TBPOC February 7, 2017
SUPPLEMENTAL PACKET
ITEM 2
Chairs Report
YBITS2 ECS Slope
(Original project scope area)
Grout Replacement Contract Status

- Grout Replacement Status (424 rods)
  - Detensioning: 206 of 420 detensioned
  - Water Jetting: 51 of 424 water jetted
  - QA Borescope: 28 of 424 Accepted
  - New rod installation: 1 of 4 rods installed
  - Retensioned: 0 of 420 retensioned
  - Grouted: 0 of 424 regrouted
504/288 Demo Status
7 Spans Removed Since November 10th
288 - Span 12 Removal
ITEM 4

Bay Bridge Steel Program
Administered by the
Oakland Museum of California
Presentation to the TBPOC
February 7, 2017
**Program for Creative Reuse in Civic and Public Art Projects**

The Bay Bridge Steel program, being administered by Oakland Museum of California, was created in response to significant public interest from Bay Area artists and creative communities in making steel from the bridge available for repurposing and reuse. The program’s intent is to preserve elements of the original 1936 East Span of the Bay Bridge, as well as its legacy as a major landmark and historic icon.

Bay Bridge Steel program partners hope this exciting opportunity is embraced by a broad range of artists, architects, landscape architects, planners, and other design professionals working in the public realm.

**Successful applicants will receive bridge steel free of charge.**
**In order to be eligible, projects must:**

1. be destined for publicly accessible sites within the State of California,
2. celebrate the original East Span of the Bay Bridge, its qualities, or its history in imaginative and creative ways,
3. use the specific bridge elements called out for salvage,
4. demonstrate an ability to secure city approvals, fabricate, install and fund the proposed project,
5. sign the required liability/release waiver, and
6. provide requested documentation.

**For more information and application materials:**
www.museumca.org/bay-bridge-steel

Administered by:

Oakland Museum of California
CONCEPT SKETCHES: LANDSCAPE OVERLOOK
PROPOSED PLACEMENT OF ART

Objective: Introduce public art at Pier 3 for benefit of community and public visitors. Please note that all requested Bay Bridge elements are not critical to the success of the overall project. We have listed the below elements in order of relevance (most relevant to least).

1. **Sound Sculpture**
2. **Public Pathway**, highlighted with blue dots “—”
3. **Marker System**
4. **Sculpture @ end of pier**: Ode to Bay Bridge
ITEM 6

Yerba Buena Island Transition Span 2 Contract-CCO 143-S0 – Deletion of Contract Scope Related to Southgate Road
YBI TS2 ECS Slope
(Original project scope area)
YBITS2 ECS Slope
(Original project scope area)
YBI TS2 ECS Slope
(Proposed CCO area under new bridges)
YBI TS2 ECS Slope
(Proposed CCO area under new bridges)
YBI TS2 ECS Slope
(Proposed CCO area under new bridges)
YBI TS2 ECS Slope
(Proposed CCO area under new bridges)
ITEM 10

Marine Foundation Demolition (Piers E6-18)
Early Completion
Support Request for Early Completion of Piers E4 –E18 Foundations

February 7, 2017
SFOBB Dismantling Phases

- Cantilever Removal
- Marine Foundation Removal
- 504/288 Removal
Marine Foundation Removal Contract

 Removed to date **Scheduled for removal – 2017/2018**

 Not Yet Under Contract for Removal

THE SAN FRANCISCO-OAKLAND BAY BRIDGE
EAST SPAN SEISMIC SAFETY PROJECT
504-288s As of Yesterday
504-288s As of Yesterday
SFOBB Dismantling Schedule

SFOBB - Demolition Schedule (DRAFT 20-Jan-2017)

- Cantilever Removal
  - 2013: Impacted by March 2014 Trend
  - 2014: Turn Over by June 2015
  - 2015: Complete Cantilever Removal
  - 2016: Start 504/288 All Contract
  - 2017: E3 Turn Over
  - 2018: M116.5 Months Savings
  - 2019: E3 Turn Over
  - 2020: M120, E3-E12 Turn Over

- 504/288 Contract Impacted

- Aug 2015 CPM Update

- Dec 2016 Trend

- CMGC Contract Impacted

- Bid Schedule

- Early Completion

- Trend Completion


- 16.5 Months Savings

- E3 Turn Over

- M116.5 Months Savings

- M120, E3-E12 Turn Over

- As of 2019

- Removed E4, E11

- Removed E12, E18

- Clarification on Mechanical Window

- Re-base Demolition by One Year

- 3 years Cumulative Trend Early Completion

EAST SPAN SEISMIC SAFETY PROJECT
Early Completion Concept

• Opportunity: Remove 13 piers in 2017 (E6-E18)

• Changes Needed in Methods to Accomplish Goal:
  – Annual Pier Removal Count: Implode up to 13 piers in a season (up from 6 or 7 planned)
  – Mechanical Dismantling; change start date from June 1 to March 1
  – Multiple Pier Events: Combine smaller piers into single, sequential blasting events (2-3 piers during the same blast event)
  – Post-blast Clean-up: extend window to December 31
Early Completion Concept conti.

• Things Not Changing:
  – All implosions conducted Sept 1 – Nov 30
  – Piers E6 and E9 imploded individually
  – Each individual pier will be encircled with a dedicated BAS
  – All charges detonated with computer-controlled spacing; no simultaneous detonations (even in multiple-pier events)
  – Does not require changes to the total number, total weight, or maximum charge weight of the explosives ("still keeping the maximum charge size small")
Hoe Ram
Cable Saw

• Interim Method: Cable Saw
  – Cut pedestals into large pieces to be off-loaded
  – Less efficient and more costly
  – Produces continuous sound below 150 dB; no adverse effects on fish
1. The Pedestals will be wire sawed into manageable pieces and then lifted onto a materials barge.

2. The pieces will be offloaded and broken down into smaller pieces.

3. Once completely broken down, the concrete rubble will be hauled off and recycled.
Multiple Pier Events

show 30 sec. video
BAS Frames
Multiple Pier Events

• Combine smaller piers into same-day blasting events
• Reduce total number of blast events; reduced risk, effects on environment, and effects on traffic
• Each pier would have dedicated BAS
• All charges detonated with spacing
• Piers imploded in sequence (not all at once)
  – Specific spacing between piers under review; at least 1 second
• Blasting events spaced greater than 12 hours apart
Post-Blast Clean-up

• Removal of more piers = more clean-up
• 16 extra days likely to have minimal additional effect on fish
  – Still subject to herring work waiver and associated work stoppages
Request of the TBPOC

1) Authority to proceed with a CCO not to exceed $1.5 million

2) Additional COS not to exceed $1 million to support necessary environmental requests/submittals and near immediate construction work
ITEM 12

Program Budget/Risks Update for FY 16-17 (Capital Outlay/Capital Outlay Support/Risk Management)
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<td>0120F, SAS-Superstructure</td>
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<td>0120T, YBTS2-Cant. dismant.</td>
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<td>01350, YBTS3 Landscaping</td>
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<td>01352, Superstructure Dism.</td>
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<td>01354, Pier 3 Removal Demo.</td>
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<td>01357, Pier E4-E18.</td>
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<td>01358, Pier E2, E19-E22.</td>
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**CAPITAL**

- **Current Approved Budget:** $5,174M
- **Forecast at Completion:** $5,237M
- **Expenditure thru December 2016:** $4,925.6M

**SUPPORT**

- **Current Approved Budget:** $1,328.5M
- **Forecast at Completion:** $1,391.3M
- **Expenditure thru December 2016:** $1,308.4M

Notes:
1. CO and COS forecasts are based on 4th QTR 2016 Financial and Risk Management Reports.
2. Forecasts include 4th QTR 2016 risk of $63.0M CO, and $63.0M COS.
3. COS forecasts for future years is being evaluated to reduce up to 25%.

Date: 02/01/2017
TBPOC Briefing
Risk Management Results
Fourth Quarter 2016
Toll Program Risk Management

- **Quarterly Reporting Since Q1 2006**
  - 43rd Report to TBPOC on status of risks in program

- **Currently Quantifying Risks on 6 Projects and the Program**
  - 173 Active Risks Being Quantified Next Quarter
  - 112 Active Capital Outlay Risks
  - 61 Active Cost of Support (COS) Risks
  - Over 560 risks retired during life of these East Span projects
Summary of Q4 2016 Cost Risk Results Adequacy of Reserves

Potential Draw on Program Contingency

Q4 2016 Program Contingency $42 Million

Q4 2016 50% Probable Draw $139 Million

Q3 2016 Program Contingency $68 M

Q3 2016 50% Probable Draw $177 Million
$12.0 Million Improvement in “Bottom-line” this Quarter

- $2 million decrease to Total COS Forecast in Q4 2016
  
  Forecast completion date of 504’/288’ Contract brought forward.

- $10 million decrease in Total Capital Outlay Forecast in Q4 2016
  
  - $14.4 million reduction in 504’/288’ risk, due to progress on 288’ removal
  - $5.0 million reduction in allowance for transfer of Southgate Rd work
  - $8.1 million allowance for Vincent Thomas funding shortfall

- $41.96 Million Remaining in Program Contingency Q4 2016
  
  - $17.0 million reduction for COS Budget Increase (BATA October 2016)
  - $8.7 million reduction for YBITS2 CO Budget Increase (BATA October 2016)
# Q4 RMC Results

<table>
<thead>
<tr>
<th>Project Description</th>
<th>Q4 2016</th>
<th>Q3 2016</th>
<th>Change</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marine Structure Dismantling E4-E18</td>
<td>38,944,000</td>
<td>39,554,000</td>
<td>(610,000)</td>
<td>(2)</td>
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<tr>
<td>Marine Structure Dismantling E2,E19-22</td>
<td>19,912,000</td>
<td>19,972,000</td>
<td>(60,000)</td>
<td>(0)</td>
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<tr>
<td>Self-Anchor Suspension</td>
<td>35,117,000</td>
<td>14,833,000</td>
<td>20,284,000</td>
<td>137</td>
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<tr>
<td>SAS Tower Rod Grouting</td>
<td>1,781,000</td>
<td>1,800,000</td>
<td>(19,000)</td>
<td>(1)</td>
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<tr>
<td>504' &amp; 288' Steel Structures Dismantling</td>
<td>5,929,000</td>
<td>20,329,000</td>
<td>(14,400,000)</td>
<td>(71)</td>
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<tr>
<td>YBI#2 Post Traffic Switch</td>
<td>12,800,000</td>
<td>12,817,000</td>
<td>(17,000)</td>
<td>(0)</td>
</tr>
<tr>
<td><strong>Total East Span</strong></td>
<td><strong>114,483,000</strong></td>
<td><strong>110,505,000</strong></td>
<td><strong>3,978,000</strong></td>
<td><strong>4</strong></td>
</tr>
<tr>
<td>Program-level risks (not in a contract)</td>
<td>16,434,000</td>
<td>11,337,000</td>
<td>5,097,000</td>
<td>45</td>
</tr>
<tr>
<td><strong>Total Capital Outlay Risk</strong></td>
<td><strong>130,917,000</strong></td>
<td><strong>121,842,000</strong></td>
<td><strong>9,075,000</strong></td>
<td><strong>7</strong></td>
</tr>
<tr>
<td>COS Risks</td>
<td>63,900,000</td>
<td>82,800,000</td>
<td>(18,900,000)</td>
<td>(23)</td>
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<tr>
<td><strong>Total Risk</strong></td>
<td><strong>194,817,000</strong></td>
<td><strong>204,642,000</strong></td>
<td><strong>(9,825,000)</strong></td>
<td><strong>(5)</strong></td>
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<tr>
<td>Draw on Program Contingency</td>
<td>139,117,000</td>
<td>176,742,000</td>
<td>(37,625,000)</td>
<td>(21)</td>
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<tr>
<td>Contract Contingency</td>
<td>55,700,000</td>
<td>27,900,000</td>
<td>27,800,000</td>
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<tr>
<td>Program Contingency Balance</td>
<td>41,960,000</td>
<td>67,660,000</td>
<td>(25,700,000)</td>
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<tr>
<td>Total Contingency</td>
<td>97,660,000</td>
<td>95,560,000</td>
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## 50% Probable Risk Management Cost

<table>
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<tr>
<th>Project Description</th>
<th>Q4 2016</th>
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<th>Change</th>
<th>% Change</th>
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<td>Total Contingency</td>
<td>97,660,000</td>
<td>95,560,000</td>
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<td><strong>Total Capital Outlay Risk</strong></td>
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<td><strong>121,842,000</strong></td>
<td><strong>9,075,000</strong></td>
<td><strong>7</strong></td>
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<tr>
<td><strong>Total Cost</strong></td>
<td><strong>225,734,000</strong></td>
<td><strong>222,347,000</strong></td>
<td><strong>3,387,000</strong></td>
<td><strong>1.5</strong></td>
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Trend of Potential Draw on Program Contingency

- Program Contingency Balance
- 99% Confidence Limit of Potential Draw
- 1% Confidence Limit of Potential Draw

$ Millions

Q1 '07 Q2 '07 Q3 '07 Q4 '07 Q1 '08 Q2 '08 Q3 '08 Q4 '08 Q1 '09 Q2 '09 Q3 '09 Q4 '09 Q1 '10 Q2 '10 Q3 '10 Q4 '10 Q1 '11 Q2 '11 Q3 '11 Q4 '11 Q1 '12 Q2 '12 Q3 '12 Q4 '12 Q1 '13 Q2 '13 Q3 '13 Q4 '13 Q1 '14 Q2 '14 Q3 '14 Q4 '14 Q1 '15 Q2 '15 Q3 '15 Q4 '15 Q1 '16 Q2 '16 Q3 '16 Q4 '16
Recent Changes in Draw Trend

Draw Trend Improving For Last Five Quarters
• Probable Draw Decreased by $12 million this Quarter to $97 million
• Probable Draw Peaked @ $143.2 million in Q3 2015
  Decreased by $46.2 million (32%) since peak.

Improvement Attributable To Minimizing Delays
• E3 Contract: No Delays To Contract
• 504’/288’ Contract: No CCO Delays & 19 days Weather Days Mitigated
• E4-E18 Contract: No CCO or Weather Delays to-date

Improving Trend Likely To Continue in 2017
• If Environmental Team get OK to advance all Marine Foundation work in 2017 implosion season
• If Pier Retention gets approved by Environmental Agencies
• If Project Team continues to successfully remove piers by implosion
## Top 10 Risks

### Top 10 Capital Outlay Risks

<table>
<thead>
<tr>
<th>Project</th>
<th>ID</th>
<th>Title</th>
<th>Probability</th>
<th>Optimistic</th>
<th>Pessimistic</th>
<th>Probable</th>
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<tbody>
<tr>
<td>SAS</td>
<td>1000</td>
<td>Project Closeout</td>
<td>100%</td>
<td>0</td>
<td>55,000,000</td>
<td>29,333,000</td>
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<tr>
<td>Marine 2**</td>
<td>914</td>
<td>Cost Uncertainty around the Cost Estimate</td>
<td>100%</td>
<td>0</td>
<td>19,500,000</td>
<td>10,833,000</td>
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<td>Marine 1*</td>
<td>904</td>
<td>Schedule delays in the Construction Phase</td>
<td>100%</td>
<td>4,350,000</td>
<td>15,000,000</td>
<td>9,640,000</td>
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<tr>
<td>Program</td>
<td>87</td>
<td>Vincent Thomas Bridge Funding shortfall</td>
<td>100%</td>
<td>8,100,000</td>
<td>8,100,000</td>
<td>8,100,000</td>
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<tr>
<td>Marine 1*</td>
<td>204</td>
<td>New Environmental Constraints (biology, water quality or acoustic limitations) increases scope of the work or effects Contractor's Means and Methods.</td>
<td>90%</td>
<td>2,800,000</td>
<td>11,300,000</td>
<td>5,940,000</td>
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<tr>
<td>SAS</td>
<td>1001</td>
<td>BATA's capital costs of Light Pole contract</td>
<td>100%</td>
<td>5,784,000</td>
<td>5,784,000</td>
<td>5,784,000</td>
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<tr>
<td>Program</td>
<td>65</td>
<td>Cleanup / close out of Corridor on YBI</td>
<td>95%</td>
<td>2,500,000</td>
<td>8,000,000</td>
<td>5,225,000</td>
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<tr>
<td>Program</td>
<td>86</td>
<td>YBITS2 Southgate Rd Realignment Funding Transfer</td>
<td>100%</td>
<td>4,000,000</td>
<td>6,000,000</td>
<td>5,000,000</td>
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<tr>
<td>Marine 1*</td>
<td>910</td>
<td>In construction permit amendment.</td>
<td>90%</td>
<td>0</td>
<td>8,000,000</td>
<td>3,600,000</td>
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<tr>
<td>YBITS #2</td>
<td>22</td>
<td>Resolution of unstable slopes on YBI near USCG base</td>
<td>95%</td>
<td>2,500,000</td>
<td>4,000,000</td>
<td>3,008,000</td>
</tr>
</tbody>
</table>

*Marine Foundations Dismantling E4-E18
**Marine Foundations Dismantling E2, E19-E22

Total ranges from $70-125 M
Data from Q4 2016 Quarterly Report:

- Forecast to Completion: $9,049.2 million
- Cost To Date: $8,611.1 million
- Work Remaining (inc. Risk): $438.1 million
- Total Risks: $211.7 million (45% of Work Remaining)
- Costs carried in Risk Forecast: $95.5 million
- Future Risk: $116.2 million (26% of Work Remaining)
Challenge Going Forward

• Budget Adjustments From Program Contingency:
  1. At least one year of COS 17/18: action needed Q2 2017
  2. Capital cost of E2, E19-E22 decision to retain or demolish
• Execution of the Marine Foundation Removal contract.
• Manage COS expenditures to proposed budget.
• Project close-out – SAS Arbitration

• Biggest opportunity for cost/risk mitigation:
  Opportunity to leverage 504’/288’ early completion to advance work
  Open work window for mechanical demo beyond current window
  Get permitted to allow multiple implosions at a time
  Allow implosions during work week (i.e. 10:00am to 2:30pm)
  Obtain concurrence to leave foundations – E2 & E19-E22 in-place
  $57.8 million forecast ($45m Capital & $12.8m COS)
Questions?

Project Risk Management