STAFF REPORT FOR CALENDAR ITEM NO.: 8
FOR THE MEETING OF: July 9, 2015

TRANSBAY JOINT POWERS AUTHORITY

BRIEF DESCRIPTION:
Presentation of draft Phase 1 Revised Baseline Budget.

SUMMARY:
This memo is a briefing on the status of the overall Phase 1 budget. It includes responses to the concerns raised by the Board at the June 2015 meeting regarding the recently received high bids. As previously reported to the Board, the planned budget presentation schedule is as follows:

July
- Presentation of draft Phase 1 Revised Baseline Budget based on recent bids received, price proposals negotiated to date, and risk assessment information
- Adoption of a two-month interim FY15-16 capital budget

September
- Presentation and adoption of final Phase 1 Revised Baseline Budget
- Presentation and adoption of final FY15-16 capital budget

EXPLANATION:
As an agency formed to build a capital project, the TJPA manages its resources primarily in relation to the multi-year Transbay Transit Center baseline budgets for Phase 1 and Phase 2. The fiscal year capital budget is the best estimate of the activities from the baseline budget that will occur during the fiscal year timeframe.

In November 2007, the TJPA Board adopted a Baseline Budget for Phase 1 of the Program in the amount of $1,189,000,000. The budget included the following Program components: (a) right-of-way acquisition; (b) construction of a temporary terminal; (c) demolition of the existing Transbay Terminal and bus ramp; (d) construction of the above-grade bus facilities portion of the new Transit Center and the foundations and other improvements to prepare for future construction of the below-grade train station ("top-down" approach); (e) construction of a bus ramp and bus storage; and (f) design and engineering of the above-listed facilities including the full below-grade rail level component of the Transit Center building. The budget excluded construction of the below-grade train box.

In May 2010, the Board adopted a Revised Baseline Budget, Financial Plan, and construction schedule for Phase 1 of the Program in the amount of $1,589,000,000, which incorporated the construction of the train box in anticipation of the August 2010 Federal Railroad Administration (FRA) $400,000,000 American Recovery and Reinvestment Act (ARRA) grant award for the train box.

In July 2013, the Board adopted a Revised Baseline Budget for Phase 1 of the Program in the amount of $1,899,400,000. This revised budget took into consideration the results of the bids for

the structural steel trade package and the rising costs of other construction materials and labor as the economy began its recovery from the recession, the cost impacts of incorporation of a risk and vulnerability assessment (RVA), increases in soft costs largely due to the schedule extension associated with transfer of the construction of the train box to Phase 1, and replenishment of contingencies and reserve. The construction cost estimate included in the revised budget was based on the 95% construction documents. The revised budget also assumed a 3.5% escalation rate for construction activities moving forward and included several value engineering measures and deductive alternates totaling $35.8 million. The budget was also based on cost estimates for implementing the RVA design guidance criteria.

In February 2014, the TJPA received an updated construction cost estimate from the Construction Manager/General Contractor (CM/GC) based on the 100% construction documents completed in May 2013. This construction cost estimate was reconciled with the recently updated Engineer's Estimate provided by the project Architect, Pelli Clarke Pelli Architects (PCPA). The reconciled construction cost estimate indicated a total construction cost above the amount in the construction budget. Some of the drivers for the increase in the estimate were scope refinements between the 95% and 100% construction documents, and the active construction market conditions in the San Francisco Bay Area, in general, and the Transbay District, in particular, which have limited the bidder pool, resulting in increased bid margins beyond what was anticipated in July 2013. During this time, TJPA received bids for the glazing systems, superstructure concrete, and the bus ramp trade packages that exceeded the budget allowance for each of these trade packages.

In response to higher than expected bid prices, TJPA staff undertook an extensive teamwide effort to identify and develop additional mitigation and value engineering measures to further reduce construction costs for the upcoming trade packages, working closely with the design team, in accordance with the professional services agreement with PCPA, to deliver a design within the Fixed Budget Limit in the PCPA agreement, plus or minus five percent, and with the support of the CM/GC and the Construction Management Oversight (CMO) and Program Management/Program Controls (PMPC) consultants. These measures included several scope reductions and additional deductive alternates with a total estimated value of approximately $29.8 million.

In total, the construction documents for the Transit Center and Bus Ramp include an estimated $120 million of either deductive alternates or value engineering ideas that were included in the final bidding documents.

At the May 2014 Board meeting, staff presented a mitigation plan to alleviate the impact of the projected construction costs on the Phase 1 budget. The plan (1) identified the value engineering measures referenced above with an estimated total amount of $29.8 million to reduce the cost of upcoming trade packages, (2) proposed the use of Program Reserve and construction contingency to fund bids received that exceeded their respective budgets, and (3) proposed raising additional funds from sponsorship opportunities.

In addition, TJPA retained the services of Leland Saylor Associates to perform a bidder survey, review the bidding manual, and provide recommendations on how to attract more bidders and reduce bid prices on future trade packages. As previously reported, the TJPA and the CM/GC took several measures in response to the study to attract additional bidders.

TJPA and the design team also revised the drawings and specifications of the design-build packages (including the exterior awning, glazing, and ceiling systems) to make them more flexible and less complex—and thus more attractive to bidders—without compromising the design standards required to deliver a high quality Transit Center building. A collaborative design-assist procurement methodology was also implemented for several of the specialty trade packages, including the exterior awning, glass curtain walls and skylights, and metal ceilings systems to maximize competition and yield the best price by requiring the trade subcontractor to design to budget.

Despite these significant efforts to mitigate construction cost increases, several trade packages came in above budget, which necessitated using a larger than anticipated amount of the Program Reserve and construction contingency to award several trade packages. The Program Reserve, set at $87.5 million in the July 2013 budget, will be mostly utilized to award the schedule-critical trade packages identified by the CM/GC in July 2015, and additional funding is needed to award the remaining trade packages by September 2015. Both the Program Reserve and construction contingency should be replenished in order to deliver the project. Below is a summary of the expected additional budget needs based on the results of the risk assessment update, bids received to date, and cost proposals for design-build packages negotiated to date.

Construction Costs

In May, TJPA received bids for TG07.6 Topping Slabs/Bus Crash Rail/Expansion Joints and TG16.0 Interiors/Finishes that combined are approximately $32 million above the CM/GC's estimate. Also, in late June, TJPA received the final price proposal for TG08.11R Glass Curtain Walls and Skylights Design-Build Services in an amount of $59,710,396, which is approximately $19.2 million above the CM/GC's estimate. In light of the significant cost differential between the submitted low bids/negotiated costs and the CM/GC's estimates, the TJPA instructed the CM/GC to provide a comprehensive analysis and explanation of the cost differential. The CM/GC's written analysis and explanation for each of these three packages is attached. Below is a summary of the CM/GC's analysis and explanation and an assessment of that analysis and explanation by the TJPA consultant team (including Turner Construction, the CMO consultant).

<u>TG07.6 Topping Slabs/Bus Crash Rail/Expansion Joints (See attached letter from CM/GC)</u>

CM/GC's bid results analysis: Three bids were received. The low bid was $27.68 million, and the estimate was $13.63 million. The difference between the CM/GC's estimate and the low bid was $14.05 million. This difference is due to the following factors:

- Scope that was added to or shifted to this trade package from other trade packages and not accounted for in the estimate: $5 million
- The unit cost used to estimate the cost of the expansion joints was not appropriate for the type of joints used for the Transit Center project: $4 million
- Other factors: $5 million.

- A large project that consumes much of the bidder's capacity and limiting their opportunity to pursue other projects.
- Inefficiencies and low productivity rates assumed by bidder.
- Perceived increased risk of a large public works project.

The CM/GC's analysis concluded that the three bids received are competitive and reflect the current market conditions as well as the current difficult logistics of the project. The bids received are fair and reasonable and were arrived at in an independent manner, and the low bidder understands the scope of the project. It is recommended to award to the low bidder, as rebidding this scope is unlikely to achieve a better result and failure to award this scope in September would cause project delays, driving up the cost even further.

TJPA consultant team (including Turner-CMO) assessment: In general, the team is in agreement with the overall analysis by the CM/GC. It is clear that the unit price for the expansion joints used in the original estimate established optimistic expectations, but the three fairly similar bids received have established the price of the work by the market.

<u>TG16.0 Interiors/Finishes (See attached letter from CM/GC)</u>
CM/GC's bid results analysis: Three bids were received. The low bid was $39.02 million. The CM/GC estimate was $20.91 million, leaving a difference of $18.1 million between the CM/GC's estimate and the low bid. This difference is due to the following factors:

- Quantities added to this trade package and not accounted for in the estimate: $8.5 million
- Scope shifted to this trade package from other trade packages and not accounted for in the estimate: $2.5 million
- Other factors: $7.2 million
  - Schedule requiring work in multiple areas simultaneously requiring added supervision.
  - Limited availability of qualified workers and large crew sizes will reduce productivity.
  - Many different wall types, and little repetition.

The CM/GC's analysis concluded that the three bids received are competitive and reflect the current market conditions as well as the current difficult logistics of the project. The bids received are fair and reasonable and were arrived at in an independent manner, and the low bidder understands the scope of the project. It is recommended to award to the low bidder, as rebidding this scope is unlikely to achieve a better result and failure to award this scope in July would cause project delays, driving up the cost even further

TJPA consultant team (including Turner-CMO) assessment: In general, the team is in agreement with the overall analysis by the CM/GC. It is clear that the unit prices for the drywall and CMU walls used in the original estimate established optimistic expectations, but the three fairly similar bids received have established the price of the work by the market.

TG08.11R Glass Curtain Walls and Skylights Design-Build Services (See attached letter from CM/GC)

CM/GC's bid results analysis: The design/build proposed cost for the glazing systems is $59.71 million, and the CM/GC estimate is $40.5 million, leaving a difference of $19.21 million. The difference can be mainly attributed to the following factors:

- Incorporating a permanent glazing system in lieu of the temporary partitions for retail store fronts assumed at the time of the estimate: $2.7 million
- Additional cost to comply with design guidance criteria loads over and above a more typical blast design: $3.8 million
- Additional cost for glazing systems to satisfy the structural requirements of the building resulting from the transfer of loads: $2.5 million
- Limited availability of suppliers able to meet the compressed schedule: $1.5 million
- Other Factors: $8.7 million
    - Projected overall demand on workforce
    - Inefficiencies resulting from time compression
    - A greater than 20% increase in cost of glass

CM/GC's analysis concludes that the negotiated construction cost is fair and reasonable and that terminating the Trade Work Subcontract and competitively bidding the fabrication and installation of the Glass Curtain Walls and Skylights systems based on the final design prepared by Crown Corr, Inc., as allowed under the design services contract if an agreement can't be reach, will not result in a better price and will result in schedule impacts and additional costs to the project.

TJPA consultant team (including Turner-CMO) assessment: In general, there is an agreement with the CM/GC determination. The CM/GC has noted several items that have influenced the work and increased the costs. Independent cost data obtained by the TJPA team indicates that there are wide variances in the cost of blast resistant curtain walls and, since the economic recovery, there has been a significant increase in the cost of standard curtain walls and issues with availability. However, it appears that the CM/GC's estimate did not fully account for the cost of the design guidance criteria associated with the W-2 system.

Recommendations to Contain Construction Costs

To maintain the schedule, the CM/GC identified four schedule-critical trade packages for award in July: TG08.11R Glass Curtain Walls and Skylights Design-Build Services, TG16.0 Interiors/Finishes, TG08.2R Exterior Awning, and TG12.1 Civil/Site Work at Grade/Ground Level Landscaping. The CM/GC recommends awarding all of the remaining trade packages, with the exception of the Converged IP Network, by September. A recommendation to award the Converged IP Network is expected in fall 2016 after bidding next year. A Bus Storage construction contract may also be awarded after completion of the design; design is anticipated to be complete in late 2015.

- TJPA staff is continually updating the risk register and developing risk mitigation plans for high risk items to ensure that cost increases during construction are properly and effectively mitigated. In addition, TJPA has implemented a strong partnering program at

various levels to ensure that conflicts are resolved expeditiously and with the least amount of impact to the budget and schedule.

- TJPA is also ready to utilize the Dispute Resolution Advisor or Dispute Resolution Board if necessary to resolve disagreements fairly and expeditiously so that the team's focus stays on construction activities and timely completion of the project.
- TJPA will be also working closely with the design team to minimize design changes, expedite any redesign necessary to resolve field conflicts, and eliminate any scope changes or additions.
- Recently, the TJPA reached out to the CM/GC to explore the feasibility and effectiveness of negotiating a Guarantee Maximum Price (GMP) for the remainder of the project as a way to contain the financial exposure moving forward. The CM/GC is currently studying the request and will provide recommendations in the coming weeks.

Budget Adjustment:

Construction Cost

- Award of remaining Transit Center trade packages: The budget for direct costs of the remaining trade packages is $163.84 million, and the current estimate, based on the bids and price proposals received to date, is $303.52 million. Additional funding in the amount of $139.68 million is needed to award the remaining work (including the Rooftop Park) based on the costs obtained to date.

- CM/GC Cost (fee, CM/GC contingency, bonding): The CM/GC fee, CM/GC contingency, and budgeted bonding costs are percentages based on direct construction costs of $910 million. The direct construction costs are expected to be $1.181 billion; thus, these CM/GC costs increase in proportional amounts as well. This results in a projected additional funding need of $22.42 million.

- Bus Storage: The current bus storage construction budget, including escalation and design contingency, is $15.95 million. The Bus Storage construction documents are 65% complete, and the recently refreshed cost estimate based on the 65% drawings is $19.45 million, resulting in a delta of $3.5 million.

  To summarize:

Award remaining trade packages (direct costs)	$139.68M
Additional CM/GC costs (% of direct costs)	$22.42M
Bus Storage construction	$3.50M
Total	$165.60M

Programwide Costs

TJPA is currently negotiating an extension of the CMO contract, which was awarded in 2010 for a six-year term through June 2016. Based on the current schedule of Transit Center substantial completion by the end of December 2017, the CMO contract should be extended until July 2018.

Based on expenditures to-date and remaining effort required until July 2018, the cost of the CMO contract is expected to increase by $26.7 million, from a current budget amount of $46 million to $72.7 million. As TJPA's construction representative, the CMO's primary responsibility is to ensure that the CM/GC's work is of the highest quality possible and meets all necessary code requirements. This oversight includes coordinating and providing all special inspections on site and off site.

The increase to the overall CMO contract is primarily due to the need for the CMO to conduct significant additional steel fabrication and welding inspections offsite, which are required for non-destructive testing under the American Welder Society code. These costs have been incurred and will continue to be incurred through completion of the steel installation in the spring of 2016. The budget for CMO services for all special inspections, including steel fabrication and welding inspection, assumed steel fabrication at two facilities working a single shift, at a cost of $8.8 million. This assumption was developed at the start of the CMO contract services in 2010, prior to award of the structural steel trade package. The structural steel trade subcontractor's fabrication strategy in fact requires fabrication at six separate facilities working up to three shifts per day and in some cases seven days per week. Currently, steel fabrication is taking place at Oregon Iron Works (Portland, OR; Vancouver, WA), XKT (Vallejo, CA), Thompson Metal Fabrication (Vancouver, WA) and Herrick Steel (San Bernardino, CA; Stockton, CA). The current estimate at completion of all special inspection is $29 million, an amount of approximately $20 million over the originally budgeted $8.8 million.

All other Programwide and soft costs are trending at or below budget. The design cost is $10.4 million below budget, and the TJPA administrative costs are $2.35 million below budget for a combined savings of $12.74 million. Savings in the amount of $4.2 million have also been identified in other areas of construction management. These savings reduce the total soft cost need to fund the CMO budget from $26.7 million to $9.41 million.

Contingencies and Program Reserve

The risk assessment update, which used both a bottom-up Monte Carlo analysis and a top-down FTA methodology, was completed in June. Based on the 30% FTA risk model, the recommended level to replenish the construction contingency and Program Reserve is $71.9 million.

Summary	
Construction Costs	$165.60M
Programwide Costs	$9.41M
Subtotal	$175.01M
Replenish Contingency/Reserve	$71.9M
Total	$246.91M

Funding Plan

The Second Amendment to the TIFIA Loan recognizes the formation of the Mello-Roos Community Facilities District (CFD) and its corresponding authorization to issue bonds as evidence of full funding for Phase 1, satisfying the full funding requirement that is a condition to disbursement of the TIFIA Loan. TJPA worked with Mayor's Office and City staff on this

funding plan, and the CFD was signed into law by Mayor Lee on January 20, 2015. TJPA continues to work with the Controller's Office and other City staff on the timing of availability of the CFD proceeds, the first large tranche of which is expected in the 2017 timeframe. It is possible that construction of the Bus Storage facility could be pushed out in time to match the availability of later CFD proceeds.

The sale of Parcel F may also provide significant funding to TJPA in the short term. Parcel F, a Caltrans Transfer Parcel, is an approximately 30,000 square foot development site fronting on Howard and Natoma Streets between First and Second Streets at the southwest end of the Transit Center, adjacent to the bus ramp. A portion of the property lies over the throat structure of the DTX. Under the Transit Center District Plan, the portion of Parcel F not located over the throat structure has potential for development of a 750-foot office, residential, or hotel high rise. The building on Parcel F will connect to the Rooftop Park by a pedestrian bridge, similar to the Salesforce and 181 Fremont Towers. Parcel F will be available for development following completion of construction of the bus ramp in 2016. TJPA intends to sell Parcel F at auction in September 2015. A sale of Parcel F would reduce the amount of CFD proceeds needed for Phase 1.

TJPA has also released an RFP for sponsorship of various components of the Transit Center. The original proposal due date of April 23 has been extended to October 2015 to maximize participation and provide additional time for interested parties to respond. Finally, TJPA will continue to apply for grant opportunities that arise, including but not limited to FEMA's Transit Security Grant Program.

(in millions, YOE$)	**Committed Funds**	**Potential Funds**
Land Sales	$510	$TBD
FRA Grants	$402.6	
TIFIA/Bridge Loan	$171	
FTA Grants	$62.4	
FEMA Grants	$0.1	$TBD
Regional Measures 1 & 2	$197.4	
AB 1171	$150	
San Francisco Prop K	$139	
AC Transit Contribution	$39	
RTIP	$10.2	
Miscellaneous Local	$8.7	
One Bay Area Grant	$6	
San Mateo Sales Tax	$4.5	
Transit Center District Plan (Mello-Roos)	$198.5	$TBD
Sponsorship	-	$TBD
Total Funds	**$1,899.4**	**$TBD**

RECOMMENDATION: Information only.

Attachments: CM/GC letters re: TG07.6, TG16.0 and TG08.11R

July 6, 2015

Mark Zabaneh
Transbay Joint Powers Authority
201 Mission Street, Suite 2100
San Francisco, CA 94105
RE: **Transbay Transit Center TG07.6 Topping Slabs and Expansion Joints**

Dear Mark,

This letter addresses the bids received for TG07.6 Topping Slabs and Expansion Joints Package in response to your letter dated June 26, 2015. The TG16.0 Interiors/Finishes has already been addressed in a separate letter.

Webcor Obayashi Joint Venture (WOJV) received three bids for TG07.6 Topping Slabs and Expansion Joints on May 7, 2015. The low bid from Concrete North Inc. in the amount of $27.68 Million, significantly exceeded WOJV's estimate of $13.63 Million, which was based on the 100% Construction Documents dated May 31, 2013. WOJV has performed a detailed post-bid analysis to determine the reasons for the variance. The disparity between the bids submitted and WOJV's estimate are further described below.

WOJV's estimate for the TG07.6 Topping Slabs and Expansion Joints Package was based upon the 100% Construction Documents dated May 31, 2013. The estimate was finalized in February, 2014 and was reconciled with a separate estimate prepared by AECOM for Pelli Clark Pelli Architects (PCPA). Final bid documents for this package included ASI 132 dated April 27, 2015. WOJV has identified differences between the two sets of documents as well as shifting of scope from other bid packages as noted on the attached summary. These represent an increase of approximately $5 Million between the estimate and bids received. It should be noted that the CM/GC Agreement requires an estimate upon receipt of 100% construction documents and does not provide for any further updates of the estimate nor was WOJV directed by TJPA to perform an updated estimate. To perform a more detailed analysis of the bids in comparison to a current estimate, a new estimate would need to be performed based on the ASI 132 bid documents. WOJV is available to perform the estimate within the next few weeks if desired by the TJPA.

In reviewing the estimate for the Expansion Joints, WOJV has determined that the unit prices used in the estimate are not appropriate for the type of expansion joints included in the project. The estimate includes $1,011 per lf compared to $4,405 per lf in the low bid. We believe the bids more accurately reflect the true cost of the expansion joints resulting in an increase of approximately $4 Million over the estimate.

WOJV met with the low bidder, Concrete North, to verify that they understood the intended scope of the bid package and determine the key factors accounting for the higher than expected bids. The following key issues were cited by Concrete North:

- Project logistics, limited access, work spread out over a large area
- Many small concrete pours resulting in lower productivity
- Limited availability of qualified workers and large crew sizes will reduce productivity
- Large project consuming much of the bidder's capacity and limiting their opportunity to pursue other more attractive projects
- Perceived increased risk of a large public works project in comparison to other projects

Based on our conversations with Concrete North, it appears that higher costs are largely the result of inefficiencies and productivity rates assumed by the bidders for the project.

Through the above analysis WOJV has been able to account for $9.1 Million in differences between the 100% CD Estimate and the TG07.6 bids. This does not fully account for the differences between the estimate and the bids received. We do not have access to the bidders' estimates to determine the exact cause of the variance between bids received and the 100% CD Estimate. Due to the timing and unique nature of the Transbay project it is not applicable to compare it to other projects in San Francisco.

There were three competitive bids received for TG07.6. These bids reflect the current market conditions as well as the current difficult logistics of the project. We have determined that the low bidder understands the scope of the project. WOJV believes the bids received are fair and reasonable and were arrived at in an independent manner. We do not believe that rebidding this scope is likely to achieve a better result and failure to award this scope in September would cause project delays driving up the cost even further. WOJV recommends award of TG07.6 to concrete North, Inc.

Please contact me should you have any questions.

Sincerely,
WEBCOR/OBAYASHI Joint Venture

Steve Humphreys
Vice President

cc: M. Ayerdi-Kaplan, J Pedersen, D. Turchon, S. Gigliotti, B. Dykes

COM3346

July 2, 2015

Mark Zabaneh
Transbay Joint Powers Authority
201 Mission Street, Suite 2100
San Francisco, CA 94105
RE: **Transbay Transit Center TG16.0 Interiors and Finishes**
SUBJ:

Dear Mark,

This letter addresses the bids received for TG16.0 Interiors/Finishes Trade Package in response to your letter dated June 26, 2015. The TG07.6 Topping Slabs bids will be addressed in a separate letter.

Webcor Obayashi Joint Venture (WOJV) received three bids for TG16.0 Interiors/Finishes on May 21, 2015. The low bid from Skanska USA Building Inc. in the amount of $39,026,000, significantly exceeded WOJV's estimate of $20,907,335, which was based on the 100% Construction Documents dated May 31,2013. WOJV has performed a detailed post-bid analysis to determine the reasons for the variance. The disparity between the bids submitted and WOJV's estimate are further described below.

As shown in the attached bid summary, the most significant variances between the bids and estimate are due to masonry walls and interior partitions. WOJV has focused our attention on these two trades in our efforts to understand the reason for the difference between the CM/GC estimate and the bids received. For both masonry walls and interior partitions, there were three subcontractors that submitted bids to the three GC's that bid TG16.0. WOJV spoke to several of these bidders to better understand the key factors behind the bid amounts. The key issues cited by the bidders for both trades are:

- Project logistics, limited access, work spread out over a large area
- Height of walls resulting in lower productivity
- Many different wall types, little repetition
- Schedule requiring work in multiple areas simultaneously requiring added supervision
- Limited availability of qualified workers and large crew sizes will reduce productivity
- Large project consuming much of the bidder's capacity and limiting their opportunity to pursue other more attractive projects
- Perceived increased risk of a large public works project in comparison to other projects

On average the unit price in WOJV's estimate is $39.40/SF for masonry walls and $25.37/SF for interior partitions. These unit prices are consistent with our experience on other downtown San Francisco projects in

early 2014. In the current market, the unit prices should be escalated to $44.00/SF for masonry walls (adjusted for 12" thickness and added reinforcing) and $36.00 for interior partitions (adjusted for wall details and RVA requirements). The low bid received for TG16.0 averages $55.21/SF for masonry walls and $49.71/SF for interior partitions. There are many different wall types for both masonry and interior partitions and these unit rates reflect an overall average. There are over 55 different wall types for interior partitions which significantly impacts productivity. Based on our conversations with the bidders, it appears that higher costs are largely the result of inefficiencies and productivity rates assumed by the bidders for the project.

WOJV's estimate for the TG16.0 Interiors/Finishes Bid Package was based upon the 100% Construction Documents dated May 31, 2013. The estimate was finalized in February, 2014 and was reconciled with a separate estimate prepared by AECOM for Pelli Clark Pelli Architects (PCPA). Final bid documents for this package included ASI 132 dated April 27, 2015. The overall design, detailing and specifications have been refined between these two sets of documents. It should be noted that the CM/GC Agreement requires an estimate upon receipt of 100% construction documents and does not provide for any further updates of the estimate nor was WOJV directed by TJPA to perform an updated estimate.

WOJV has checked the wall quantities from the 100% CD estimate against the ASI 132 documents and determined that there was an increase in quantities for both wall types. In our discussions with the bidders we have determined that the quantities they bid are generally consistent with the quantities from the ASI 132 documents. The increase in wall quantities between the 100% CD Estimate and the ASI 132 bid set of documents accounts for a $2.98 Million variance in cost between the estimate and the bids received.

The attached spreadsheet identifies other differences between the two sets of documents. The spreadsheet shows an increase in insulation quantities, materials for the Roof Top Restaurant, revised CMU and partition walls, revised specifications, and finish levels totaling $5,462,464.

As the development of bid packages progressed, some items were shifted from other trade packages to TG16.0 Interiors/Finishes Bid Package. This shifting of scope includes scaffolding that is shared by other trades, changes due to VE/secondary mitigation (W-18 vs. W-14, prefabricated buildings vs. conventional buildings, metal wall protection vs. finish drywall, etc.), and scope reassigned from other bid packages (access panels for MEPS trades) totaling $2,461,116.

When the 100% CD estimate was produced, all bid packages were scheduled to be bid out by the end of 2014. Due to refinement of the design and implementation of secondary mitigation, TG16.0 was issued for bid on February 12, 2015 following receipt of ASI 128 documents and subsequently ASI 132 documents which were received on May 4, 2015. With the current progression of structural steel and concrete work in the field, there are some additional costs to the TG16.0 bidders that were not included in the 100% CD Estimate Some examples are patching of fireproofing, locating reinforcement within concrete slabs for post installed dowels/anchors, and drill and epoxy of anchors/dowels.

Through the above analysis WOJV has been able to identify more than ten million dollars in specific costs between the 100% CD Estimate and the TG16.0 bid documents. Since this does not fully account for all the differences between the estimate and the bids received, it is fair to assume that the balance is due to each

subcontractor's approach, management/ supervision costs, varying overhead and the subjective factors noted above. We do not have access to the bidders' estimates to determine the exact cause of the variance between bids received and the 100% CD Estimate. Due to the timing, scope and unique nature of the Transbay project, there aren't other projects that are directly comparable with available comparative data.

There were three competitive bids received for TG16.0 and there were three subcontractors each bidding masonry walls and interior partitions. These bids reflect the current market conditions as well as the current difficult logistics of the project. We have determined that the low bidder understands the scope of the project. WOJV believes the bids received are fair and reasonable and were arrived at in an independent manner. We do not believe that rebidding this scope is likely to achieve a better result and failure to award this scope in July would cause project delays driving up the cost even further. WOJV recommends award of TG16.0 to Skanska.

Please contact me should you have any questions.

Sincerely,
WEBCOR/OBAYASHI Joint Venture

On behalf of
Steve Humphreys
Vice President

cc: M. Ayerdi-Kaplan, J Pedersen, D. Turchon, S. Gigliotti, B. Dykes

COM3341

100% CD Estimate - By trade group sent to TJPA on 6/12/14

Original Bid Package	100 % CD Estimate	Skanska Bid	Variance
TG07.4 Masonry	$ 7,391,701	$ 12,207,635	$ 4,815,934
TG08.4 Metal Ceilings	$ -	$ 265,629	$ 265,629
TG16.1 Metal Framing & Drywall	$ 6,920,552	$ 18,594,036	$ 11,673,484
TG16.2 Ceramic Tile and Flooring	$ 938,689	$ 1,107,730	$ 169,041
TG16.5 Painting	$ 2,751,742	$ 2,599,774	$ (151,968)
TG16.6 Doors/Frames/Hardware	$ 1,321,961	$ 531,258	$ (790,703)
TG16.7 Millwork	$ 308,906	$ 300,670	$ (8,236)
TG16.9 Prefab Buildings	$ 405,411	$ 932,528	$ 527,117
TG20.1 Final Cleaning	$ 868,373	$ 452,135	$ (416,238)
Access 8.x & 10.x	$ -	$ 1,243,370	$ 1,243,370
Restaurant	$ -	$ 791,236	$ 791,236
Total	$ 20,907,335	$ 39,026,000	$ 18,118,665

TG16.0 Interiors/Finishes - Added Cost Breakdown

Value	Scope Item	Quantity Refinement	Shifted Scope
$ 1,243,370	Work Platform		Design, furnish, install, maintain and remove elevated work platforms for use by all trade subcontractors requiring access.
$ 791,236	Roof Top Rest.	Roof Top Restaurant	
$ 441,764	CMU	SF of wall added - ASI 118	
$ 2,542,464	Stud Walls	SF of wall added - ASI 118, 119, 127 & 128	
$ 370,000	Insulation	SF of insulation added	
$ 265,629	Cement Plaster		Cement plaster (W-18) added after 100% CD. Secondary mitigation changed from W-14 (TG8.4 Metal Ceilings). - 09 24 00 Issued ASI 124, ASI 127, ASI 128
$ 527,117	Prefab Buildings		Prefab buildings added after 100% CD. Secondary mitigation to change site built system to prefabricated buildings (previously W-16 skin, electrical, drywall, plumbing, etc.) - ASI 118, 119, 124, 128
$ 250,000	CMU	8" and 10" CMU changed to 12" CMU and increased rebar requirements - ASI 118, 119, 121	
$ 100,000	Framing	Doubled number of braces in stud walls requiring bracing - 09 22 19 3.4 B 9	
$ 100,000	Framing	Revised structural design requirements - Specification 01 80 50 added as a reference in non-structural framing spec, and referenced structural design criteria within on S-0005 was revised after 100% CD's - 09 22 19 1.6 B	
$ 100,000	Framing	Added design-build responsibility for Ballistic resistant walls added to non-structural framing spec subsequently to 100% CD set - 09 22 19 1.6 K	
$ 20,000	Framing	Subsequently to 100% CD's, requirements were added to review the design given within the contract documents to assure the design with the contract documents comply with the stud manufacturer's requirements and directs that guages be changed if necessary 0 09 22 19 2.3 E	
$ 20,000	Framing	Subsequently to 100% CD's, requirement deleting the ability to use shot pins for overhead work in non-structural framing was added - 09 22 19 2.5 A 3	
$ 500,000	General		Patching of Fireproofing for work installed out of sequence
$ 1,000,000	General		Scanning of concrete for post applied fasteners installed out of sequence
$ 500,000	CMU		Drilling and epoxy of rebar for reinforcement installed out of sequence

TG16.0 Interiors/Finishes - Added Cost Breakdown

Value	Scope Item	Quantity Refinement	Shifted Scope
$ 500,000	Framing		Portions of the concrete work will be completed prior to installation of TG16.0 Interiors/Finishes' work. Furnish and install all post-installed anchors/embeds associated with/integral to the work of this Trade Package.
$ 25,000	Framing		Added access panels for MEPS trade contractors
$ 150,000	Framing		Removal of foam forming material to install fire stopping due to an inability to coordinate materials in sequence
$ 300,000	Framing	Changing of standard framed walls to ballistic resistant assemblies	
$ 130,000	Framing		Remove structural fill polystyrene from t.o. str. Slab (civil/topping) to Insul 7 (finishes) - ASI 132
$ 220,000	Framing		Remove steel plate at stairs increasing finish reqirements - ASI 119, 128 & 130 (secondary mitigation)
$ 320,000	Framing	Wall finish level revised to primarily Level 5 in lieu of Level 4 - ASI 127	
$ 50,000	Framing		Infill opening for Service Elevator 201 - ASI 128
$ 5,000	CMU	Changed CMU A1-2252, A1-3196 - ASI 128	
$ 10,000	Framing	Added 2 hour ceiling assembly at temp. retail façade - - FO T-00027 & ASI 128	
$ 20,000	Framing	Stair 405 added (added rated passageway) - ASI 118	
$ 10,000	CMU	Added CMU stem wall at vehicle ramp 2/A1-9255 - ASI 121	
$ 2,000	Framing	Revised Wall Type 49 - ASI 127	
$ 60,000	Framing	Added control joints - ASI 121, ASI 127	

WEBCOR BUILDERS OBAYASHI JOINT VENTURE

July 6, 2015

Mark Zabaneh
Transbay Joint Powers Authority
201 Mission Street, Suite 2100
San Francisco, CA 94105

RE: **Transbay Transit Center – 30100.01**
SUBJ: **TG08.11R – Glass Curtain Walls and Skylights - Construction Change Order Recommendation – July 2015 Board Meeting**

Dear Mark,

On February 12, 2015, Crown Corr Inc. was awarded a contract for design of the W-2, W-3, W-4, W-6, W-8, and W-10 glazing systems. Since award of the design there have been numerous design coordination meetings where the glazing system design details were refined in collaboration with TJPA, PCPA, PMPC, Turner and the RVA consultants. The glazing systems have now been fully designed, engineered and priced and they are ready to proceed with construction.

Crown Corr's proposed cost for the glazing systems is $59.71 Million. WOJV's 100% CD estimate in February, 2014 for the glazing systems is $40.5 Million. The costs submitted by Crown Corr have been reviewed and compared, on a system by system basis, to the CM/GC 100% CD Estimate. Crown Corr has submitted detailed back-up documentation to support their pricing. WOJV and the project team have reviewed the pricing and determined that is appropriate for the scope of work.

The key factors causing the increase in cost are:

- Addition of permanent glazed "pop-outs" at retail entrances instead of temporary partitions
- RVA loading criteria
- Design coordination of the glazing systems with the already designed structure
- Compressed schedule requires work simultaneously in multiple areas
- Limited availability of manpower
- Limited availability of suppliers due to market conditions and the short procurement times necessary to meet the schedule

These items are further discussed below.

The project design incorporates temporary pop-outs at the retail entrances, consisting of light metal framing and gypsum board. It was planned that the retail tenants would remove the temporary walls and install permanent glazed partitions when the retail spaces are built out. During the design of the glazing system, it was recognized that the RVA loading criteria at these areas results in a specialized curtain wall design that would be very difficult to install later. It is far more efficient to eliminate the

temporary partitions and install the permanent glazing now. This results in an added initial cost of $2.7 Million for the glazing systems that will be offset by lower costs later to develop the retail spaces.

In the development of the glazing system design, there were numerous meetings with the design team and RVA consultants to develop the loading criteria for the glazing systems. The blast criteria calls for pressure and impulse requirements in both directions on the system with a balanced design. It was several weeks into the design process before the cumulative effects of the RVA requirements were fully understood and engineered into the glazing system. The additional cost to comply with the RVA loading criteria over and above a more typical blast design is $3.8 Million.

The building structure has been fully designed and is under construction. As the curtain wall system design was developed, it became clear that there were limitations on how the loads from the glazing system could be transferred to the structure. This has resulted in much larger embeds and internal support members than is typical for a curtain wall system. The additional cost for the glazing systems to satisfy the structural requirements of the building are $2.5 Million.

The schedule for completion of the project has been significantly compressed due to many factors. This will require Crown Corr to mobilize large crews and work in multiple areas simultaneously. There is limited availability of labor in the current market and it will be difficult to staff the project with a qualified workforce. This has been factored into the labor productivity costs and results in an increase cost of $3.6 Million.

Due to current demands in the marketplace, the major curtain wall manufacturers are booked out an average of 14 to 16 months to fabricate and deliver curtain wall and skylight system components. As a result of the shortened procurement time necessary to meet the schedule, we are limited to only a few suppliers for the major components. This reduced competition is increasing the material costs by an estimated $1.5 Million. The alternative is to delay completion of the project by as much as 6-9 months, further increasing the costs.

Furthermore, WOJV has seen cost escalation for glass greater than 20% since early 2014 on other projects.

The above factors account for most of the $19.2 million difference between the 100% CD Estimate in February, 2014 and the proposed cost from Crown Corr. WOJV recommends that Crown Corr be awarded the contract for construction of the TG08.11R Glass Curtain Walls and Skylights. Failure to award the Glass Curtain Walls and Skylights at the July Board Meeting will result in significant delays to the project and increased costs.

Sincerely,
Webcor/Obayashi Joint Venture

Steve Humphreys
Vice President

Cc: Mark O'Dell, Ray Quesada - PMPC
Dennis Turchon, Eddie Phillips – TJPA
Jes Pedersen, Jeff Heath, Scott Onick – Webcor/Obayashi

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