



**CALIFORNIA**  
**High-Speed Rail Authority**

# Project Construction Management Materials Oversight

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August 2017

## EXECUTIVE SUMMARY

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The California High-Speed Rail Authority's (Authority) Audit Office completed an audit of the Project and Construction Management (PCM) team's oversight of construction materials for Construction Package 1. The design-build contract for Construction Package 1 is overseen by the Authority with the assistance of the contracted PCM team. The PCM is responsible, with the Authority's direction, for the management, administration and monitoring of the activities of the design-builder. Among the responsibilities of the PCM is monitoring the design-builder's completed work and work in progress, and reporting to the Authority their findings on the design-builder's conformance with the design build contract.

The objective of our audit was to determine the adequacy of the processes and procedures utilized by the PCM to assure construction materials meet standards and requirements. To accomplish this objective, we interviewed staff, reviewed Authority agreements and the PCM's processes and procedures related to the oversight of Construction Package 1 construction materials.

Based on our audit, the PCM has processes and procedures to oversee that construction materials incorporated by the design-builder meet the standards and requirements of the design-build contract for Construction Package 1. However, we were unable to determine if the oversight is sufficient because the Authority has not established the level of oversight the PCM should provide, particularly, the level of oversight of the design-builder's quality program related to construction materials.

We found the Authority has not held the PCM accountable for fully implementing all aspects of the PCM's Quality Assurance Program such as:

- Conducting internal audits to assure the PCM's Quality Assurance Program is functioning as intended.
- Maintaining a schedule of planned internal and design-builder audits.
- Conducting audits of the design-builder to verify implementation of the design-builder's Quality Management Plan.

The Authority has not required the PCM to implement a statistical sampling program, as contractually required, for monitoring and reviewing the design-builder's implementation of its quality program.

The Authority has not consistently required or approved work plans from the PCM. We found the work plan for fiscal year 2016/17 had not been approved by the Authority.

We recommend the Authority expand its management of the PCM contract to assure the Authority receives the specified services required. In particular:

- The Authority should define the level of oversight to be performed and require the PCM to submit an implementation plan for meeting the defined level of oversight.
- The Authority should assure the PCM implements its oversight plan based on the defined level of oversight.

- The Authority should assure the PCM maintains a schedule of planned audits and conducts periodic internal audits of the PCM's Quality Assurance Program and of the design-builder's Quality Management Plan.
- The Authority should review and approve the PCM's work plan.

## BACKGROUND

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The California High-Speed Rail Authority (Authority) contracted with the design-builder for the design and construction of Construction Package 1. Construction Package 1 was the first design-build contract for the Authority. To assist in overseeing and delivering the complete, safe, and efficient performance of the design-build contract for Construction Package 1, the Authority contracted with the Project and Construction Management (PCM) team.

Under the design-build contract for Construction Package 1, the design-builder is responsible for implementing a quality program. The quality program assures the professional quality, technical accuracy, and coordination of all surveys, designs, drawings, specifications, geotechnical investigations, construction, manufacturing, installation, and other services furnished under the Construction Package 1 contract, including the warranty service element. Furthermore, the quality program includes comprehensive quality control and quality assurance procedures. The design-builder's quality program is detailed in the Quality Management Plan. Per the Quality Management Plan, the design-builder has the primary responsibility for overall quality assurance, quality control, verification, and validation for both the design and construction elements of the project to be completed within Construction Package 1.

The PCM is responsible for monitoring, managing, tracking, and reporting on performance and deliverables of the design and construction of Construction Package 1, specifically oversight of quality, verification and validation, and self-certification.

The Quality Assurance Manual describes the PCM's roles and responsibilities. The responsibilities include reviewing the design-builder's quality assurance and quality control plans and monitoring the implementation of the construction through onsite audits and surveillances, e.g., performing and documenting field visits, assuring via observation, testing, and surveillance that the design-builder is constructing the project in accordance with the requirements of the design-build contract.

During our audit, we observed the PCM's oversight processes for reviewing designs, documenting materials certificates of compliance, and observing and monitoring construction sites.

## SCOPE AND METHODOLOGY

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The audit scope included the PCM's oversight of construction materials processes for Construction Package 1 initially for the period June 1, 2015 to February 29, 2016; however, the scope was revised to the period April 1, 2016, to November 30, 2016. The revision was made to to assure we had a scope that included a period in which construction was occurring. The objective of our audit was to determine if processes and procedures utilized by the PCM are adequate to assure construction materials meet standards and requirements. To accomplish this objective, we conducted:

- Interviews of Authority and contracted staff involved in the design-build oversight to identify key roles associated with the design-build oversight process.
- Reviews of executed Authority agreements:
  - HSR13-06 with Tutor/Perini/Zachary/Parsons (Design-Builder).

- HSR11-20 with Wong Harris (Project and Construction Management).
- Reviews of processes and procedures related to the oversight of the design-build contract.

The audit took place in the Sacramento and the Central Valley Regional offices. We concluded our fieldwork on May 1, 2017. Changes after this date were not considered, and accordingly, our conclusion does not pertain to changes arising after May 1, 2017. On June 9, 2017, the results of our audit were discussed with management. A response from the Infrastructure Delivery Office was received and is attached to this report.

Our audit was conducted in accordance with the International Standards for the Professional Practice of Internal Auditing issued by the Institute of Internal Auditors.

## RESULTS AND RECOMMENDATIONS

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Based on our audit, the PCM has processes and procedures to oversee that the construction materials incorporated by the design-builder meet standards and requirements of the design-build contract for Construction Package 1. However, we were unable to determine if the oversight is sufficient because the Authority has not established the level of oversight the PCM should provide, particularly, the level of oversight of the design-builder's quality program related to construction materials.

### **Finding 1**

The Authority has not held the PCM accountable for fully implementing all aspects of the PCM's Quality Assurance Program such as:

- Conducting internal audits to assure the PCM's Quality Assurance Program is functioning as intended and that personnel are properly implementing their responsibilities (e.g., observations, testing, surveillance, processing of design changes, problem identification and resolution, maintaining required quality documentation).
- Maintaining a schedule of planned internal PCM and design-builder audits.
- Conducting audits of the design-builder to verify implementation of the design-builder's Quality Management Plan, which should include an inspection and testing program, and a problem identification and resolution process.

Section 1.2 of the Quality Assurance Manual stipulates that the Quality Oversight Manager for the PCM is responsible for conducting internal audits of the PCM's quality assurance program. Furthermore, the Quality Oversight Manager is also responsible for conducting audits of the design-builder to verify implementation of the design-builder's quality management plan.

### **Finding 2**

The Authority has not required the PCM to implement a statistical sampling program, as contractually required, for monitoring and reviewing the design-builder's quality program.

Exhibit A, Section IV.A, of the PCM contract stipulates that the PCM develop and implement, upon Authority approval, a Quality and Management System that includes a statistical sampling program.

### **Finding 3**

The Authority has not consistently approved work plans from the PCM. We found the work plan for fiscal year 2016/17 had not been approved by the Authority.

Exhibit A, Section II.D, of the PCM contract requires the PCM to submit a semi-annual or annual work and staffing plan to be approved by the Authority.

### **Recommendations**

The Authority should expand its management of the PCM contract to assure it receives the specified services requirements. In particular:

- The Authority should define the level of oversight to be performed and require the PCM to submit an implementation plan for meeting the defined level of oversight.
- The Authority should assure the PCM implements its oversight plan, including a materials testing plan that clearly identifies the processes and procedures the PCM will follow for assuring the design-builder is utilizing construction materials that meet the standards and requirements of the design-build contract for Construction Package 1.
- The Authority should assure the PCM maintains a schedule and conducts periodic internal audits of the PCM's Quality Assurance Program and of the design-builder's Quality Management Plan, documenting such audits accordingly and in compliance with the PCM's Quality Assurance Manual.
- The Authority should review and approve the PCM's annual work plans.

### **Analysis of Response to Draft Audit Report**

The Infrastructure Delivery Office agreed with all the audit recommendations offered in the draft report. The Audit Office erroneously reported that we found the PCM's work plan for 2015/2016 was not approved. We found that only the 2016/2017 work plan was not approved. The Infrastructure Delivery Office provided support showing that the PCM submitted a proposed 2016/2017 work plan. The Design and Construction Manager provided comments on and a directive for changes to the proposed work plan but gave no explicit approval of the work plan.



# CALIFORNIA High-Speed Rail Authority

## Memorandum

**DATE:** July 27, 2017

**TO:** Ms. Paula Rivera, Chief Auditor

**FROM:** Joe Cazares, Acting Director of Infrastructure Delivery 

Jon Tapping, Acting Chief Operating Officer  
Roy Hill, Chief Program Officer

**CC:** Scott Jarvis, Chief Engineer

**SUBJECT:** Program Delivery Response to Draft Audit Report 15-07, Project Construction  
Management Materials Oversight

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The Authority's Infrastructure Delivery Office is in receipt of the draft report of the Authority's Project Construction Management (PCM) Materials Oversight for Construction Package (CP) 1. The Authority's Audit Office found that the audit objective was met and that the processes and procedures utilized by the PCM to assure construction materials are adequate.

In regards to the recommendations provided with this audit, the Infrastructure Delivery Office concurs with the recommendations and provides the following responses:

**Recommendation 1:** *The Authority should define the level of oversight to be performed and require the PCM to submit an implementation plan for meeting the defined level of oversight.*

**Response to Recommendation 1:** The Infrastructure Delivery Office agrees with this recommendation. The PCM is required to develop and implement a verification, validation and self-certification oversight process. The Infrastructure Delivery Office will ensure that there is enough detail in that process and that the PCM is meeting the defined levels of oversight.

**Recommendation 2:** *The Authority should assure the PCM implements its oversight plan, including a materials testing plan that clearly identifies the processes and procedures the PCM will follow for assuring the design-builder is utilizing construction materials that meet the standards and requirements of the design-build contract for Construction Package 1.*

**Response to Recommendation 2:** The Infrastructure Delivery Office agrees with this recommendation and will ensure that the PCM continues to adhere to the requirements of their Quality Assurance Manual (QAM). The QAM details the PCM requirements to assure that the project is constructed to meet the approved designs and construction documents.

**Recommendation 3:** *The Authority should assure the PCM maintains a schedule of planned audits and conducts periodic internal audits of the PCM's Quality Assurance Program and of the design-builder's Quality Management Plan.*

**Response to Recommendation 3:** The Infrastructure Delivery Office agrees with this recommendation and will ensure that the PCM is conducting audits in conformance with contract requirements. The PCM conducted informal audits but did not have a planned schedule nor did they perform these audits on a regular basis. The PCM will submit an audit plan to the Infrastructure Delivery Office's designee for all formal audits and ensure that a schedule is included.

**Recommendation 4:** *The Authority should review and approve the PCM's work plan.*

**Response to Recommendation 4:** The Infrastructure Delivery Office recognizes the importance of the PCMs annual work plans. The annual work plans for each fiscal year's identified in the audit report were submitted by the PCM and approved or accepted by the contract manager. The Infrastructure Delivery Office will ensure that the annual work plans and the subsequent Authority approvals are better documented in the contract files.

If you have any further questions, please contact Joe Cazares, Acting Director of Infrastructure Delivery, at (619) 753-0232 or [Joeseeph.Cazares@hsr.ca.gov](mailto:Joeseeph.Cazares@hsr.ca.gov).