

**Responses to Comments
Independent Review Panel Draft Reports**

**INDEPENDENT REVIEW OF THE
WATER SYSTEM IMPROVEMENT PROJECT (WSIP)
CONSTRUCTION MANAGEMENT PROGRAM**

Prepared by:

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Prepared for:

**San Francisco Public Utilities
Revenue Bond Oversight Committee (RBOC)**

December 28, 2011

Following are the responses to comments received from reviewers of the October 28 and December 5, 2011 Independent Review Panel (IRP) Draft Reports.

No.	Location	Comment	Response
BAWSCA Letter to Aimee Brown from Arthur Jensen dated November 21, 2011:			
01	General	<p>The IRP failed to understand the significance of the SFPUC's recent action to re-baseline the program in June 2011 and take this into consideration when reviewing and comments on the SFPUC's current (Sept. 2011) progress to schedule and budget. The IRP did not consider or report how past performance might affect future performance by reviewing in more detail key performance measures and whether current projected delivery schedules are realistic. BAWSCA is significantly concerned with this trend and believes it should be addressed as part of the IRP's report.</p>	<p>The IRP's specific charter is to review the performance of the CM Team during the construction phase of the WSIP. For this review, the IRP was directed to address contract management, risk management and cost, schedule and contingencies. To do this the IRP reviewed project documents, visited four on-going construction projects, attended relevant meetings, and met with key staff as described in the agreed scope and work plan. The cost and schedule performance during construction was assessed by analyzing the current and forecast at completion values against the values at award. Specific project construction performance can be an indicator of overall WSIP performance, and issues addressed and recommendations made, if addressed, should help to improve overall performance going forward. The IRP was not asked to assess the performance of the overall WSIP. To do this would require investigation of pre-construction and post-construction performance, as well as more detailed review of all construction projects completed and yet to be completed. The re-baselining was not a factor in the IRP assessment because individual project construction performance was compared to the original contract budgets and award amounts.</p>

02	General	<p>The IRP failed to identify and analyze the impact of the current situation with regard to the projected (including trends) use of available time and budget contingency for the Regional WSIP projects at this stage of construction. For example, as of October 1, the time delays projected to be used for the Regional WSIP projects is about 68% with about 38.7% of the regional construction work projected use of construction contingency for time (and money) so early in relation to work completed and believes this issue should be address as part of the IRP's report.</p>	<p>The IRP did comment specifically on construction phase schedule and budget contingency performance, trends and forecasting. Overall, cost increases beyond contract award amounts at this time for completed and on-going construction projects appears to be within the allocated contingencies based on the percent of completion. While several of the projects analyzed were in excess of their 10% allocated contingencies, others are significantly under. We commented that contingency amounts should vary depending upon the specific project's complexity and risk. We did raise a concern about schedule performance for several of the projects reviewed and also commented that, in the IRP's opinion, schedule performance was not being managed as effectively as cost.</p>
03	General	<p>There are several citations in the IRP draft report that indicate that the various elements of project soft costs are within industry norms. Yet there is no source cited for this assertion or indication as to whether the information came from programs of similar scope and size. Management of these costs is critical to staying within overall budget. Documentation for the statements made by the IRP is necessary to better substantiate the statements made in the report and to better understand if soft costs are being managed for the WSIP.</p>	<p>Based on the experience of the IRP members, it is felt that the soft costs are at the high end of the range the IRP has seen on other projects. Benchmarking data has been provided to support the IRP assessment. The IRP commented on the reasons for the number being at the higher end of the range which include the fact that this is a program consisting of 81 regional projects and as such requires regional project CM support and greater overall program management support than</p>

			<p>a stand-alone project. There are also organizational issues that may contribute to this as discussed in the first IRP review. It is very difficult to make hard quantitative comparisons because of the different ways each agency quantifies their costs.</p>
David Sutter Email forwarded from John Ummel to Gary Griggs and Bill Ibbs dated November 3, 2011:			
04	General	<p>I am particularly concerned with the WSIP completion schedule and its continual slippage. The IRP states that the 2005 baseline schedule has to date slipped 25 months. That represents a 25% schedule extension. This, coupled with the IRP's analysis that 96% of WSIP schedule contingency has been spent as of 2011, threatens significant program delays with every individual project delay. PUC has essentially used up all of its WSIP program schedule float, and is also rapidly exhausting schedule float in individual critical path projects. The IRP says this is fine, but it's not. It's a disaster that is continuing to unfold.</p>	<p>Please see the above responses. Schedule performance is far more difficult to monitor than cost because it is not strictly additive as is cost. The IRP has elaborated on this in the report. The IRP is not in a position to analyze the schedule for the overall WSIP as this requires a very detailed analysis. We have raised concerns about schedule performance based on the on-going construction projects reviewed and certainly didn't mean to imply that schedule performance is fine. In fact, we have recommended that better schedule management be implemented.</p>
05	General	<p>Schedule maintenance and recovery is the paramount issue for the WSIP. PUC should analyze the potential for schedule improvement in critical path projects through the application of excess contingency funds to accelerate construction progress. For example, if Calaveras Dam is still the critical path project for the WSIP, could infusions of cash accelerate construction "buy back" time and improve the overall WSIP schedule? There may not be significant "buy back" opportunities, given the current lack of program and project float, but these kinds of possibilities should at least be explored.</p>	<p>This was not an issue the IRP was asked to review but agrees that it should be considered by the SFPUC. The IRP has recommended a cost-to-complete including a schedule assessment be done and this "buy back" approach could be considered if acceleration is required.</p>

06	Section D	I agree with the IRP recommendation that PUC should develop an "interface management plan" that includes systems integration, test and startup and facility shutdowns, with clearly assigned roles and responsibilities for O & M personnel, WSIP staff and contractors and consultants. Detailed plans and schedules for completion of these activities within the overall WSIP completion schedule need to be developed.	No response required.
07	Section D	I support the IRP recommendation that constructability reviews include a focused effort to identify and correct design errors and omissions.	No response required.
08	Section B Question 8	I disagree with the IRP position on earthquake protection during construction. There are extensive design standards in California that provide guidelines for low-cost measures (e.g., temporary shear walls, thrust blocks, etc.) to minimize damage to structures under construction.	Based on its review, the IRP was not able to confirm whether such measures are included and would suggest that it be further investigated and reported on by the CM Team.
Comments from October 31, 2011 RBOC CWG Meeting Review:			
09	General	Include an Executive Summary.	Will include.
10	General	Provide Brief Bios of the IRP members.	Will include.
11	General	Start each question response with an answer followed by discussion.	Will do.
12	General	Where possible, include tables and figures in the appropriate location in the report text.	Will do.
13	Section A Question 1 Paragraph 3	What is effect on overall program?	The data given in the response is an aggregate of contingency time used for individual projects and does not address the time impact to the program as a whole. A detailed time analysis for the program is beyond the scope of this study.
14	Section A Question 2 Paragraph 4	What does "inordinately" high mean? Would other delivery methods such as IPD, D/B, CM/GC, etc. be recommended?	We have revised this wording for clarity.
15	Section A Question 2 Paragraph 6	Who is on the change review board and what is the process of approval?	It is actually called the Change Control Board (CCB) and includes Julie Labonte, Harvey Elwin and others. We have added further information about the CCB in the report.
16	Section A Question 4 Paragraph 2	Include reference to monthly trends meeting.	Will do.

17	Section A Question 6 Paragraph 2	Remove reference to Flyvjerg analysis because Bill feels they have been discredited.	We are not aware that the analysis has been discredited, but it does include cost growth beyond just the construction phase and for that reason we will not use it. Other benchmarking data has been provided.
18	Section A Question 6 Paragraph 2	Should we expect larger increases in the later phase of the program?	The pattern of increase for a project, or, in this case, a program of projects depends entirely upon the details of the projects involved.
19	Section A Question 6 Paragraph 3	Are the schedule delays in accordance with industry norms?	Based on the experience of the IRP, the schedule delays are not unusual for a project or program of this complexity.
20	Section A Question 6 Paragraph 3	How do these conclusions compare with the recent SF Budget Analyst Report?	The CCSF Budget Analyst Report only reviewed costs. The range of average increases for public utilities projects was 5.5% to 10.1% depending upon the size of the project. This appears to be consistent with the WSIP construction project performance.
21	Section A Question 9 Paragraph 3	Distinguish between this statement and the last sentence of Question 8?	The report will be revised to address this apparent contradiction.
22	Section A Question 10 Paragraph 2	Include reference to the City certification process affect on timely payment.	Will do.
23	Section A Question 10 Paragraph 2	The contractors are prohibited from reserving their rights.	Noted.
24	Section B Question 4 Paragraph 1	What about comparison to other similar utilities like NYDEP, Chicago, LADWP, Federal, etc.?	Benchmarking has been provided.
25	Section B Question 9 Paragraph 1	Aren't there some provisions in the design or means and methods for earthquakes during construction?	The IRP was unable to obtain specific information to confirm this. It is recommended that the CM Team further investigate.
26	Section C Question 1 Entire Question	This information is based on the July 1 summary report which is out of date and based on program costs not construction costs.	This section has been revised to reflect current construction performance.

27	Section C Question 1 Paragraph 6	Shouldn't the first sentence read ... "program" rather than "project" is expected to ...?	Agree and will correct.
28	Section C Question 4 Paragraph 3	The third sentence should read ... "22" rather than "23" current projects ...	Agree and will correct.
29	Section C Question 5 Paragraph 3	The discussion is not clear.	The text has been revised for clarity.
30	Section C Question 7 Paragraph 1	Make sure that only the CM portion of the "Program and Project Management" costs is included in the determination of CM-related soft costs.	The soft cost analysis has been revised to address this concern.
31	Section C Question 7 Paragraph 3	Comment on organizational impacts (e.g. City and Consultant aspect).	Will do.
32	Section D	Categorize and prioritize the recommendations.	Will do.
33	Section D	Be specific about what the RBOC should do next. How about beyond that?	Will do.
34	Section D	Explain more about the Integration Management Plan.	Will do.
SFPUC Comments dated October 28, 2011:			
35	General km1	A number of general conclusions on the CM Program are being made based on feedback provided by 5 contractors, of which 3 or 4 are for projects with the greatest number of changes. These conclusions should be qualified as such or care should be taken to validate them and make sure they are representative of all projects. About two dozen projects are currently in construction and many more have already been completed.	Agreed and clarifications will be added.
36	Section A Question 1 Paragraph 2 km2	Table 1 shows all change orders total \$72.7M as of 9/27/11. You may want to clarify that the \$66.2M corresponds to the 29 projects, which is a subset of Table 1 that includes SF Local Projects.	Will clarify.
37	Section A Question 1 Paragraph 3 km3	Individual project schedules do not include a standard 10% contingency. The 10% schedule contingency reported in CMIS is for tracking when Commission approval is required.	This is somewhat confusing because there are 10% original and 12% revised schedule contingencies being tracked on the Contract Summary (Figure A.1) which imply they relate to an overall program contingency. It is apparently an aggregate of individual construction contract schedule contingencies which really doesn't relate to the program schedule performance. The text will be corrected and further discussion of this issue

			provided in the report.
38	Section A Question 1 Paragraph 3 km4	<p>Out of the 2,453 days approved time extension, SF local contracts had 1,417 days. This is about 58% of the total approved time extended. The approved time extension in all Regional Projects is 1036 days. The Regional 10% contingency was 3,545-1377(original 10%contingency for SF local) = 2,168 days. So approved change orders for time extension in Regional projects represent 48% of the contingency time that has been used versus 40% of the construction work that has been completed today.</p> <p>However, one cannot a schedule at the Program level in a linear fashion because individual project schedules overlap one another. As demonstrated above, a majority of the time change orders to date are for Local projects. The data is also misleading because of large time extensions for smaller Regional projects that have reached or are about to reach construction completion (e.g. SJPL Crossovers, Lawrence Livermore, Baden/San Pedro Valve Lots).</p> <p>The number of days cited are based on a gross analysis of the numeric data which aggregated all identified time extensions in a simple arithmetic fashion, did not separate Local from Regional WSIP projects, took no account of concurrency, did not analyze total program float or examine how schedule contingency or float is distributed to those projects that control WSIP completion. Care should be taken before drawing any conclusions from such gross data without more detailed analysis. This comment was already shared with the independent panel that recognized its validity and agreed to analyze this further before drawing final conclusions.</p>	<p>We will address these comments in the report. However, this supports the IRP comment that schedule management needs to be improved and recommendations have been made in the report.</p>
39	Section A Question 2 General km5	<p>May want to point out that COs rarely fit perfectly into one category and that categorizing each CO involves judgment and can be a subjective process</p>	<p>Will include a statement of clarification about how some change orders involve judgment and can be a subjective process. However, SFPUC/WSIP should review the process for categorizing COs and make sure all projects are using the same criteria to categorize COs.</p>
40	Section A Question 2 Paragraph 4 km6	<p>Table 2 characterizes COs for 5 projects. Clarify if the 18% stat is for these 5 projects or for all program COs</p>	<p>Will clarify. It is for the 5 projects only.</p>
41	Section A Question 2 Paragraph 4	<p>WSIP Quality Management Program already requires constructability reviews of contract documents by CM Consultants. May want this recommendation to be</p>	<p>The IRP recommends contractor participation in constructability reviews</p>

	km7	<p>more specific and require the review to be by a construction contractor as specified in last section of the report.</p> <p>However, it is our opinion that constructability reviews do not typically address Design Errors and Omissions. They concentrate on constructability issues such as mobilization problems, lay down areas, circulation and traffic, schedule and milestone issues, shutdowns, QC requirements, Division 1 requirements...etc. The best way to avoid design errors and omission is to assign a 3rd party reviewer (an independent design consultant) and give them enough time and resources to a comprehensive QA/QC review of the bidding documents before advertising.</p>	and concur that they may not be picking up design errors and omissions. It is assumed that there are peer reviews during the design process. The report will be revised to clarify this point.
42	Section A Question 2 Paragraph 8 km8	<p>Definition of "Other" COs in our CM Plan is: changes required for all other reasons, including emergency work, adjustment of bid quantities, force majeure events, incentive payments, accepted substitutions, and value engineering change proposals.</p> <p>Sometimes additional costs of DRB expenses have been covered via COs classified as Others. In general though the DRB costs are covered by an allowance in the contract. Unexpected costs include emergency work, force majeure events, and substitutions and VE changes.</p>	Will revise report accordingly.
43	Section A Question 4 Paragraph 2 J9	Please note that trends are included.	Will note.
44	Section A Question 6 Paragraph 2 km10	Some studies have been based on flawed premises because the estimates were sometimes deliberately underestimated to get commitment to projects. Then the actual cost looked like an "overrun". Need to be sure the cited study stands up in comparison to WSIP?	Will address in report. The other problem with using the Flybvjerg information for comparison is that it includes cost growth beyond just the construction phase.
45	Section A Question 8 Paragraph 2 Km11	Appears to conflict with highlighted sentence below under Question A9?	The report will be revised to address this apparent contradiction.
46	Section A Question 9 Paragraph 3 km12	Be specific on what CM Teams and why the delay in processing changes. Is delay due to lack of resources? Are there strategic reasons for delaying processing? Are contractors submitting incomplete documentation?	Will address in report.
47	Section A Question 9 Paragraph 3 km13	Appears to conflict with last sentence under Question A8 above.	The report will be revised to address this apparent contradiction.
48	Section A Question 9 Paragraph 6	Clarify that most significant change categories for these 2 projects are not the same for SVMTP: ORCs + design errors/for BDPL5-EB: DSCs + others. (ORC =Owners	Will clarify differences between the classifications of COs for the two

	km14	Requested Change and DSC= Differing Site Construction)	projects.
49	Section A Question 10 Paragraph 1 km15	Backlog of changes and the need for more contract admin resources is a valid point for some of the project reviewed, but for a majority of other projects completed or being completed it is not. In addition while some of contractors interviewed are complaining about slow processing of changes by the CM, they greatly contribute to delays in that regard either by not submitting COR's timely or by submitting them without adequate support to process such as costs estimates, justification, etc. A great number of CORs and PCOs have pending actions with Contractors	Will clarify.
50	Section A Question 10 Paragraph 1 km16	Clarify how many contractors were interviewed for this question.	Will clarify.
51	Section A Question 10 Paragraph 1 km17	Not unusual for CMs to deny some change orders. We have not quantified the number of denied COs per project, but based on the PCM's experience on other large programs, the number of COs that are denied on the WSIP is pretty standard. The panel review focused on the projects with an unusually high number of changes, including rejected changes, and they are not representative of the rest of the projects. The BDPL5-East Bay and SVWTP contractors had a numerically high number of changes denied, but these same contractors submitted very large number of changes, at times in batches. The number of denied changes on these 2 projects is not representative of WSIP. Both contractors submitted significant numbers of "placeholder" changes without quantification or scope and these were summarily denied.	Will address in the report.
52	Section A Question 11 Paragraph 3 km18	As stated in a previous comment, although we do not quantify and track the number of denied COs vs. the total number of COs, we do not believe we have unusually high number of denied COs. The question here should be whether the program is track and account for potential future impact to cost and/or schedule of denied COs. The answer to that question is yes. Denied COs that may involved unresolved issues are included in project trends which allows for their potential impacts on cost and schedule to be accounted for in our forecasts.	Will clarify in the report.
53	Section B Question 1 Paragraph 1 km19	Spell out OSHA.	Will do.
54	Section B Question 3 Paragraph 2 km 20	This is not an accurate statement. The Risk register on CS/SA had Risk No.8 identified under regulatory category: "unanticipated Presence of Endangered / Special species"	Will correct.

55	Section B Question 8 Paragraph 1 km21	These rates are from applicable Bureau of Labor Statistics.	That is correct and will be added to the text.
56	Section B Question 10 General km22	<p>We do not include the 80% risk level in project forecasts. However, we do include the 80% number in the CM status tables and charts reviewed by WSIP Managers on a monthly basis. This gives WSIP Managers a feel for the level of outstanding risks in addition to the forecasted changes vs. the allotted contingency. Furthermore, the 80% Risk values are used to justify requests to the Commission for additional construction contingency amounts.</p> <p>Our procedures require that for each CO the impact of the CO to the schedule be analyzed with the use of a fragnet, and if an impact is expected, the contractor must submit a Time Impact Analysis to support a time extension request. This procedure needs to be enforced so "schedule forecasting is tied more closely to cost forecasting".</p>	<p>This clarification will be incorporated into the report text.</p> <p>This clarification will be incorporated into the report text.</p>
57	Section B Question 10 Paragraph 1 km23	We do not agree with this recommendation. Risk in its nature is a probability based event/ uncertain event or condition. This will not reflect an accurate forecast and will not be a controlled management tool for efficiently managing forecasts. Risk should not be in the forecast but should be considered/included with changes and trends when assessing the adequacy of remaining contingencies.	This appears to result in some inconsistency in that contingency assessments include costs associated with risks whereas forecasts do not. However, the IRP would acknowledge that risk is not normally included in forecasts and will provide a clarification to the report text.
58	Section C General J24	Some of the project-level schedule and cost facts presented in this section are misleading because performance is compared to the recently approved June 2011 Revised WSIP, which includes re-baselined schedules and budgets. It would be more appropriate to compare all current performance to the approved 2005 budgets and schedules. However, please note that a majority of the schedule delays and some of the cost increases since 2005 are associated with pre-construction activities, which is not the focus of this independent review.	Because the IRP charter is to only review the construction phase we will revise this section accordingly. We are assessing construction project performance based on the original award values.
59	Section C km25	Much of the text under Question C1 is addressing the Quarterly Report and project completions with respect to project completions and increases in schedule. Since the data in the quarterly report reflects overall completions and in many cases delays in preconstruction this discussion of the projects and increases in schedule	This section has been revised to only address construction phase activity.

		is addressing the program and not the construction program. To address this for the construction program the only the delays in construction contracts from NTP to completion should be the focus.	
60	Section C Question 1 Paragraph 1 km26	This should be 15 projects to be consistent with the following paragraph and the quarterly report.	Will correct.
61	Section C Question 1 Paragraph 2 km27	Need to be consistent when comparing data. First sentence talks about 15 construction projects and second sentence mentions 25 projects. There are a lot of different reports and stats available so to avoid any confusion, please always clearly identify the data/reports used when presenting facts.	Will correct.
62	Section C Question 1 Paragraph 4 km28	What do you mean by costs of current and future change orders? Clarify whether \$141M includes 3 categories of change orders and trends.	Will clarify.
63	Section C Question 1 Paragraph 6 km29	This observation of the overall WSIP cost forecast is incorrect and misleading because the latest cost forecast includes significant cost savings in the Program Management Reserve (~ \$140 - \$160M). See latest WSIP Quarterly Report cover letter for discussion on how Program Management Reserve is accounted for in overall WSIP cost forecast.	Will clarify.
64	Section C Question 2 Paragraph 3 km30	Currently conducting tests to tie CMIS to P6, particularly for the submittals module. The idea being that CMIS could directly pickup the required date from the P6 schedule for the submittal log.	Noted.
65	Section C Question 3 Paragraph 2 J31	Change Control Board (CCB).	Will correct.
66	Section C Question 3 Paragraph 2 km32	Just to clarify. The CCB was originally formed to review significant pre-construction scope, cost and schedule changes greater than a specific threshold. Since the CM Change Management Procedures clearly outlines the approvals required during the Construction Phase, CCB review during the Construction Phase is only required for "owner" requested changes greater than or equal to \$50k. All other changes initiated in the Construction Phase are handled via the CM Change Management procedure and do not require separate review by the CCB. Please note that the CCB does review	Noted and will add clarification language to the report.
67	Section C Question 4 Paragraph 2 km33	Per specs, the contractor is only allowed to enter schedule activities into the schedule for approved Change Orders. However, they must submit fragnets for future COs to support any requests for Time Impacts. These potential impacts are considered in the Trends, and are included in our schedule forecasts. This statement is therefore incorrect. Time extensions	Noted and will add clarification language to the report.

		associated with all COs (approved, pending, and proposed) and trends are included in schedule forecasts.	
68	Section C Question 4 Paragraph 3 km34	Clarify what are the 2 projects.	Will do.
69	Section C Question 4 Paragraph 4 km35	Clarify what are the 2 projects.	Will do.
70	Section C Question 5 Paragraph 3 km36	For completed projects may want to mention how many of those projects exceeded the original 10% contingency.	Will do.
71	Section C Question 5 Paragraph 3 km37	May want to mention whether these stats and those for completed projects to date are acceptable in comparison with the industry standards.	Will do.
72	Section C Question 6 Paragraph 1 km38	This is how project contingency used to be allocated. However following discussions with BAWSCA, this was changed to a standard 10% contingency for all projects to simplify tracking of changes and overall performance.	Noted.
73	Section C Question 7 Paragraph 3 km39	Should clarify in a footnote how WSIP costs are categorized. Program management costs include all expenditures associated with program-level development and implementation. These costs cover the following functions/activities: general oversight and coordination between the various SFPUC/City organizations and consultants involved in the WSIP; program controls and reporting; risk management; program communication and public outreach; legal services at the program level; cost estimating at the program level; document control/management; program-level CM functions such as programmatic contract administration, schedule and cost controls, field safety, quality management, dispute resolution; labor relations; programmatic effort related to system engineering; programmatic ROW support; interagency permitting; and administrative functions such as reports to oversight bodies, response to various oversight bodies and audits, formal requests to Commission and Board of Supervisors (for approval of policies, changes to City Charter, supplemental appropriations, and changes to the program). Additionally, these funds cover all consulting services for program support, the administration of program contracts, and the resources appointed to the WSIP Director's Office.	Will include in report text.
74	Section C Question 7 Paragraph 3 km40	$116.7/2630 = 4.4\%$	Will further analyze and revise accordingly.

75	Section C Question 7 Paragraph 4 km41	Project Management Costs include oversight and management functions that are specific to a project. These functions, which extend from project initiation to construction completion and start up of new facilities, include: project-specific controls, cost estimating (including 35% design check cost estimate and 95% design independent cost estimate) and scheduling, value engineering, general oversight and coordination between the various SFPUC and City organizations and consultants involved in the project. Project management costs include the costs associated with labor hours of the Project Manager (PM), Regional Project Manager (RPM), and Regional Client/Operations Representative (a.k.a. Operations Liaisons) assigned to the project. Also Project Management Costs include record management, communication costs and other project-specific administrative costs.	Will include in the report text for clarity.
76	Section C Question 7 Paragraph 4 km42	$155/2630=5.9\%$	Will further analyze and revise accordingly.
77	Section C Question 7 Paragraph 5 km43	These costs cover all required CM services, including management of project field office, field inspection, administrative support, schedule review and analysis, cost estimating, claims analysis, safety monitoring, project closeout, administration support, and Supplier Quality Surveillance cost during equipment fabrications. In addition, these costs cover testing services and special inspections, contract administration/management and labor relations (including administration of Project Labor Agreement). The Program Management Project in this cost category also includes the program and regional construction management organizations (labor costs for CM positions that are not project-specific), field offices and associated other direct costs (ODCs).	Will include in the report text for clarity.
78	Section C Question 7 Paragraph 5 km44	The overall costs for the CM phase (\$405.5) includes not only CM costs (\$283.9M) but Engineering Support costs (\$85.2M) and Program CM costs (\$36.4M) already accounted for in the Program Management category. So if you take out the Engineering Support and Program Management, the CM % is 10.8% of construction cost. The costs associated with Environmental Compliance during Construction are also very high at almost 20% of the CM costs but those are not included in the \$283.0M.	Will analyze further and revise the report text as appropriate.
79	Section C Question 7 Paragraph 5 km45	$283.9/2630= 10.8\%$	Will further analyze and revise accordingly.
80	Section D Number 11 km46	See comment to Question C6.	Noted.

81	Section D Number 12 Km47	All under bid amounts are being moved to Program Management Reserve, which is essentially a program-wide contingency.	Noted.
John Ummel Written Comments on Second Draft Report discussed at December 7, 2011 RBOC CWG Meeting			
82	Executive Summary General Note 1	<p>. If one were to only read this <i>general</i> finding, the take-away is that the overall program is doing well. This one-liner seems out of place since on the following page the IRP states <i>“schedule management is a concern and does not appear to be as well managed as the costs.”</i> The IRP goes on to recommend (your #1 recommendation) that additional analyses on individual projects is needed to assess impact on the overall schedule.</p> <p>Would the following (or something similar) be <i>more accurate</i> as a general finding?</p> <p><i>“The IRP continues to be impressed by the very comprehensive and highly qualified CM Team, the CM Plan and Procedures that have been put in place, and the overall management of the program. However, at this juncture of the program, the IRP does have some concern as to whether schedule delays on individual projects could impact overall completion. As such, the IRP recommends additional work in this area. The IRP has no concerns at this time with respect to the program meeting budget as it applies to regional program.</i>”</p>	<p>The concern expressed is only with the reporting of schedule performance in the Contract summary report and the IRP Report has been advised to clarify this point.</p> <p>The related statement in the e Report has been revised in an attempt to address this comment.</p>
83	Executive Summary Change Management Note 2	Is the first sentence under each subject area the key finding? For example, under Change Management, is the key finding: <i>“Change management procedures are excellent and meet or exceed industry standards?”</i> If so, can that sentence stand alone, perhaps be italicized so the reader is immediately drawn to it? Can that be done for the other two sections as well?	Will do.
84	Executive Summary General Note 3	The Executive Summary (ES) should include the most important recommendations and be immediately recognizable. One does not need to list them all (the full list is at the rear) but certainly 3 or 4 should be listed here so the reader - if he/she so chooses to only read the ES - is aware of the report’s major recommendations.	Will include.
85	Scope of the Report Second Sentence Note 4	This comment makes it sound like the IRP was not involved in scope development. Developing the scope was done in collaboration between Bill Ibbs and the IRP (Griggs) with final approval by RBOC. The sentence needs to reflect this.	Will do.

86	Scope of the Report Fifth Sentence Note 5	. The SFPUC essentially told the RBOC that because of the Panel's experience, they would be able to quickly size-up the program even though they would have limited review time. For the Panel not to opine on the overall WSIP performance (i.e., is it poised to finish on time, on schedule) is disappointing. (BTW, both BAWSCA and the RBOC's Independent Observer (Ibbs) noted this omission.)	The IRP was asked, based on its members experience and a quick review, to assess the construction management program only, not the overall program. The IRP is not in a position to make such an overall assessment.
87	Findings and Recommendations Change Management Question 1 Paragraph 1 Note 6	At a prior meeting with the IRP Chair, it was requested that each question be answered upfront with a "yes", "no", or "possibly" or other appropriate clarifier/adverb. Not all questions can be answered this way but the majority can and of these, most are either "yes" or "no".	Will attempt to do so.
88	Findings and Recommendations Change Management Question 1 Paragraph 2 Note 7	The IRP states that local projects are not part of the review. The Panel's scope makes no reference to this. The entire WSIP is under examination. In all fairness, however, the regional program, which has the great majority of cost/schedule concerns, is the primary focus of the review.	At our kickoff meeting for the review we were advised that the five local projects were not part of our review because the local projects are not under the control of the CM Team.
89	Findings and Recommendations Change Management Question 1 Paragraph 3 Note 8	While making distinctions between the regional and local programs are appreciated, the fact is the ratepayer will likely gauge the program's success or limitations on the overall program, not on a subset of the program. With this in mind, what schedule contingency approach is most appropriate for assessing how the overall program will fair over the remainder of the schedule?	See response to comment 88.
90	Findings and Recommendations Change Management Question 1 Paragraph 6 Note 9	There is no "connecting of the dots" discussion in this paragraph as to the impact of using the "misleading" contingency approach. For example, does the continued use of this "misleading" approach understate or overstate the amount of contingency remaining or distort program performance?	This section has been revised for clarity. The time contingency reporting in the Program Summary report (Table 1) appears to provide an overly pessimistic assessment of schedule performance.
91	Recommendations and Findings Change Management Question 6 Paragraph 4 Note 10	The Legislative Analyst's study of contract change orders included contracts for professional services and construction contracts. The WSIP change orders are specific to construction contracts only. Is the comparison still valid? In addition, at a prior meeting with the IRP Chair, it was requested that the IRP comment on this report and the inferences or conclusions drawn versus the IRP's own observations regarding WSIP change orders. Does this paragraph adequately apprise the reader of what the LA's report was attempting to convey?	The fact that the Legislative Analyst's review also included professional services contracts does render questionable a comparison with the WSIP construction contracts. The report has been revised accordingly.

92	Recommendations and Findings Risk Management Paragraph 1 Note 11	The IRP mentions the 2007 Parson's report which concluded that there was a significant risk of the WSIP exceeding its \$4.63B budget. The IRP also mentions that risks are scored based on the probability of occurrence and potential impact to cost. Now that risk management procedures have been put in place, what is the current thinking (by Parsons, presumably) about the probability of the program exceeding its \$4.6B budget?	The IRP has not seen the 2007 Parson's Report and is not in a position to comment on it. The IRP is not able to comment on the overall performance of the program or on Parsons' current thinking about the cost.
93	Recommendations and Findings Risk Management Question 10 Paragraph 1 Note 11	Refer to Comment 92	See response to Comment 92.
94	Recommendations and Findings Project Cost, Schedule and Contingencies Question 1 Paragraph 2 Note 12	Does the "budgeted amounts for each project" refer to the construction budget or the overall project budget? I assume it's the former but can't tell for sure.	It refers to the construction contract amounts. The table has been revised for clarity.
95	Recommendations and Findings Project Cost, Schedule and Contingencies Question 2 General Note 13	It seems odd that given that this section addresses "cost and schedule performance" within the context of "forward looking", there is absolutely no mention or estimation as to whether the program will meet its schedule/budget or whether the IRP checked in with Parsons who presumably has done such analyses. (Again, RBOC's observer, Dr. Ibbs, as well as BAWSCA, suggests the IRP report to be deficient on this point.) It is suggested the IRP consider adding this question to its report: "At this juncture of the program, how likely is it that the WSIP will be completed on time, on budget?" If the IRP can't address this because it would need to do further analysis, then, perhaps, that is the answer to the question but at least this question – which is probably the most important question to ask – has been identified in the report.	The IRP is not in a position to comment on overall program cost and schedule performance as explained in the report. As such, it would not be appropriate to add a question in that regard. Please note that the original scope only requested that the IRP look at soft costs. We suggested adding the "project" cost and schedule review to assess the processes being used specifically for construction contracts.
96	Recommendations and Findings Project Cost, Schedule and Contingencies Question 3 Paragraph 1 Note 14	The SFPUC has been attempting to stay on schedule (spending more money) on some of the more critical projects like Irvington Tunnel. If the focus of the program is to stay on schedule to the best of its ability, it would seem that budget pressures would automatically follow. Yet, the IRP generally concludes it has less concern with the overall budget. Please comment.	The IRP doesn't have less concern about budget rather it feels that there is more clarity in the way cost performance is reported. The IRP feels that cost and schedule are both being managed effectively.
97	Recommendations and Findings Project Cost, Schedule and Contingencies	See Comment 95	See response to Comment 95.

	Question 4 General Note 13		
98	Recommendations and Findings Project Cost, Schedule and Contingencies Question 5 Paragraph 4 Note 15	On page 7 of the report, the IRP states that the "schedule contingency approach is misleading". Is this related to this section? If so, should it be touched upon again?	See response to Comment 90. The concern is with the way schedule contingency is reported not on the approach to schedule management. This section will be revised for clarity.
99	Recommendations and Findings Recommendations and Next Steps General Note 16	As mentioned in a previous meeting, recommendations for additional follow-up work should provide enough information so it is fairly evident to another consultant what the task entails (or what question specifically needs to be addressed like "will the WSIP will be completed on time, on budget"?) Please review the recommendations and edit if need be.	Will do.
SFPUC December 19, 2011 Written Comments to RBOC on Draft WSIP IRP Report dated December 5, 2011			
100	Comment 1 IRP Report Reference: The findings of the IRP Report in the Executive Summary under the Change Management section on page 3 states, " <i>It is not as clear how schedule change orders are handled given the more complex nature of schedule tracking and management on a multi-project basis.</i> "	An understandable comment based on the limited information obtained by the Panel during its short review period. All WSIP change order time impacts are handled rigorously (as defined in the Change and Schedule management procedures and the corresponding construction Contract provisions.) The Panel recognizes the rigorous management and control of time impacts elsewhere in its findings. Schedule impacts of change orders are incorporated into construction contract schedules and the P6 platform is used to monitor impacts on both individual and multiple project construction contracts on a monthly basis. Impacts on multiple construction contracts are managed through management of the WSIP shutdown schedules. The Program individual project shutdowns completely anchor the construction schedule for the program and control the interrelationships of the projects. To date (halfway through the program) no shutdown has been missed and the water supply quality and quantity have never been compromised.	The IRP would concur that there are excellent procedures in place to manage schedule. Unfortunately, in the time given for the review the IRP was unable to fully understand the schedule change order process. The concern arose from the Contract Summary report (Table 1 in the IRP Report) that indicated a serious over-expenditure of time contingency compared to physical percent completion. The concern is really with the reporting, not with the management and procedures. The IRP did not review the shutdown schedule or review how each project's schedule management related to that schedule.
101	Comment 2 IRP Report Reference; The findings of the IRP Report in the Executive Summary under the Change	An understandable observation based on the data reviewed by the IRP. We may have contributed to some confusion by using the term "schedule contingency" in some of our Tables. Use of the term "schedule contingency" may have been misleading in that WSIP projects schedules do not have 10% contingency in the same sense as they have cost contingency. It is simply an arbitrary 10% of the duration at award of each	See response to Comment 100. The IRP is merely reporting exactly what the Contract Summary itself states. The IRP also commented on the apparent inaccuracy of the time contingency reporting

	<p>Management section on page 3 states, “Based on current schedule performance indicators, it appears schedule contingencies are being exceeded for the total of the completed and actual projects and this area needs attention.”</p>	<p>construction project. The reason we set it up in our report is to provide an early warning of need to obtain Commission approval if we exceed 10% of the construction contracts baseline durations. In assessing overall Program Performance, individual project costs are additive, while individual project durations are not. What needs to be measured to reach any meaningful conclusion regarding schedule performance is necessarily more detailed and complex. We do in fact perform monthly performance assessments of all active Regional projects schedules relative to their respective approved schedules and take pro-active corrective measures to correct deviations. Program schedule performance is assessed and monitored using Primavera CMB P6 Construction Contract Schedule platform based on the overall WSIP program Critical Path Method taking into account 22 ongoing, 22 completed and 4 future construction contracts. Examples of projects and program curves were shared with the IRP during their visit and updated samples are attached hereto. See Attachment A</p>	<p>in the Contract Summary report that indicates a serious over-expenditure of time contingency when compared to contract completion. It is also acknowledged that the Summary includes local projects. Regarding the cost performance measure, the IRP Report merely restates what the Summary shows. The report will be revised to provide further clarification.</p>
<p>102</p>	<p>Comment 3 IRP Report Reference: The findings of the IRP Report in the Executive Summary under the Project Cost, Schedule, and Contingencies section in the second paragraph on page 4 states, “Schedule management is a concern and does not appear to be as well managed as the costs. ... It is recommended that schedule change management be strengthened by implementing a more detailed analysis that aggregates the individual construction project schedules</p>	<p>This comment appears to be inconsistent with numerous other Panel positive comments regarding WSIP schedule management. We were surprised at this comment because the finding as presented does not appear to reflect a full understanding of WSIP’s Schedule Management Systems and Procedures. While many local projects have indeed been completed with significant schedule delays, they were executed without the CM Procedures and Schedule Management System developed for the Regional Projects, which control the Program’s Critical Path. When potential delays to Regional Projects threaten the Shutdown Schedule or the Program’s Critical Path, the CM Program moves aggressively to manage and mitigate such impacts. This is evidenced, for example, on the two Sunol projects studied by the Panel where we have acted aggressively to preserve the shutdown schedule and avoided impact to Program completion. As the Panel recognizes, WSIP is using a state-of-the-art, award-winning project controls platform to manage schedule effectively. Our current tools and practices are assisting SFPUC to effectively manage both cost and schedule of WSIP Construction. The Panel recommended Critical Path analysis on the overall WSIP is in fact performed monthly by PDSB.</p>	<p>See response to Comment 100. The Report will be revised for clarity.</p>

	<p>performance in a way that the critical path and overall WSIP schedule can be assessed. Two of the projects studied have significant schedule overruns. However, it is not clear what the impact of those schedule delays will be on the overall program.”</p>		
<p>103</p>	<p>Comment 4 Section A.1 of the findings and recommendations on page 6 makes numerical assessments of the use of cost and schedule contingency from Table 1 and uses the assessments to conclude that the program’s health needs attention because of the perceived percent of use of contingencies exceeding program completion at 41%.</p>	<p>See comment for Item 2 above. These findings and conclusions appear to be inconsistent with numerous other positive comments by the IRP regarding WSIP schedule management and the schedule contingency approach. In addition we would like to point out the following: Table 1 reflects both ongoing and completed projects, but does not include projects not yet started, so Table 1 does not include the total program cost and schedule contingencies because it omits contingencies for projects not yet started; Table 1 does not include the \$145 million of Program Reserves which have been removed from the so-named project cost contingencies, but is still part of the program cost contingency; Table 1 includes local projects (many of which have indeed been completed with significant schedule delays), that are of no real consequence to the remainder of the program and their influence on schedule delays and contingency use reflects only a small impact to the overall program completion; The use of both potential change orders and trend numbers in the assessment means that the percentages of contingencies as used in the Report reflect the future (projected) state of the program at a later percent completion and not at the 41 % complete as of September 25, 2011, which is the actual data date for the information in Table 1. The actual use of cost contingency as of September 25, 2011 at 41% complete would be more realistically represented by a calculation based on only approved and pending change orders, which address modifications (increased cost and time impacts) at the data date. See Attachment B. Table 1 takes no account of concurrency, distribution of float, inter-project relationships, which projects are critical to program completion, and other factors required to reach any accurate, meaningful and balanced conclusion concerning schedule performance.</p>	<p>See response to Comment 100. The Contract Summary report indicates “Needs Attention” which was stated in the Report. The Report does clarify that the Contract Summary includes local projects and also discusses the implications of including potential change orders and trends as a conservative approach. It was understood that only completed or on-going contracts were included in the Summary and that it is not a “program” level assessment. The IRP has been very careful to not make any conclusions about the overall program based on a brief review of on-going construction activity. It is agreed that the inclusion of potential change orders and trends is a conservative approach. However, the IRP feels that the CM Team should establish a clear policy as to what is change orders and trends are included for purposes of assessing performance. The IRP does not necessarily agree with</p>

			the argument that potential change orders and all trends, if they are related to current work, should be considered to occur in the future and compared to a greater project completion level or to future project contingencies. They must be accounted for at the time they occur.
104	<p>Comment 5</p> <p>The last paragraph of the findings and recommendations under question 4 of the Project Cost, Schedule, and Contingency section on page 22 states, "As noted in Question 2 of this section, in aggregate the completed Regional projects have been completed within the overall approved budgets. However, as reported in the July 21, 2011 BAWSCA Report, 55% of the completed construction projects did not meet their planned substantial completion dates. The performance level of the WSIP cost control function is very good and well within industry norms but further work is needed to</p>	<p>The BAWSCA Report, while referencing construction substantial completion milestones, is reflecting overall preconstruction delays which have occurred and not just the Construction Phase and CM Program delays (i.e. post-construction-NTP delays). A large number of delays in reaching construction substantial completion resulted from delays to construction contract NTPs, which in turn was due to delays in the environmental review or permitting, or other pre-construction issues (i.e., pre-construction delays carried over to construction when looking at overall project schedule, instead of contract-specific schedule). Basing the conclusion applied to the construction phase and CM program on the BAWSCA Report is inconsistent with other findings and conclusions about the effectiveness of the construction program schedule management.</p>	<p>The BAWSCA Report on SFPUC Contract Awards dated July 21, 2011 states that the analysis was based on a review of construction contract awards. In particular, the review was to "evaluate planned construction duration with actual duration for completed projects." Substantial completion was defined as the "length of time from the start of construction ("notice to proceed") to when the project or asset is available for use." Therefore, it appears to be reporting only on construction activity of the 33 completed projects. However, it is noted that the 33 projects included local projects. The Report will be revised to report only on the 15 regional projects of which "four met substantial completion times, three were early (by an average of 64 days), and eight finished late by an average of 110 days or 15 weeks" representing 53% of the 15 regional projects. It would also be noted that the CM Team's Earned Value assessment as reported in the IRP Report indicates that schedule is</p>

	address schedule performance.”		projected to be exceeded for the overall program.
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