CMAA Owners Group
Public vs Private Cost Benchmarking Analysis
&P3 Project Delivery Case Study

November 14, 2017
Roundtable Agenda

0 Welcome – Mark & Will (11:30am)
0 Lunch (11:30 – 12:00pm)
0 Introductions (11:45 – 11:50)
0 CMAA Updates from Jay (11:50– 12:00)
0 Public vs. Private Cost Benchmarking Study (12:00- 12:25)
0 P3 Case Study- LB Civic Center (12:25 – 12:50)
0 Survey (12:50- 12:55)
0 Closing Remarks (12:55 – 1:00)
0 Raffle (1:00)
0 Hard Hat Tour (1:00 – 1:30)
CMAA Owners’ Committee Mission Statement

The Mission of the Southern California CMAA Owner’s Committee is to provide forums, events, and trainings in which an environment of collaboration and forward thinking ideas amongst industry owner construction professionals can take place to help facilitate delivery of better quality and added value to construction projects.
Public vs. Private
Cost
Benchmarking Analysis

Presented by: Mark Zakhour CASp
Sr. Manager Construction Services/ Campus Deputy Building Official
California State University, Long Beach
Sample Project

Project Value $10M

- Construction Budget: 72%
- Architectural/Engineering Fee: 9%
- Permitting/Plan Check/SFM: 3%
- Geotechnical Design and Inspection: 2%
- Group II Furniture/Equipment: 4%
- Campus Contingency: 5%
- PRE fee at 7% of Construction Cost: 5%
Allocation of 7% Project Fee

- Building Code Inspection: 1.86%
- Design and Construction Services Staff: 1%
- Construction Management Consultant Support: 1.5%
- Materials Testing and Inspection: 2%
- CPDC Fee: 0.5%
- Service Fee: 0.14%
- Financial Mgmt. (Total): 7%
Benchmarking Studies
Third Party – Public/Private

- Project Types
- Construction Cost vs Full Project Cost
- Average 5-10 Sample Projects
- Range $272-$740
- Public Private Variance
Overall Average % Cost Variances - Higher Education vs Private Development
(Sample of Recent Projects)

- Admin Bldg: 24%
- Housing: 20%
- Classroom: 13%
- Athletics: 13%
Source of Increased Costs vs. Public Sector

**Public Works Requirements (≤ 23%)**

- Prevailing Wage / Certified Payroll: 1% - 12%
- Public Bid, DVBE, SBE, Public Contract Law: 2% - 10%
- CSU Specific Admin Fees: 0.5% - 1.5%

**Other Higher Education Factors (≤ 24%)**

- Design/Construction Standards: 1% - 6%
- Quality/Durability Standards: 2% - 8%
- Campus Logistics & Risk Elements: 1% - 10%

*Adjustment: Private Developer Financing Costs*(-3% to -8%)

*Total Range of Cost Impact* 3.5% - 39.5%
Prevailing Wage/Certified Payroll

• Most common item attributed to the higher costs for public projects.

• Larger construction projects/firms will use union labor so PW will not have an impact on costs.

• Various published reports show anywhere from 0 to 35% premium between union/PW and nonunion construction cost.

• The CSU White Paper on “Real Property Partnership Projects - Prevailing Wage” states that on average the CSU sees an 11% increase in cost due to PW.

• Our research shows typically a 10-12% premium for small to medium size construction projects, but less of a premium for larger projects.

• Wage rate impacts labor intensive trades more such as concrete, drywall and wood framing.
Source of Increased Costs vs. Public Sector Procurement Process/Public Contract Law - DVBE & SBE

- Procurement processes for public sector follow rigid bidding/selection guidelines that limit the pool of bidders.

- Private projects, in most cases, provide a more streamlined, negotiated process for GMP contracts.

- Public institutions typically require rigorous pre-qualification processes to narrow the bidders to a smaller pool of selected qualified firms.

- In a hyper-construction market, contractors will be selective in what projects they pursue, and private negotiate work is viewed as more profitable.

- In short, it is just more expensive administratively to work in public works environment and there is more risk.
Source of Increased Costs vs. Public Sector

Design Construction Standards - LEED, Net-Zero, Special Documentation Requirements

• Higher standards for:
  o energy efficiency
  o sustainable materials
  o water conservation
  o alternate energy elements

• Material specifications more rigid and restrictive.

• Certification of projects:
  o USGBC LEED program
  o Living Building Challenge
Source of Increased Costs vs. Public Sector

Quality/Durability Standards

• High quality design standards.

• Higher performing building facades.

• Focus on long term maintenance and overall durability.

• Longer life spans.

• MEP systems and equipment are viewed from a O&M perspective
Source of Increased Costs vs. Public Sector

Campus Operational Constraints and Risk Elements

• Construction work in public works has specific risks and challenges.

• Cost premiums for:
  o Difficult access for equipment
  o Material handling
  o Temporary construction
  o Phasing
  o Excessive Liquidated Damages
  o Traffic controls
  o Added safety and security personnel.
  o Worker Parking
  o Lack of staging areas
  o Proximity to other operational buildings
Cost Impact of Small Projects

Impact of Project Size on Construction Cost

- 500,000 SF Project: $592/SF, 12% Savings
- 50,000 SF Project: $670/SF, Baseline
- 5,000 SF Project: $875/SF, 30% Premium
What we have done to try to **lower the cost of construction**:

- Minimize/eliminate constraints and phasing.
- Allow proper amount of time for project/ avoid compressed schedules.
- Grouping Projects together for economy of scale.
- Start with budget targets – manage scope and expectations with customer group.
- Explore new delivery methods and integrated project approaches.
- In-house Design/Construction for small/standardized projects.
- Adjust aesthetics and architecture standards and research new materials.
- Minimize addendums during bid.
- Schedule bid period at times when market is slow and allow a proper amount of time to bid.
P3 Delivery
Long Beach Civic Center Project Case Study

Presented by: William Gorham Jr., Senior Associate
Plenary Group
Motivator & Solution

Motivator:
Build new city hall & main library solving seismic concerns with no new general fund obligation.

Turnkey Solution:
• Leverage credit of City
• Capture building efficiency energy savings
• Add Harbor dept building
• Monetize excess land on site with private development
**Overview**

- **City Facilities:** New City Hall, new Main Library, revitalized Lincoln Park, parking facilities

- **Port Facilities:** New Port of Long Beach headquarters building

- **Private Development:** mixed-use development including

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### KEY STATISTICS

| CLIENT: | The City of Long Beach  
The Port of Long Beach |
| FINANCIAL CLOSE: | April 2016 |
| COMPLETION DATE: | June 2019 (City Occupancy)  
Nov 2020 (Project Occupancy) |
| VALUE: | U$523 million |
| BUILDER: | Clark Construction Group |
| ARCHITECT/ENGINEER: | Skidmore, Owings & Merrill |
| SERVICES: | Johnson Controls |
| CONTRACT TERMS: | City Assets: 40 years, Design-Build-Finance-Operate-Maintain  
Port Assets: Design-Build-Finance |
BEFORE

LONG BEACH CIVIC CENTER
Total Acreage: 15.87

164567.43 (sf)  
3.78 (acre)

274641.34 (sf)  
6.30 (acre)

38668.00 (sf)  
0.89 (acre)

213623.70 (sf)  
4.90 (acre)
After
### Key Aspects of Design & Construction

#### Civic Elements

<table>
<thead>
<tr>
<th>Structure</th>
<th>Details</th>
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</table>
| **City Hall**     | • 11 stories  
                   • 254,000 ft² of office space with public counters on bottom floor  
                   • 250 seat Council Chambers (shared w/ Port)                                                                                     |
| **Port HQ**       | • 11 stories  
                   • 237,000 ft² of office space                                                                                                                                 |
| **Civic Plaza**   | • 73,000 ft²  
                   • Subterranean employee parking                                                                                                     |
| **Main Library**  | • 92,500 ft² of for library programming  
                   • Flexible community space, special collections rooms, maker space                                                                 |
| **Lincoln Park**  | • Approx. 4.9 acres  
                   • Dog park, children’s playground, events lawn, restrooms                                                                           |

#### City Hall and Port Headquarters

The City Hall and Port headquarters are designed as separate and distinct buildings to meet their respective programming and security requirements, as well as to create a modern and efficient workplace environment. The separate buildings have shared facilities and both open to the new Civic Plaza.

#### Main Library and Lincoln Park

The New Main Library is based on sustainable design and state-of-the-art programming and interior planning. The new library will be relocated to the northern end of the revitalized Lincoln Park with dual entries to engage park users and the surrounding neighborhoods to the north. A revitalized Lincoln Park has been designed with walkways, lighting and landscaping to create multiple activity zones and improved amenability and public safety.
Key Aspects of Design & Construction

View from Magnolia
Key Aspects of Design & Construction

Front Entrance from Ocean
Key Aspects of Design & Construction

Main Library From Lincoln Park
Key Aspects of Design & Construction

Commercial Development

To create a more vibrant and active Civic Center, and to assist with covering the cost of the civic elements of the project, private development on excess land was encouraged. Private uses were open to residential, retail, office and/or hotel. The City also felt that by including a private development component, it could help create enough density to ensure a high level of pedestrian activity to enliven the space and enhance safety, which the old design did not provide.

Commercial Development Components

3rd & Pacific
- Multifamily residential development with up to 200 units
- 250 parking spaces

Center Block (proposed)
- 2-building mixed use project
- Up to 580 residential units
- 32,000 ft² retail
- 200 room hotel
- 725 parking spaces

Covenants in the transaction require that 10% of all residential units must be affordable to moderate income residents.
Key Aspects of Design & Construction Connected to the Community

Environmental

- City Hall is highly efficient, flexible, and sustainable—incorporating an array of features from under-floor air distribution to extensive use of natural light
- 25% of all power used by the Civic Center will be generated by onsite rooftop solar PV systems
- All landscaping will feature California-native and water-wise planting
- PPLB is required to achieve LEED Gold certification for the Civic Center buildings (LDs are assessed if this certification is not achieved)
- Transit connectivity is at the core of the campus design

As a way to preserve and incorporate Long Beach’s rich history, PPLB is working with local preservation and historical societies to gather input and obtain historical fixtures that can be incorporated in the design of the new Civic Center.

The team completed more than 100 community meetings, information sessions and design charrettes as a part of the iterative design and negotiations process.
Key Aspects of Design & Construction

Construction Phasing

Timeline

2016-2019  Complete City Hall & Port Headquarters on Old Courthouse site

2017-2019  Build new Main Library on existing Lincoln Park open space

2019-2020  Remove existing City Hall & Main Library buildings

2020-2021  Complete new Lincoln Park

2020-2022  Complete Mixed Use Development
The Project Agreement includes a 40-year Operations and Maintenance obligation which ensures that the Civic Center is maintained at a “Good” or better condition.

PPLB:
- Must operate 24-hours per day, 7-days per week
- Is responsible for all capital investment, and life-cycle replacement over the entire 40-year maintenance period
- Is not responsible for movable furniture, fixtures, equipment and shared chambers Audio-Visual systems

The facility is required to achieve an FCI of 0.15 or less at Handback, and PPLB must guarantee an FCI of 0.20 or less at Handback. This FCI indicates that the building will be in a condition that is at least 80%-85% of like-new condition at Handback.

The Project Agreement requires compliance with Key Performance Indicators to ensure optimal operations, life-cycle replacements of all building systems and Service Payment reductions for any non-functioning systems, which is integrated into the overall Operations & Maintenance Model.

<table>
<thead>
<tr>
<th>Severity</th>
<th>Emergency</th>
<th>Urgent</th>
<th>Routine</th>
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<tbody>
<tr>
<td>Priority</td>
<td>1</td>
<td>2</td>
<td>3</td>
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During Operating Hours

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<tr>
<th>Response Time</th>
<th>Completion Time</th>
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<tr>
<td>10 minutes</td>
<td>2 hours</td>
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<tr>
<td>2 hours</td>
<td>Within 2 hours of start of next period of Operating Hours</td>
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<tr>
<td>24 hours</td>
<td>5 Business Days</td>
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</tbody>
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Outside Operating Hours

<table>
<thead>
<tr>
<th>Response Time</th>
<th>Completion Time</th>
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<tbody>
<tr>
<td>1 hour</td>
<td>2 hours</td>
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<tr>
<td>Within 2 hours of start of next period of Operating Hours</td>
<td>End of next Business Day</td>
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<tr>
<td>Next Business Day</td>
<td>5 Business Days</td>
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Community outreach

106 outreach meetings and events, including:

- 12 Council District Meetings
- Friends of Lincoln Park
- DT Residents Council
- DLBA events
- First Congregation Church

Met with stakeholder groups Including:

- Arts Council
- Long Beach Symphony
- CSULB
- City College Long Beach Transit
- Pacific Gateway
Design build process

2015

Design

2016

50% DD
50% CD

Financial Close
100% DD
100% CD

2017

Construction

2018

Ground Breaking
Bottom of Excavation
Curtain Wall
Topping Out

2019

Final Completion
Multiple Plan Reviews

• 2015 Programing & Basis of Design

• 2016 Design Development

• 2017 Final CD & Plan Check

• Early Works packages for grading & structure

• Deferred submittal on some components (e.g., fire alarm, solar)

*Over 12,000 client review comments*
Process

- **RFQ Release**
  - March 2013

- **RFP Release**
  - February 2014

- **Team Selected**
  - December 2014

- **Project Approvals**
  - October / November 2015

- **Construction Start**
  - June 2016

- **Short List**
  - October 2013

- **RFP Response**
  - June 2014

- **Update Proposal**
  - October 2015

- **Proprietary Meetings**

- **Design Workshops**

- **Study Sessions**

- **Open Houses**

- **Community Meetings**

- **Study Sessions**

- **Job Fairs**

- **2013**

- **2014**

- **2015**

- **2016**

- **2021**
Defining Public-private partnerships

DBFOM & Performance Guaranteed Facilities
How infrastructure is delivered to the public

Various Delivery Methods

- Design-Bid-Build
- Design-Build
- Design-Build-Finance
- Design-Build-Finance-Operate-Maintain
- PGF
# Comparison of Procurement Models

<table>
<thead>
<tr>
<th>Risk Element</th>
<th>Traditional</th>
<th>Lease</th>
<th>63-20 Corp</th>
<th>P3</th>
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<tbody>
<tr>
<td>Procurement</td>
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<tr>
<td>Program</td>
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<td>Design &amp; Construction</td>
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<td>Finance</td>
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<td>Tax Exempt</td>
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<td>Land/Building Ownership</td>
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<td>At End of Term</td>
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<td>Operating Term</td>
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<tr>
<td>Rights Retention</td>
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<tr>
<td>Operating costs above Plan*</td>
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<tr>
<td>Cost of Operations</td>
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<td>Availability/Abatement</td>
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<tr>
<td>Life Cycle Replacement</td>
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<tr>
<td>Condition at end of Term</td>
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<tr>
<td>Operating Performance</td>
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*Plan set during procurement, prior to commitment to proceed

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<th>Sponsor</th>
<th>Shared</th>
<th>Private Partner</th>
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39
All about risk transfer

Level of Risk Transfer

- Development
- Design & Construction
- O&M / Lifecycle Costs
- Financing

Public Sector
Private Partner

40
Design-Bid-Build

- Public sector contracts separately with a designer and a contractor (most traditional delivery method in U.S. construction industry).
- Designers required to deliver 100% of complete design documents.
- Public sector solicits fixed price bids from general contractors to then perform construction work.

Level of Risk Transfer

- Designers and general contractors bear no contractual obligation to either party.
- Public sector bears all risk associated with the completeness of the design documents.
Design-Build

- Public sector hires a single entity, Design-Builder, to perform design and construction under a single contract.
- All (or portions) of design and construction may be performed by the entity or subcontracted to other companies.
- High levels of collaboration between the design and construction groups with single legal entity bearing project risk.
- Typically, general contractor is responsible contractually for Design-Build delivery method.

Level of Risk Transfer

- Development
- Design & Construction
- O&M / Lifecycle Costs
- Financing

Public Sector

Private Partner
Private sector is generally responsible for the design, construction and short-term financing.

The capital cost of the project is paid for by the public sector by lump sum payment at completion of construction.

Public sector is responsible for providing ongoing maintenance after completion of construction.
• Private sector is generally responsible for design, construction, maintenance, lifecycle replacement and financing (both short-term and long-term).

• The capital cost of the project is paid for by the public sector, in part, by lump sum payment at completion of construction and through blended capital and service payment installations over the fixed maintenance period.

• **Capital and service payments** usually over 25-30 years.

• Availability-based vs revenue-risk projects.
On-time, on-budget performance is virtually guaranteed – no surprises or embarrassments;

Physical asset investment is protected because facility condition and performance is guaranteed for 30+ years – “long term warranty”;

Client owns the asset at all times;

Provides strong “value for money” through partner innovation and risk transfer;

You can get the needed infrastructure done more quickly;

Alignment of interests between Client and Partners;
VALUE PROPOSITION – PGF

Performance Guaranteed Facilities, where:

• Financial capital at risk to guarantee on-time and on-budget delivery
• Optimization and certainty of “whole of life” costs
• Ownership of the asset is retained by Client
• Facility condition guaranteed for the full term of agreement, including end of term handback conditions
• Alignment of interests between Client and partner
• A fully integrated solution that drives design development, construction, equipment and operations innovations and efficiency
• Offers flexibility to facilitate inevitable change

A ‘Whole of Life’ solution means nothing for a Client, unless they have a long term partner to deliver what’s promised

Guaranteed handback condition is in effect a 30 year warranty
Note 1: From July 2010 Healthcare BIM Consortium, an organization consisting of Department of Defense Military Health System (DoD MHS), Department of Veterans Affairs (DVA), Kaiser Permanente (KP), and Sutter Health, representing $26B of Healthcare construction.
NEED TO FOCUS ON ALL COST DRIVERS

40 Year Cost of Operations

- Program: 91.2%
- O&M: 8.8%
- Refurbishment: 5.1%
- Planning: 2.5%
- Design: 0.8%
- Construction: 0.1%
- Transition: 0.0%

Note 1: From Massachusetts Hospital Association, July 2010 Update to Hospital Costs in Context Report
• Compares the risk adjusted estimate of what it would cost to design, build, finance and maintain the hospital over a 30-year period

• The alternative procurement component is based on our actual bid and includes all overhead, profit and fees

• It is a fixed price quote for 30 years and payment is based on performance of the asset

• Asset handback condition is guaranteed

◊ Note: at LBCC taxable private financing was equal to tax exempt cost of money
DBFOM Track record

- Long-term project savings
- On-time availability of asset
- On-budget for costs
- Real risk transfer


*Value for Money compared to Public Sector Comparator
Average NPV of 17.5%
Public Sector Risk Exposure

Traditional Procurement

- Exposure to cost & time variations during design & construction
- Exposure to cost variations during operations; Performance issues are client’s responsibility
- Exposure to deferred maintenance

DBFOM Procurement

- No payment during design and construction phase
- Operations phase cost is contractually determined during Project procurement; Performance must meet stated Key Performance Indicators
- Asset reverts in pre-determined condition after concession

- Risks are offloaded to and priced by the party better equipped to handle them, the Private Partner
Value proposition for a DBFOM

- All aspects of Facility costs should be considered
- Decisions in one cost category may impact the others
- Driving down construction costs can have an adverse impact on long term costs

*Value to Public Sector is a LOWER Net Present Value*

- Long term “Whole of Life” costs instead of first cost construction
- Good decisions during design process consider Value for Money and best investment approach
- Results in lower whole-of-life facility cost (the “box” is smaller)
- Provides outcomes that are guaranteed
- Financing returns are vehicle for Public Sector to enforce the guarantees
Facilities Management Services Agreement
Design-Build Agreement
Project Agreement

Public Sector

Lenders
Senior Debt

Development (SPV)

Plenary Group Equity
Equity

Subcontractors
Subcontractors (mechanical, electrical, etc.)

Design and Construction
Design-Build Agreement
Performance Guarantee

Designer
Contractor

Facilities Management / Lifecycle
Facilities Management Services Agreement
Performance Guarantee

Operator

Management Services Agreements
Financial Services Agreement

Plenary Group / Project Manager
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Questions???
Thank You

Owner’s Committee