard O&M Costs (High End)

Operation and Maintenance Charge	Cost Per Sq. Ft.
Cleaning Contracts	$1.31
Window Washing	$0.09
Trash/Recycling	$0.06
On-site Personnel Payroll, Taxes, Fringe Benefits	$0.85
Elevator Systems	$0.28
HVAC	$0.38
Electrical	$0.13
Structural/Roofing	$0.02
Plumbing	$0.12
Fire/Life Safety	$0.14
General Building Interior	$0.14
Parking Lot	$0.04
Miscellaneous Repair and Maintenance	$0.65
Roads, Grounds & Landscaping	$0.20
Administrative/Management	**Cost Per Sq. Ft.**
Payroll, Taxes, Fringe Benefits	$0.75
Property Management Fee	$1.16
Professional Fees	$0.03
General Office Expenses	$0.31
Employee Expenses	$0.02
Miscellaneous	$0.18
Insurance	**Cost Per Sq. Ft.**
Property and Operating Insurance	$1.68
Total	$10.04

The Building Owners and Managers Association surveys operating and maintenance cost data nationally. The table above lists typical O&M costs for high end buildings in the Long Beach/Los Angeles area during 2010, the same year the Long Beach Courthouse project was bid.

The data survey collected data from 27 buildings that are of high quality and in excess of 100,000 square feet with at least five floors. The operating costs in the BOMA survey (see appendix 7) was low-medium-high. The highest range was used to determine cost for each category.

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Appendix 7

BOMA Experience Exchange Report

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Experience Exchange Report ®

Report Year:	2013	**Sector:**	All Sectors	**Building Size:**	100,000 - 299,999 Sq Ft| 300,000 - 599,999 Sq Ft| 600,000+ Sq Ft|	**Unit of Measure:**	Square Feet
Country:	USA	**Building Type:**	All Functions	**Public Transit:**	Any Proximity	**Location:**	All Locations
Market:	Long Beach, CA|Los Angeles, CA|	**Ownership Type:**	All Types	**All Electric:**	Any	**Building Age:**	0 - 9 Years|10 - 19 Years| 20 - 29 Years|
Zip Code:	Any Zip Code	**Number of Floors:**	< 5 Floors|5 - 9 Floors|10 - 19 Floors|20 - 29 Floors|30 - 39 Floors|40 - 49 Floors|	**Agency Managed:**	Any	**Property Class:**	Class A|

Occupancy Summary - 2010

Occupancy Info.	# Blds	Avg
SQFT per Office Tenant	27	12,558.55
SQFT per Retail Tenant		
SQFT per Office Worker	14	279.43
SQFT per Maintenance Staff	22	53,119.25
Office Occupancy (%)	28	89.75
Retail Occupancy (%)		
YR-End Rent ($ per SQFT)	10	35.00
Gross Parking INC per Stall ($)	10	518.15
Parking Ratio (Stalls per 1000 SQFT)	15	2.31
Rentable per Gross SQFT	15	0.91
Rentable per Usable SQFT	12	1.16
Total BTUs		
Capitalization Threshold ($)	9	18,215.43
Building Hours	21	66.21

Occupancy Summary - 2013

Occupancy Info.	# Blds	Avg
SQFT per Office Tenant	19	16,792.79
SQFT per Retail Tenant	5	5,817.08
SQFT per Office Worker	10	345.49
SQFT per Maintenance Staff	19	58,976.01
Office Occupancy (%)	24	77.82
Retail Occupancy (%)	5	66.14
YR-End Rent ($ per SQFT)	5	37.40
Gross Parking INC per Stall ($)	10	1,674.77
Parking Ratio (Stalls per 1000 SQFT)	10	2.00
Rentable per Gross SQFT	10	0.94
Rentable per Usable SQFT	8	1.05
Total BTUs		
Capitalization Threshold ($)	6	13,500.00
Building Hours	19	62.85

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Report Year:	2013	**Sector:**	All Sectors	**Building Size:**	100,000 - 299,999 Sq Ft| 300,000 - 599,999 Sq Ft| 600,000+ Sq Ft|	**Unit of Measure:**	Square Feet
Country:	USA	**Building Type:**	All Functions	**Public Transit:**	Any Proximity	**Location:**	All Locations
Market:	Long Beach, CA|Los Angeles, CA|	**Ownership Type:**	All Types	**All Electric:**	Any	**Building Age:**	0 - 9 Years|10 - 19 Years| 20 - 29 Years|
Zip Code:	Any Zip Code	**Number of Floors:**	< 5 Floors|5 - 9 Floors|10 - 19 Floors|20 - 29 Floors|30 - 39 Floors|40 - 49 Floors|	**Agency Managed:**	Any	**Property Class:**	Class A|

Income and Expense Overview - 2010

	Total Building Rentable Area					Total Office Rentable Area				
	28 Blds	9,240,939 Sq. Ft.				9,006,416 Sq. Ft.				
		Dollars/S.F.		Mid Range		Dollars/S.F.		Mid Range		
	# Blds	Avg	Mdn	Low	High	Avg	Mdn	Low	High	
Income										
Total Rental Income	15	37.53	30.06	25.57	41.14	38.49	32.88	25.98	41.14	
Total Income	15	40.73	32.80	28.62	43.05	41.77	35.88	29.08	43.33	
Expense										
Total Oper Exp	28	8.78	7.71	6.86	9.45	9.01	8.23	6.91	9.51	
Total Oper + Fixed Exp	28	14.12	12.51	10.53	16.11	14.48	12.93	10.53	16.15	

Income and Expense Summary - 2010

Income										
Office Rent	16					38.78	32.49	25.95	41.26	
Retail Rent										
Other Rent	5	11.28	4.70	2.19	35.08					
Telecom Income										
Miscellaneous Income	16	3.17	2.88	1.11	3.41					
Expense										
Cleaning	28	1.44	1.42	1.27	1.62	1.46	1.43	1.29	1.62	
Repair / Maintenance	28	2.19	1.65	1.34	2.57	2.23	1.65	1.34	2.59	
Utility	28	2.49	2.27	2.09	2.70	2.53	2.27	2.11	2.71	
Roads / Grounds	28	0.12	0.13	0.06	0.16	0.13	0.13	0.06	0.16	
Security	28	0.85	0.84	0.71	1.03	0.87	0.84	0.76	1.06	
Administrative	26	1.53	1.32	1.00	1.91	1.57	1.41	1.11	1.93	
Fixed	28	5.34	5.15	3.43	6.06	5.47	5.15	3.43	6.16	
Directly Expensed Leasing	5	0.70	0.35	0.02	1.39	0.77	0.35	0.02	1.50	
Amortized Leasing	8	3.01	2.86	1.92	4.14	3.05	2.87	1.93	4.22	

Income and Expense Overview - Trend Data 2013

	Total Building Rentable Area					Total Office Rentable Area				
	24 Blds	9,863,037 Sq. Ft.				9,390,817 Sq. Ft.				
		Dollars/S.F.		Mid Range		Dollars/S.F.		Mid Range		
	# Blds	Avg	Mdn	Low	High	Avg	Mdn	Low	High	
Income										
Total Rental Income	9	23.84	25.65	17.65	30.38	24.49	27.18	17.90	30.39	
Total Income	9	26.24	28.43	18.74	32.54	26.95	30.14	19.01	32.55	
Expense										
Total Oper Exp	20	7.87	7.94	6.51	9.85	8.32	8.06	6.88	10.45	
Total Oper + Fixed Exp	19	12.29	12.38	11.38	14.06	12.98	13.75	12.09	14.24	

Income and Expense Summary - Trend Data 2013

Income										
Office Rent	11					22.69	24.85	11.38	27.81	
Retail Rent	6	17.93	17.97	10.01	29.23					
Other Rent										
Telecom Income										
Miscellaneous Income	11	2.35	2.27	0.39	2.92					
Expense										
Cleaning	24	1.43	1.37	1.07	1.79	1.43	1.40	1.09	1.79	
Repair / Maintenance	22	2.06	1.54	0.91	2.44	2.08	1.54	0.91	2.46	
Utility	22	1.88	2.08	1.69	2.39	1.89	2.09	1.71	2.39	
Roads / Grounds	22	0.08	0.09	0.06	0.17	0.09	0.09	0.07	0.17	
Security	22	1.11	1.13	0.74	1.46	1.18	1.15	0.79	1.61	
Administrative	20	1.52	1.61	1.28	1.82	1.60	1.73	1.36	1.85	
Fixed	21	4.21	4.09	2.40	5.61	4.44	4.21	2.84	5.62	
Directly Expensed Leasing	5	1.63	0.13	0.06	0.17	1.67	0.13	0.06	0.17	
Amortized Leasing	5	8.05	5.48	3.90	8.99	8.17	5.48	3.90	9.25	

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Report Year:	2013	**Sector:**	All Sectors	**Building Size:**	100,000 - 299,999 Sq Ft| 300,000 - 599,999 Sq Ft| 600,000+ Sq Ft|	**Unit of Measure:**	Square Feet
Country:	USA	**Building Type:**	All Functions	**Public Transit:**	Any Proximity	**Location:**	All Locations
Market:	Long Beach, CA|Los Angeles, CA|	**Ownership Type:**	All Types	**All Electric:**	Any	**Building Age:**	0 - 9 Years|10 - 19 Years| 20 - 29 Years|
Zip Code:	Any Zip Code	**Number of Floors:**	< 5 Floors|5 - 9 Floors|10 - 19 Floors|20 - 29 Floors|30 - 39 Floors|40 - 49 Floors|	**Agency Managed:**	Any	**Property Class:**	Class A|

Parking									
Telecom	5	0.08	0.08			0.08	0.08		

Income and Expense Detail - 2010

	Total Building Rentable Area					Total Office Rentable Area			
		Dollars/S.F.		Mid Range		Dollars/S.F.		Mid Range	
	# Blds	Avg	Mdn	Low	High	Avg	Mdn	Low	High
Income									
Office Rent									
Base Rent	15					34.46	28.13	25.81	37.00
Pass Throughs	9					1.51	1.13	0.55	1.50
Escalations	14					4.06	2.39	1.57	2.72
Lease Cancellations	10					0.31	0.31	0.12	0.75
Rent Abatements (-)	6					1.75	1.85	0.88	2.52
Telecom Income									
Rooftop Income									
Wire/Riser Access Income	5	0.08	0.04	0.04	0.13				
Miscellaneous Income									
Gross Parking Income	15	2.96	2.79	1.60	3.23				
Tenant Service Income	14	0.14	0.17	0.06	0.25				
Other Misc. Income	15	0.17	0.05	0.03	0.39				
Expense									
Cleaning									
Payroll, Taxes, Fringes									
Routine Contracts	28	1.19	1.19	0.95	1.31	1.21	1.19	0.96	1.31
Window Washing	27	0.07	0.06	0.03	0.08	0.07	0.06	0.03	0.09
Other Specialized Contracts									

Parking									
Telecom									

Income and Expense Detail - Trend Data 2013

	Total Building Rentable Area					Total Office Rentable Area			
		Dollars/S.F.		Mid Range		Dollars/S.F.		Mid Range	
	# Blds	Avg	Mdn	Low	High	Avg	Mdn	Low	High
Income									
Office Rent									
Base Rent	11					16.50	19.24	10.99	27.45
Pass Throughs									
Escalations									
Lease Cancellations									
Rent Abatements (-)	7					0.88	0.58	0.56	1.45
Telecom Income									
Rooftop Income									
Wire/Riser Access Income									
Miscellaneous Income									
Gross Parking Income	10	2.23	2.19	1.39	2.55				
Tenant Service Income									
Other Misc. Income	11	0.10	0.07	0.01	0.12				
Expense									
Cleaning									
Payroll, Taxes, Fringes									
Routine Contracts	22	1.17	1.27	0.84	1.48	1.18	1.27	0.84	1.48
Window Washing	24	0.07	0.05	0.03	0.08	0.07	0.05	0.03	0.08
Other Specialized Contracts	7	0.03	0.04	0.01	0.07	0.03	0.04	0.01	0.07

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Report Year:	2013	**Sector:**	All Sectors	**Building Size:**	100,000 - 299,999 Sq Ft| 300,000 - 599,999 Sq Ft| 600,000+ Sq Ft|	**Unit of Measure:**	Square Feet
Country:	USA	**Building Type:**	All Functions	**Public Transit:**	Any Proximity	**Location:**	All Locations
Market:	Long Beach, CA|Los Angeles, CA|	**Ownership Type:**	All Types	**All Electric:**	Any	**Building Age:**	0 - 9 Years|10 - 19 Years| 20 - 29 Years|
Zip Code:	Any Zip Code	**Number of Floors:**	< 5 Floors|5 - 9 Floors|10 - 19 Floors|20 - 29 Floors|30 - 39 Floors|40 - 49 Floors|	**Agency Managed:**	Any	**Property Class:**	Class A|

Supplies / Materials	23	0.13	0.12	0.10	0.16	0.13	0.13	0.10	0.16	Supplies / Materials	19	0.09	0.12	0.06	0.14	0.10	0.12	0.06	0.15
Trash Removal / Recycling	28	0.05	0.05	0.04	0.06	0.05	0.05	0.04	0.06	Trash Removal / Recycling	24	0.03	0.04	0.02	0.06	0.03	0.04	0.02	0.06
Miscellaneous / Other	7	0.01	0.01	0.00	0.02	0.01	0.01	0.00	0.02	Miscellaneous / Other	7	0.10	0.16	0.03	0.21	0.10	0.16	0.03	0.21
Repair / Maintenance										***Repair / Maintenance***									
Payroll, Taxes, Fringes	26	0.86	0.80	0.72	0.85	0.86	0.80	0.73	0.85	Payroll, Taxes, Fringes	19	0.88	0.74	0.51	0.94	0.89	0.75	0.52	0.94
Elevator	28	0.21	0.18	0.13	0.27	0.22	0.19	0.13	0.28	Elevator	24	0.28	0.19	0.16	0.33	0.29	0.19	0.16	0.34
HVAC	28	0.28	0.21	0.14	0.38	0.28	0.22	0.14	0.38	HVAC	24	0.32	0.17	0.08	0.33	0.33	0.17	0.08	0.33
Electrical	28	0.10	0.06	0.04	0.13	0.10	0.06	0.04	0.13	Electrical	24	0.15	0.05	0.04	0.18	0.15	0.05	0.04	0.18
Structural / Roofing	13	0.02	0.02	0.01	0.02	0.02	0.02	0.01	0.02	Structural / Roofing	11	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Plumbing	28	0.08	0.05	0.03	0.12	0.08	0.05	0.03	0.12	Plumbing	24	0.06	0.04	0.03	0.08	0.06	0.04	0.03	0.08
Fire / Life Safety	28	0.11	0.12	0.09	0.14	0.12	0.12	0.09	0.14	Fire / Life Safety	24	0.11	0.11	0.08	0.13	0.11	0.11	0.08	0.13
General Building Interior	28	0.13	0.13	0.06	0.14	0.13	0.13	0.06	0.14	General Building Interior	24	0.16	0.09	0.05	0.16	0.16	0.09	0.05	0.16
General Building Exterior	24	0.10	0.08	0.06	0.16	0.10	0.08	0.06	0.17	General Building Exterior	21	0.08	0.06	0.02	0.10	0.08	0.06	0.02	0.10
Parking Lot	7	0.13	0.03	0.03	0.04	0.13	0.03	0.03	0.04	Parking Lot	5	0.35	0.03	0.02	0.31	0.35	0.03	0.02	0.32
Miscellaneous / Other	22	0.45	0.10	0.03	0.65	0.45	0.10	0.03	0.65	Miscellaneous / Other	17	0.08	0.08	0.06	0.13	0.08	0.08	0.06	0.13
Utility										***Utility***									
Total Electricity	28	2.25	2.07	1.95	2.33	2.28	2.07	1.96	2.36	Total Electricity	24	1.64	1.76	1.43	2.20	1.65	1.77	1.43	2.20
Gas	21	0.05	0.06	0.04	0.08	0.05	0.06	0.04	0.08	Gas	18	0.04	0.03	0.01	0.06	0.04	0.03	0.01	0.06
Fuel Oil										Fuel Oil									
Steam										Steam									
Chilled Water										Chilled Water									
Water / Sewer	28	0.13	0.12	0.10	0.15	0.14	0.12	0.10	0.15	Water / Sewer	23	0.12	0.12	0.06	0.22	0.12	0.12	0.06	0.22
Roads / Grounds										***Roads / Grounds***									
Landscaping	28	0.11	0.11	0.06	0.16	0.11	0.11	0.06	0.16	Landscaping	24	0.08	0.09	0.06	0.14	0.08	0.09	0.06	0.14
Snow Removal										Snow Removal									
Miscellaneous / Other	8	0.04	0.04	0.02	0.04	0.04	0.04	0.02	0.04	Miscellaneous / Other	9	0.31	0.01	0.01	0.07	0.31	0.01	0.01	0.07

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Report Year:	2013	**Sector:**	All Sectors	**Building Size:**	100,000 - 299,999 Sq Ft| 300,000 - 599,999 Sq Ft| 600,000+ Sq Ft|	**Unit of Measure:**	Square Feet
Country:	USA	**Building Type:**	All Functions	**Public Transit:**	Any Proximity	**Location:**	All Locations
Market:	Long Beach, CA|Los Angeles, CA|	**Ownership Type:**	All Types	**All Electric:**	Any	**Building Age:**	0 - 9 Years|10 - 19 Years| 20 - 29 Years|
Zip Code:	Any Zip Code	**Number of Floors:**	< 5 Floors|5 - 9 Floors|10 - 19 Floors|20 - 29 Floors|30 - 39 Floors|40 - 49 Floors|	**Agency Managed:**	Any	**Property Class:**	Class A|

Security										***Security***									
Payroll, Taxes, Fringes										Payroll, Taxes, Fringes									
Contracts	28	0.78	0.84	0.51	0.95	0.80	0.84	0.52	0.96	Contracts	21	1.04	1.08	0.69	1.42	1.09	1.13	0.71	1.49
Equipment	13	0.07	0.04	0.02	0.07	0.07	0.04	0.02	0.07	Equipment	9	0.04	0.03	0.03	0.04	0.05	0.04	0.03	0.04
Miscellaneous / Other	9	0.04	0.05	0.00	0.07	0.05	0.05	0.00	0.08	Miscellaneous / Other	12	0.05	0.02	0.01	0.06	0.06	0.02	0.01	0.06
Administrative										***Administrative***									
Payroll, Taxes, Fringes	26	0.79	0.69	0.55	0.74	0.81	0.73	0.56	0.75	Payroll, Taxes, Fringes	23	0.60	0.68	0.55	0.75	0.63	0.69	0.58	0.75
Management Fees	15	1.16	0.96	0.53	1.14	1.19	0.96	0.57	1.16	Management Fees	13	0.71	0.57	0.36	0.82	0.75	0.57	0.38	0.91
Professional Fees	18	0.01	0.02	0.00	0.03	0.01	0.02	0.00	0.03	Professional Fees	17	0.06	0.02	0.00	0.16	0.07	0.03	0.01	0.16
General Office Expenses	22	0.29	0.11	0.07	0.31	0.30	0.11	0.07	0.31	General Office Expenses	24	0.28	0.10	0.05	0.21	0.29	0.10	0.05	0.21
Employee Expenses	19	0.01	0.01	0.00	0.02	0.01	0.01	0.00	0.02	Employee Expenses	14	0.01	0.01	0.00	0.01	0.01	0.01	0.00	0.01
Miscellaneous / Other	17	0.07	0.06	0.04	0.18	0.07	0.06	0.04	0.18	Miscellaneous / Other	12	0.07	0.06	0.01	0.13	0.07	0.06	0.01	0.13
Fixed										***Fixed***									
Real Estate Taxes	27	4.21	4.10	2.90	4.55	4.28	4.25	3.00	4.56	Real Estate Taxes	24	3.06	2.87	1.81	3.74	3.21	2.93	1.87	3.74
Personal Property Tax										Personal Property Tax									
Other Tax	12	0.06	0.04	0.04	0.09	0.06	0.05	0.04	0.09	Other Tax	12	0.04	0.05	0.03	0.05	0.04	0.05	0.03	0.05
Building Insurance	28	1.11	0.88	0.63	1.56	1.14	0.88	0.63	1.68	Building Insurance	17	1.22	1.16	0.82	1.73	1.24	1.19	0.84	1.73
License / Fees / Permits	10	0.06	0.05	0.00	0.08	0.06	0.05	0.00	0.08	License / Fees / Permits	7	0.03	0.03	0.01	0.04	0.03	0.03	0.01	0.04
Directly Expensed Leasing										***Directly Expensed Leasing***									
Payroll										Payroll									
Commissions / Fees										Commissions / Fees									
Advertising / Promotion										Advertising / Promotion	6	0.08	0.10	0.03	0.12	0.08	0.11	0.03	0.12
Professional Fees										Professional Fees	5	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Tenant Improvements										Tenant Improvements									

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Report Year:	2013	**Sector:**	All Sectors	**Building Size:**	100,000 - 299,999 Sq Ft| 300,000 - 599,999 Sq Ft| 600,000+ Sq Ft|	**Unit of Measure:**	Square Feet
Country:	USA	**Building Type:**	All Functions	**Public Transit:**	Any Proximity	**Location:**	All Locations
Market:	Long Beach, CA|Los Angeles, CA|	**Ownership Type:**	All Types	**All Electric:**	Any	**Building Age:**	0 - 9 Years|10 - 19 Years| 20 - 29 Years|
Zip Code:	Any Zip Code	**Number of Floors:**	< 5 Floors|5 - 9 Floors|10 - 19 Floors|20 - 29 Floors|30 - 39 Floors|40 - 49 Floors|	**Agency Managed:**	Any	**Property Class:**	Class A|

Other Leasing Costs										Other Leasing Costs	5	0.07	0.02	0.02	0.04	0.07	0.02	0.02	0.04
Amortized Leasing										***Amortized Leasing***									
Commissions / Fees	8	1.08	0.76	0.68	1.65	1.09	0.76	0.68	1.68	Commissions / Fees	5	1.70	1.52	1.46	2.13	1.73	1.53	1.51	2.14
Tenant Improvements	7	1.77	1.79	1.50	2.44	1.79	1.84	1.51	2.48	Tenant Improvements									
Other Leasing Costs	6	0.29	0.21	0.14	0.23	0.29	0.22	0.14	0.24	Other Leasing Costs									
Parking										***Parking***									
In-house										In-house									
Contract										Contract									
Snow Removal										Snow Removal									
Shuttle										Shuttle									

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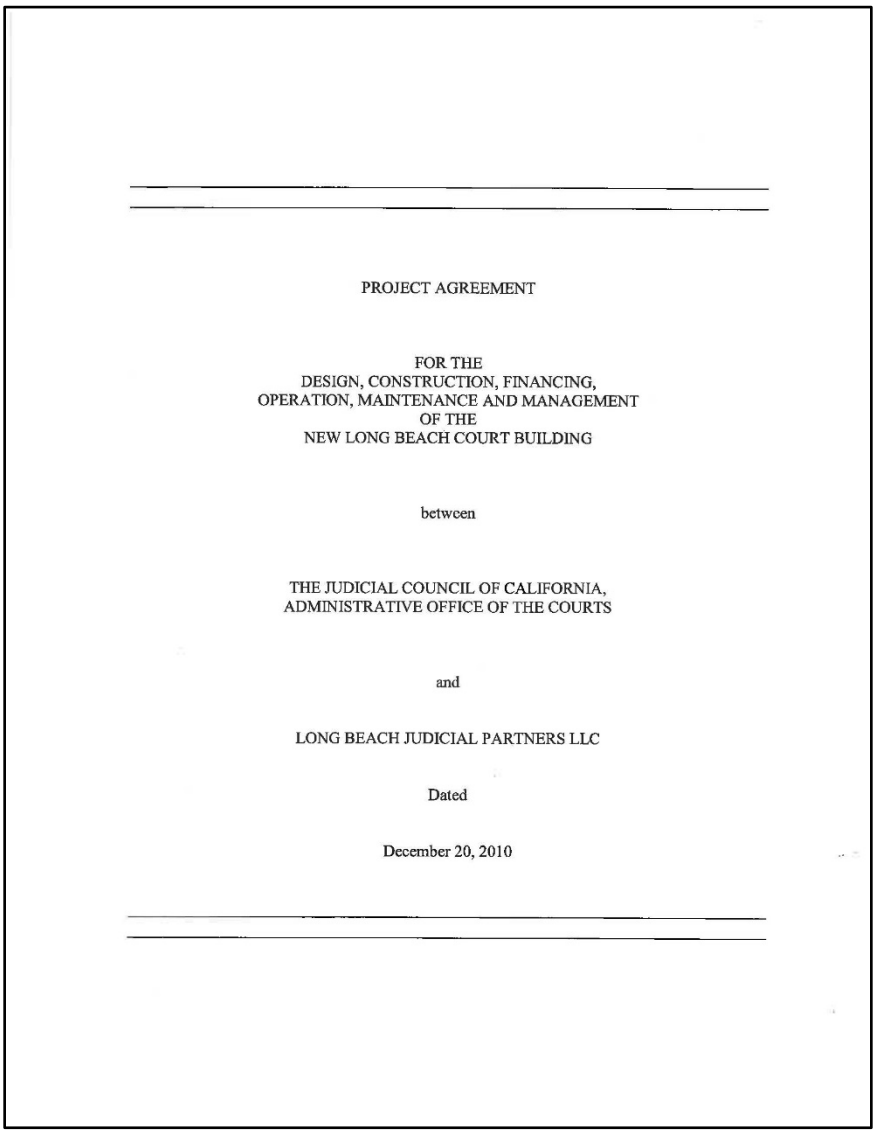
Appendix 8

Section 18.4 Base Operating Charge and Market Adjusted Operating Charge (Page 123)

New Long Beach Courthouse Project Agreement
Article 18-Service Fee and Other Payments



PROJECT AGREEMENT

FOR THE
DESIGN, CONSTRUCTION, FINANCING,
OPERATION, MAINTENANCE AND MANAGEMENT
OF THE
NEW LONG BEACH COURT BUILDING

between

THE JUDICIAL COUNCIL OF CALIFORNIA,
ADMINISTRATIVE OFFICE OF THE COURTS

and

LONG BEACH JUDICIAL PARTNERS LLC

Dated

December 20, 2010

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SECTION 18.3. CAPITAL CHARGE.

The Capital Charge shall be $35,940,196.00, shall be fixed for the Term and shall not be Indexed Linked.

SECTION 18.4. BASE OPERATING CHARGE AND MARKET ADJUSTED OPERATING CHARGE.

(A) Base Operating Charge. The Base Operating Charge for the Contract Year ending June 30, 2011 shall be $13,844,467.00. The Base Operating Charge for each Contract Year thereafter shall be Index Linked.

(B) Market Adjusted Operating Charge. The Market Adjusted Operating Charge for the Contract Year ending June 30, 2011 shall be $376,670.00, consisting of the sum of the following elements, as described in Table 2.1.2 of Appendix 6 (Management Standards):

Service	Amount
(1) Roads and Grounds Maintenance	$33,842.00
(2) Exterior Janitorial	$49,500.00
(3) Elevators and Conveyance Systems	$143,550.00
(4) Asset and Resource Trash and Recycling Management	$43,125.00
(5) Security Electronics	$106,652.50

Each such service element price component of the Market Adjusted Operating Charge shall be Index Linked except as and to the extent it is required to be benchmarked or market tested under Appendix 9 (Benchmarking and Market Testing Procedures).

SECTION 18.5. REQUIRED OPERATING PERIOD INSURANCE CHARGE.

The Required Operating Period Insurance Charge for the Contract Year ending June 30, 2011 shall be $605,843.00. The Required Operating Period Insurance Charge shall be Index Linked except as and to the extent it is required to be benchmarked under Section 4 of Appendix 9 (Benchmarking and Market Testing Procedures).

SECTION 18.6. DEDUCTIONS CREDIT.

The Deductions Credit shall be the sum of all Deductions imposed pursuant to Appendix 8 (Deductions) hereunder. Examples of the calculation of Deductions are included in Appendix 13 (Example Deductions Calculations).

SECTION 18.7. ENERGY EFFICIENCY CHARGE OR CREDIT.

The AOC is generally obligated to pay energy costs relating to the AOC Space on a reimbursable basis as provided in subsection 18.8(3). The energy efficiency charge or credit shall be an amount determined pursuant to Section 2.2.5 of Appendix 6 (Management Standards) based on the energy

Appendix 9

Unabridged Project Scenario Spreadsheet
Using the Initial Assigned Values

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	Traditional Public Delivery	Not-for-Profit Tax-Exempt Model	Availability Based P3
Funding and Project Assumptions	Tax-Exempt G.O. Bonds	63-20/501c3 bonds	Private Equity and Debt
Initial estimated cost (absent fees and capitalized interest)	$200,000,000	$200,000,000	$200,000,000
Percentage of added cost related to increased timeline	15%	N/A	N/A
Construction Cost of Project	$230,000,000	$200,000,000	$200,000,000
Loan-to-Value Ratio	100%	100%	93%
Percentage of Equity Investment	N/A	N/A	7%
Interest Rate on Debt	3.50%	3.85%	6.88%
Required Equity Yield (IRR) for Long Beach Courthouse	N/A	N/A	14.48%
Construction Period in years	2.5	2	2
Interest Rate on Invested Funds	1%	1%	N/A
Gross Square Feet (calculated as a percentage of LBCH)	313,824	313,824	313,824
Souces of Funds			
Debt Issued (with interest)	$262,316,024	$228,291,220	$235,715,947
Equity Invested (with interest)	N/A	N/A	$21,621,874
Total Amount Funded	**$262,316,024**	**$228,291,220**	**$257,337,821**
Use of Funds			
Construction Costs or Turnkey Costs	$230,000,000	$200,000,000	$200,000,000
Loan Origination/Discount Fees (Typically 1% of turnkey cost)	$2,300,000	$2,000,000	$2,000,000
Legal, Accounting, Admin (Typically 1% of turnkey cost)	$2,300,000	$2,000,000	$2,000,000
Capitalized Interest/Cost of Carry AND Equity	$19,666,024	$15,291,220	$20,337,821
Debt Service Reserve Fund	N/A	$0	$9,000,000
Project Developer/Construction Management Fee	$8,050,000	$9,000,000	$24,000,000
Typical fee percentage for private developer/CM	*3.50%*	*4.50%*	*12%*
Total Funds Used	**$262,316,024**	**$228,291,220**	**$257,337,821**
Debt Service Assumptions			
Loan Amount (including Cap I and Fees)	$262,316,024	$228,291,220	$257,337,821
Term in years	30	30	30
Term in Months	360	360	360
Annual Interest Rate (blended rate for Availability Based Model)	3.50%	3.85%	7.41%
Montlhly Interest Rate	0.2917%	0.3208%	0.6177%
Debt Service			
Monthly Debt Service	$1,177,916	$1,070,248	$1,783,862
Annual Debt Service	$14,134,994	$12,842,976	$21,406,346
Operations and Maintenance			
Annual O&M cost per square foot	$10.04	$10.04	$35.64
Total Annual Cost of O&M	$3,150,793	$3,150,793	$11,184,687
Lease Payments (Debt Service+O&M)			
Annual Lease Payment	**$17,285,787**	**$15,993,769**	**$32,591,034**
Monthly Lease Payment	**$1,440,482**	**$1,332,814**	**$2,715,919**
Capitalized Interest Iterations			
Capitalized Interest (First Iteration)	$18,198,750	$14,271,000	$18,739,021
Capitalized Interest (Second Iteration)	$19,563,656	$15,227,157	$20,220,671
Capitalized Interest (Third Iteration)	$19,666,024	$15,291,220	$20,337,821

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