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February 3, 2014

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Via Electronic Mail, Telefacsimile and US Mail

Re: Response to SFOBB: Basic Reforms for the Future, Preliminary Report (DeWolk)

Dear Senator DeSaulnier:

The purpose of this letter is first and foremost to correct the inaccuracies and misstatements in "The San Francisco-Oakland Bay Bridge: Basic Reforms for the Future Preliminary Report." As a secondary objective, we hope to offer a deeper analysis and background of events that can be analyzed to create more substantive lessons learned. Due to the amount of time that has elapsed, personnel that have since moved off the project, and sheer volume of decisions that have been made, it will be difficult, if not impossible, to accurately capture the many lessons that could have been learned from this extraordinary project.

I believe my business partner, Mazen Wahbeh, and I are in a unique position to offer insight and perspective into the efforts by Caltrans to assure the quality of the new East Span of the San Francisco-Oakland Bay Bridge. We have each worked on the Bay Bridge for almost 15 years, and our company has been the prime consultant responsible for independent quality assurance inspection for the last three years. We both worked as Principal Engineers for MACTEC until 2008 before founding Alta Vista Solutions, which competed for and eventually won the contract to perform independent quality assurance inspection for Caltrans on the new East Span of the Bay Bridge project.

By the very nature of our entrepreneurial spirit, and because, after leaving MACTEC, we wanted to build a company that could better meet client and project needs, we thoroughly analyzed Caltrans' existing business processes and procedures in attempts to find better ways to assure quality, gain a competitive advantage, and differentiate our company from other consultants who had worked on these kinds of projects. We believe Alta Vista Solutions has been successful in this approach, but that our success has been looked at with both admiration and skepticism. Many acknowledge that our proposed, and eventually implemented, improvements were a validation of an accurate and critical assessment of the challenges associated with assuring quality of a multi-billion dollar transportation project. Others refuse to acknowledge that such

innovation and success can be achieved in today's world without comprising your professional ethics. I appreciate the fact that this is not the time or place to demonstrate to our skeptics that our intentions have been nothing but genuine; nevertheless, in the context of developing lessons learned, I believe it is valuable to understand the central components that contributed to the ongoing and continued success of Alta Vista Solutions.

The Caltrop / Alta Vista team proposed significant changes to the MACTEC way of doing business during the re-compete of the contract to perform the independent quality assurance inspections for the new Bay Bridge project. First, Alta Vista believed that it would only be with complete transparency between METS and Construction that the project had any chance of success. Alta Vista proposed a culture of collaboration and mutual respect where our staff would work together with all of the stakeholders to move the project forward.

Next, Alta Vista understood that the inspection staff in China needed to establish working relationships with the Chinese in order to collaboratively solve the significant challenges of building a self-anchored suspension bridge. A central and necessary component of this strategy was residing all of our staff on the island to eliminate the long commutes and "ferry to ferry" mentality that had developed on the project. Alta Vista also understood the importance of providing accurate and timely inspection data to Caltrans management to provide them with the information they needed to make informed decisions. As such, we implemented new procedures to insulate inspection staff and provide ample time to document inspection results. Finally, we needed to create a culture where staff was empowered to perform the best that they were capable. We created a culture where staff enjoyed coming to work and did not hesitate to do whatever it took to make Caltrans successful. We created a culture of Open Communication, Teamwork, and Strong Relationships (http://altavistasolutions.com/about/) that allowed staff to identify problems and be part of the solution to ultimately improve quality. We strongly believe these are the main reasons Caltrans has continued to select Alta Vista for jobs since we started the company in 2008.

We agree with the Preliminary Report's primary conclusion that "transparency in the affairs of the public is paramount and leads to accountability." However, such transparency and open communication needs to be accomplished through established communication protocols and processes. On a project of this nature, any decision made can impose millions of dollars of costs and significant delays, and while cost and scheduling considerations do not outweigh safety and quality, they must be taken into account on any project built with public funds. In our experience, the best way to accomplish this is to work within an established team structure, in which all team members are encouraged and expected to speak openly, but the team ultimately makes decisions and gives instructions to others (while providing appropriate avenues for members to report concerns about decisions made by the team). When Caltrans and its consultants functioned well in connection with the Bay Bridge, which occurred often, it was through following that structure and process.

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Additionally, we believe the conclusions reached in the Preliminary Report would be different if the author was fully aware of all the facts and background related to specific issues. In order for your Committee to truly understand the challenge of creating transparency in mega-transportation projects, I believe it's important for the Committee to delve deeper into the details of understanding Caltrans' quality management processes.

Blue Tag Procedures Developed to Provide Documentation and Accountability of Decisions

The Preliminary Report focuses much of its attention on the Office of Structural Materials (OSM) within the Materials Engineering Testing Services (METS). The irony of this focus is that OSM completely revamped their material release procedures in November of 2005 to improve "documentation and accountability of material engineering decisions" (Appendix A).[1] While the new material release procedures were received by some with discontent, OSM management pushed forward to create more transparency and accountability of important engineering decisions. Nine years later, it will be these very procedures that provide the documentation that demonstrates that Caltrans fulfilled its obligation to the public and assured that the new East Span of the Bay Bridge was built with the necessary quality.

The new material release procedures have become known within Caltrans and industry as the "Blue Tag Process." Inherent to the process (Appendix B) is the necessity that when an inspector determines material or workmanship is not in compliance with contract documents, a non-conformance must be written (Appendix B – Box 5). Once the noncompliance has been identified, the only way the corresponding material can be incorporated into the work is for the material to be repaired (brought back into compliance with the contract) or for a "Material Suitability Documentation Report, TL-6013" (Appendix A) to be written. The Material Suitability Documentation Report provides a summary of the issue and documents the decisions and communication between the different functional elements within Caltrans (Construction, Design, and METS). This same document also becomes, in part, the basis for resolving the administrative and legal aspects of the contract specifications and agreement with the Contractor, often culminating in a Contract Change Order.

Bay Bridge Documentation Demonstrates Major Inaccuracies in Preliminary Report

A review of various METS engineering reports, non-conformance reports, "Material Suitability Documentation Reports," and other documents related to the fabrication in China illustrates numerous inaccuracies in the Preliminary Report:

[1] All Appendices to this letter are contained on a CD that is provided with the letter.

1) **Page 19, first paragraph**: "Senior Principal Engineer Merrill and his team gave ZPMC a "contingent pass," finding the Chinese company having the infrastructure for the Bay Bridge job, but lacking experience and personnel. Merrill says Caltrans was taking "great risk" in letting ZPMC do the work. "

   Comment: The Preliminary Report fails to include the fact that Mr. James Merrill and Mr. Phil Stolarski conducted a follow-up audit of ZPMC on August 9, 2007. In Mr. Merrill's follow-up audit report (Appendix C), he and Mr. Stolarski recommended changing the ZPMC audit status to "Pass." In the follow-up audit report Mr. Merrill details the corrective actions taken by ZPMC to mitigate the items of risk identified in the initial audit. Mr. Merrill states, "The audit team believes that ZPMC has demonstrated a superior good faith effort to address all previously reported concerns and that there is no need for additional audits of the Changxing Island Facility, in Shanghai, China for the SAS project." Caltrans Construction accepted this recommendation and communicated the revised audit status to the Contractor in State Letter No. 05.03.01-000615 (Appendix D).

2) **Page 19, fifth paragraph**: "More sophisticated quality assurance tests with tools such as Phased Ray [*sic*] Ultrasonic Testing would reveal more."

   Comment: Phased Array Ultrasonic Testing was not specified in the SAS contract documents and is not an accepted non-destructive testing procedure allowed by the American Welding Society (AWS) Bridge Welding Code (D1.5). Furthermore, the use of Phased Array Ultrasonic Testing had already been discussed and considered earlier in the project. It was determined by METS, the Design Team, and Caltrans Construction staff not to utilize the new technology because it was not accepted by AWS and did not have established acceptance-rejection criteria. (Appendix E)

3) **Page 20, second paragraph**: "In May 2008, shortly after this standoff, top Caltrans executives dissolved the separation between quality assurance and construction in what bridge managers call 'Team China.' Caltrans executives instructed MACTEC and Merrill to stop reporting to METS and instead report directly to the construction team, headed by Principal Construction Manager Peter Siegenthaler and Program Manager Tony Anziano. "

   Comment: The change in the reporting relationship was, in part, a result of MACTEC being unable to effectively respond to the project's needs. When I was a Principal Engineer with MACTEC, I documented my frustration with MACTEC's inability to identify and implement effective systems in a January 13, 2008, memorandum to the other Principal Engineers (James Merrill, Mazen

Wahbeh, and John Kinsey) on the project in China (Appendix F). In that memo, I expressed my view that MACTEC had a culture and organization that rendered it unable to "meet the expectations of [Caltrans] with [MACTEC's] organization in China." In large part, that culture and organization was due to the management style of Mr. Merrill, who used a military-style approach (I use that term advisedly, as a graduate of the United States Military Academy at West Point who served in the United States Army and the Corps of Engineers for six years) to control and compartmentalize information. This approach inhibited open communication, as illustrated by the response to my memo: while Dr. Wahbeh and Mr. Kinsey both agreed with my recommendations and looked forward to finally sitting down together and having a real conversation about fixing the flaws in MACTEC's project organization and culture, Mr. Merrill refused to let that conversation happen. He admonished me for not going through proper channels, which was incorrect because I had addressed the memo to only the most senior individuals on the MACTEC project team. This was not an isolated instance of Mr. Merrill acting in a dictatorial manner, in which open communication was affirmatively rejected. This is one reason why I was surprised to find Mr. Merrill as a central figure, and in some ways the suggested hero, of the Preliminary Report. The Preliminary Report correctly calls for transparency, but transparency was not a value that Mr. Merrill promoted while he was actually on the job.

NOTE: Mr. Merrill's reaction to my memo was the turning point for me, which ultimately led me to leave MACTEC. I could not continue to be part of a broken culture. When I resigned from MACTEC, I had no intention of working on the Bay Bridge project; however, when Caltrans decided to re-compete the inspection contract I was confident I could assist in providing Caltrans a better solution, and Alta Vista decided to compete for the new contract.

My memorandum described several other problems with MACTEC's organization, including not having senior people in China, not having a senior person on the island and readily available, and a lack of communication and transparency both within the MACTEC team and to Caltrans Construction. The MACTEC culture in China was ineffective which resulted in non-complying materials and work not being accurately identified and documented in a timely matter. Prior to the change in reporting, MACTEC insisted on holding exclusive meetings in China and California with only METS and MACTEC personnel present. Mr. Merrill would ask Caltrans' Construction employees to leave the room, frequently offending Caltrans staff and driving a wedge further between METS and Construction. The project culture became an "us" (MACTEC) vs. "them" (Caltrans Construction) mentality that reached a boiling point with the start of deck welding when the contractor began receiving inconsistent direction from MACTEC and Caltrans Construction. Mr. Tony Anziano was addressing these issues when he assigned Pete Siegenthaler as the single point of contact for

Caltrans in China. The new reporting relationship and communication protocols were intended to create one team, not two groups working against each other. The success of the project necessitated MACTEC becoming part of the team while still functioning independently.

NOTE: It is worth noting in the new contract with Caltrop/Alta Vista, Caltrans established a formal reporting relationship to METS that started at the end of 2008. METS had staff in China responsible for supervising and verifying the independence of Caltrop/Alta Vista. METS approved engineering reports, recommendations, timesheets, and resource levels. The relationship ensured the Caltrop/Alta Vista team was independent but not isolated from the rest of Caltrans' team in China (Appendix G and H).

Pre-Audit Testing Demonstrates Caltrop/Alta Vista has Necessary Skills and Certification

4) **Page 21, first paragraph**: "An independent pre-audit of Caltrop/Alta Vista by Mayes Testing Engineers found the Caltrop/Alta Vista group not adequately qualified for the job. The Seattle-based Mayes firm also found the Caltrop/Alta Vista staff was not even properly certified. Owner Michael Mayes says he wrote a report for Program Manager Tony Anziano but it "never got out of a draft stage."

Comment #1: The Preliminary Report is inaccurate and false. A memorandum dated December 15, 2008 (Appendix I) transmits Mr. Mayes final report and concludes, "With the exception of one individual, all individuals were found to have the skill and certification for a place within the Caltrop organization chart."

Comment #2: The pre-audit conducted by Mayes Testing Engineers was based on incorrect codes. Instead of basing his examination on the AWS Bridge Welding Code (D.1.5), Mr. Mayes designed an examination based on a code that was not specified in the Caltrop contract, or in any of the Bay Bridge construction contracts for that matter.

Comment #3: Another focus of the pre-audit testing was based on a requirement that was not included in the solicitation documents (Appendix G) associated with the Caltrop/Alta Vista contract. The pre-audit testing was attempting to identify a person within the Caltrop organization to serve as the "Caltrans Outside Level III." There was no requirement for such a person included as part of the contract selection process. However, after the Caltrop/Alta Vista was selected, a suggestion was raised that such a person was needed. During this time, the individual that had been previously working as the "Caltrans Outside Level III" for MACTEC (John Kinsey) reached out to Caltrop for possible employment. Caltrop hired Mr. Kinsey and proposed him as the "Caltrans Outside Level III" after gaining the approval of Caltrans.

5) **Page 21, second paragraph**: "Eventually, Caltrop and Alta Vista hired some suddenly unemployed MACTEC staff … which gave Alta Vista the qualified personnel needed for the job."

Comment: The statement is misleading and inaccurate. As discussed above, the Caltrop/Alta Vista team was qualified, as Mr. Mayes' own report confirmed. That test, moreover, was based on a code not related to the construction of Bay Bridge, an approach to qualification that is not reasonable.

In order to assess whether the examination developed by Mr. Mayes was reasonable, Caltrop hired two previous MACTEC employees that were experienced ultrasonic technicians and held in high regard by Caltrans. Neither individual passed Mr. Mayes' ultrasonic examination (Appendix I). This alerted Caltrans to the issue, that Mr. Mayes' examination was not a reasonable assessment of an inspector's skills, certification, or qualifications for the project.

California Fair Political Practices Commission determines there is no Conflict of Interest

6) **Page 21, third paragraph**: "In 2011, it should also be noted, Principal Construction Manager Peter Siegenthaler resigned from Caltrans and became a high-ranking executive with Alta Vista, where he remains."

Comment: The Preliminary Report makes this statement in a manner that is apparently intended to discredit the open and fair selection of the Caltrop/Alta Vista team in 2008, and even to suggest impropriety by Alta Vista. Such intent is misguided and misplaced. Mr. Siegenthaler retired from Caltrans in 2011, after 28 years of dedicated service and more than three years after participating on the seven-person selection committee that chose Caltrop/Alta Vista. (Mr. Siegenthaler was asked to be on the selection committee in 2011, which chose Alta Vista as the prime contractor; he appropriately declined because he was at that time considering retiring from Caltrans, though he had not spoken with Alta Vista, or to my knowledge any other consultant, about a new job.) After taking some well-deserved time off, he interviewed with and received offers from multiple consultants, including Alta Vista, and eventually accepted Alta Vista's offer of employment. During this time, Mr. Siegenthaler formally requested advice from the California Fair Political Practices Commission regarding the post-governmental employment provisions of the Political Reform Act. The Commission ruled that Mr. Siegenthaler was not prohibited from working for any consultant. (A copy of the determination is publically available at the following website: http://www.fppc.ca.gov/adv/Advice%20Letters/2011/11236.pdf .) It

should be noted that Mr. Siegenthaler has never worked on Bay Bridge project as an employee of Alta Vista Solutions.

MACTEC does not Follow Established Inspection Protocols

7) **Page 22, second paragraph**: Coe and Merrill say Siegenthaler instructed Merrill to use tack weld quality specifications that were also contrary to basic code standards. "Essentially what he was telling Jim (Merrill) was 'don't find cracks.'"

Comment: Mr. Merrill was attempting to fix a fabrication issue without following established processes, procedures, and inspection protocols. This specific issue relates to the inspection of tack welds used in closed rib welding. The fabricator/Contractor was responsible for laying out and marking the starting and ending location of each tack weld on the components being welded. After the subsequent welding was completed, MACTEC was responsible for non-destructively testing the tack weld. Under established inspection protocols, that testing was supposed to be done within the area marked by the fabricator/Contractor as the location of the tack weld.

During the course of fabrication, it was discovered that the fabricator was welding beyond the markings on the steel. The established inspection process and protocols called for MACTEC to document the problem, *i.e.* the fabricator was welding outside the marked lines, in a non-conformance report ("NCR"). The reason for those protocols is to ensure that the process going forward is improved. Put differently, if an inspector determines that welding has occurred beyond the starting and ending points marked on the steel for the tack weld, the inspector should not take it upon himself to inspect outside the marks. Rather, the inspector should prepare an NCR, to identify the fabricator's error in the location of welding, so that error can be fixed. The fabricator must be directed to weld between the marked starting and ending locations, on a consistent basis, so that the inspectors will non-destructively examine the correct areas, on a consistent basis.

Instead of documenting the instances with an NCR, Mr. Merrill wanted to begin inspecting outside the lines – a contentious issue that both Mr. Merrill and Mr. Siegenthaler understood would further deteriorate the relationship between Caltrans and the fabricator/Contractor, and that would not address the problem at its root. Mr. Siegenthaler instructed MACTEC to follow the agreed upon inspection protocols. This was not a direction to "don't find cracks," and it is incorrect to suggest that it was.

Mr. Merrill reported the incident to METS management in a manner that appeared designed to discredit Mr. Siegenthaler. This was unnecessary and inappropriate

in my view. Mr. Merrill could and should have followed the existing inspection protocols and written an NCR. MACTEC was already inspecting tack welds, so additional verification of tack weld length would not have resulted in significant increases to resource requirements (Appendix J). Following this established process would have caused the contractor to correct the issue of welding outside the marked points, so that the welds that Mr. Merrill was concerned about were fully inspected, and that locations of future tack welds were correctly marked so that they also would be fully inspected.

NOTE: An extensive non-destructive examination procedure was developed to detect cracks in tack welds of already completed panels (Appendix K). Again, the suggestion that Caltrans was giving the direction of "don't find cracks" is not correct.

Two Passionate Bridge Engineers Disagree

8) **Page 22, fourth paragraph**: "Even more disconcerting, Coe says, was catching the now CEO of the new quality assurance firm that took over for MACTEC outright 'lying' about inspecting welds that connected the final deck panels – what are called 'super-panels.'"

Comment: Mazen Wahbeh, CEO of Alta Vista Solutions, did not lie. Dr. Wahbeh gave an answer to a question during a conversation that Mr. Coe misunderstood. This conversation occurred during the course of several days of meetings and discussions concerning the different ways to examine welds ultrasonically. Those discussions and meetings included consideration of the use of ultrasonic testing scanning pattern "D" – a scanning pattern that can only be used on welds with a smooth surface (ground flush).

In the course of these discussions, Mr. Coe asked Dr. Wahbeh if the longitudinal deck welds had been inspected with scanning pattern "D." Dr. Wahbeh assumed Mr. Coe was referring to the longitudinal welds that had been ground flush during repairs, segment splices, or other reasons, which Mr. Coe knew was a small percentage of the total, because those are the only portions that could be examined using scanning pattern "D". Dr. Wahbeh responded with a simple "yes;" he did not believe that he needed to specify, to an engineer knowledgeable about the project and the issue, that the more accurate answer was "yes, on those portions that have been ground flush."

Dr. Wahbeh later found out that Mr. Coe interpreted his statement to mean that a much larger percentage of the weld length had been inspected with scanning pattern "D." As pointed out by Mr. Coe during his testimony, this misunderstanding was immediately clarified during the next working day during a project team meeting where longitudinal welds, scanning pattern D, and Lifts 3

and 4 were discussed (Appendix L). Mr. Coe's characterization of the misunderstanding as an "outright lie" misrepresents the discussion, and ignores the fact that his own misunderstanding of Dr. Wahbeh's answer during their conversation was corrected during the subsequent meeting.

I note that this topic was an emotional one for Mr. Coe. Only weeks prior, rather than work with the team organized to discuss such matters, Mr. Coe had issued a letter to the contractor that had to be immediately rescinded. Issuing the letter was not an appropriate action for any number of reasons, including that it could result in millions of dollars of added costs and significant delays, concerning weld repairs that an independent team of world-renowned experts later determined were not necessary.

Deck Sections Taken off Ship and Repaired

9) **Douglas Coe, Senate Hearing Testimony, January 24, 2014**: "I don't know if those things [longitudinal welds] got fixed. "We never got to access to them [Lifts 3 and 4], they were immediately put back on the ship … and so they came to Oakland."

Comment: Mr. Coe's comments during his testimony at the Senate Hearing further suggest that his recollection of the events may have been clouded by his emotions at the time. Instead of choosing to remember that the project team made the decision to remove, re-inspect, and repair Lifts 3 and 4, Mr. Coe appears only able to remember his heated exchange with Mr. Anziano and the clarification of his misunderstanding with Dr. Wahbeh (Appendix L).

It should be noted that the repair of Lifts 3 and 4 (the deck sections with which Mr. Coe was concerned) are documented in Appendix B in the 304-page engineering Project Team Response to QA/QC Expert Panel Recommendations. The entire report chronicles how the project team dealt with the problem of transverse linear indications. The document is publicly available at the following link: http://baybridgeinfo.org/sites/default/files/pdf/UpdatedFinal-QAQC-Rpt-2011Nov-v1.pdf

Mr. Coe's view on this topic has changed dramatically over the years. I happened to be in China with Mr. Coe when the transverse crack issue first became critical in September of 2009. At this time, Lifts 3 and 4 had already been loaded on a ship after being inspected and accepted by Caltrans. During inspections of subsequent lifts, additional information became known that suggested that the inspection of Lifts 3 and 4 may not have identified all of the transverse indications. In preparation for a briefing to Mr. Anziano on September 22, 2009, I assisted Mr. Coe with preparing a presentation providing an overview of the subject (Appendix M). During the course of our preparations, we developed three options for Mr. Anziano to deal with the deck sections (Lifts 3 and 4) that were

already loaded on the ship (Appendix M, slide 21). The most difficult of the options to support was "Option 3: Do nothing." After lengthy and multiple discussions on the topic, including discussion of our responsibilities as licensed professional engineers, we developed nine talking points to assist us in developing our recommendations for Mr. Anziano (Appendix M, slide 42). During this discussion, we mutually agreed that Caltrans should not re-inspect "green-tagged" material (Talking Point #5) – in other words, both Mr. Coe and I could support, as engineers, a decision to not unload Lifts 3 and 4 from the ship.

It surprises me that Mr. Coe has so drastically changed his position on this topic. In September 2009 he was willing to support a decision to not unload and re-inspect Lifts 3 and 4. Now, despite knowing that Lifts 3 and 4 were removed from the ship, re-inspected, and repaired, and despite not being involved in the project for five years, Mr. Coe has chosen to suggest in his statements to the Committee that the engineers involved in the decision-making process should be concerned with losing their professional engineering licenses. I cannot reconcile Mr. Coe's own previous actions, statements, and recommendations, on the one hand, with his current statements to the Committee, on the other hand, except to believe that he has become emotional and angry over this issue as it was closely connected to his removal from the Bay Bridge project.

MACTEC Recommends Anchor Rods be Accepted "As-is" without Additional Testing

10) **Page 25, first paragraph**: "In September 2008, the team found the bolts were not elongated properly and the nuts not adequately hardened. The quality assurance team went back for a second inspection after fabrication began in October and found more of the same problems."
    a. **Comment:** The Preliminary Report is misleading. A non-conformance report was written by MACTEC on September 16, 2008 when Caltrans Transportation Laboratory in Sacramento identified non-compliances during testing (Appendix N). According to documents produced by MACTEC engineers, there is no evidence or reference to a second inspection by the quality assurance team in October. Additionally, MACTEC's inspection records (Appendix O) documented no other issues during fabrication of these rods in particular. Note, the report incorrectly states fabrication began in October. The rods had already been shipped to the jobsite in September (Appendix P).

11) **Page 25, second paragraph**: "In addition, documentation was either missing or incomplete."
    a. **Comment**: Mr. DeWolk's statement is inaccurate. All of the required documentation was provided by the Contractor (Appendix Q)

12) **Page 25, fifth paragraph**: "Bridge managers resolved the situation by changing the specifications on the bolt fabrication contract and then accepted them 'as is.'"
    a. **Comment**: The report is inaccurate. The specifications did not change. Caltrans accepted the material as "as-is" using documentation provided consultants, including MACTEC engineers, Venkatesh Iyer and Markian Petrina: the "Material Suitability Documentation Report" (Appendix O), MACTEC's response to RFI-1524 (Appendix R), and MACTEC's NCR Resolution (Appendix S).

13) **Page 25, sixth paragraph**: "Merrill suggested there be more testing of the bolts if the fabrication was to go ahead. "I got told we weren't doing any testing and to stop mentioning it," Merrill states. "I was basically told to stop bringing it up. That was the end of that." Additionally, during testimony in front of the Senate Committee on January 24, 2014, Mr. Merrill stated, 'the Blue Tag process should have been initiated …'"
    a. **Comment**: The documentation in the project files contradicts Mr. Merrill's statements and testimony and shows that the "Blue Tag Process" was, in fact, initiated, by MACTEC. MACTEC made no suggestions for additional testing. Instead, MACTEC recommended "Accept all material as-is." (Appendix O). It was routine procedure at MACTEC for Mr. Merrill to review such recommendations.

NOTE: Since the failure of the first anchor rods in March, 2013, Caltrans has moved quickly by putting together a fracture analysis report concluding that the 96 rods at Pier E2 Shear Keys S1 and S2 are not suitable for use. Since then, Caltrans has put forth an unprecedented testing program designed by eight experts in the fields of failure analysis, hydrogen embrittlement, metallurgy, corrosion, fracture analysis and galvanizing to determine whether the remaining 2,210 A354BD anchor rods are suitable for their intended purpose. The testing program ranges from simple field hardness testing to complicated stress corrosion cracking tests followed by detailed post fracture analysis. This testing program started in April 2013 and is expected to continue for several months as the experts analyze data and provide their joint recommendation on the condition and usability of these high strength anchor rods. Preliminary data show that there are significant differences between the 2008 failed rods and the rest of the A354BD anchor rods on the bridge.

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Engineering Report on Water Intrusion into the Pedestrian-Bike Path Complete

14) **Page 26, first paragraph**: "Program Manager Tony Anziano says he has little memory of this episode, except that some drainage solution took care of the problem. This is an ongoing issue for this inquiry and subject to further exploration in the coming weeks."
    a. **Comment**: Please find the complete materials engineering report on the "Skyway Bikepath Corrosion Investigation and Evaluation" attached (Appendix T).

The Bay Bridge was built to the highest standards of safety and quality used to date, anywhere in the world. The notion that safety and quality were sacrificed in the interests of scheduling is simply incorrect; if anything, the exact opposite is true. A closer analysis of the schedule and cost impacts due to the unprecedented level of inspection combined with strict design requirements may be warranted. We fully understand the concerns that you, the Committee, and the public have with the costs, delays, and safety questions regarding the Bay Bridge. We applaud the efforts to develop "lessons learned" for application to future projects. We hope that the information provided will remove any doubts regarding safety and quality that the Preliminary Senate Report may have created and move the conversation regarding lessons learned to a more substantive one.

Respectfully,

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