



City of Phoenix

**Mission Statement**

To improve the quality of life in Phoenix through efficient delivery of outstanding public services.

**Project Team**

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**Project Number**

1240025

This report can be made available in alternate format upon request.

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**Aviation Department  
CIP Contract Audit – Alstom Transport**

**June 26, 2024**

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***Report Highlights***

**Payments**

*The total payments matched the contracted amount. No items were billed more than once. All payment requests were appropriately reviewed and approved.*

**Change Orders**

*Change orders were appropriately approved, and all payments were made after change order approvals and for the correct amounts.*

**Scheduling Monitoring**

*Scheduling delays appeared to be properly tracked, and concerns were brought up in meetings with Alstom.*

**Liquidated Damages**

*Liquidated damages were received in the form of additional work performed at no cost. This was agreed to by all parties.*

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## **Executive Summary**

### **Purpose**

Our purpose was to determine that Alstom Transport complied with contract terms and that Aviation staff, and their representatives, were adequately monitoring the contract.

### **Background**

In July 2009, the Aviation Department (Aviation) entered into a contract with Alstom Transport (Alstom), then Bombardier Transportation, for construction of the Phoenix Sky Train. Amendments 1 and 2 dealt with the initial construction and Stage 1 extension of the Sky Train. In this audit, our scope was Amendment 3. Amendment 3 began in March 2018, for the construction of the Stage 2 Extension of the PHX Sky Train (amendment 3). The contracted amount was for \$304,602,830. The work was to be substantially completed (the point when the Sky Train would be usable) no later than June 1, 2022, and finally completed no later than December 1, 2022.

The contract was split into two different projects: General Conditions (herein referred to as Category 1, or Cat1) and Special Provisions (herein referred to as Category 2 or Cat2). Aviation contracted with Lea + Elliott (LE) to serve as the owner's representative and project manager. All phases of the project were reviewed by LE to ensure satisfactory completion, prior to being approved by Aviation staff.

Aviation determined the project to be substantially completed effective February 28, 2023, and finally completed effective March 7, 2024, with a final project cost of \$306,750,578.

We reviewed the contract to determine that Aviation staff were properly monitoring the contract terms, specifically in the following areas:

- Payments were accurately supported, and no items were billed multiple time.
- Change orders made to the contract were properly approved prior to payments made.
- Penalties for delays were appropriated calculated and levied.
- Construction progress was regularly monitored, including scheduling tracking.
- Final closeout documentation was received by Aviation.
- Alstom had appropriate insurance levels, per contract requirements.

### **Results in Brief**

**The total payments matched the contracted amount. No items were billed more than once. All payment requests were appropriately reviewed and approved.**

We reviewed all 119 payment requests and compared them against each individual item on the schedule of values and verified that no items were billed more than once. We also verified that the total amounts of the payment requests matched the contracted amount, including change orders. All requests were also reviewed and approved by LE and Aviation staff prior to being paid.

**Change orders were appropriately approved, and all payments were made after change order approvals and for the correct amounts.**

There were five change orders made to this contract during the project. We verified that each change order was properly approved. Two of the change orders included additional costs. We verified that the payments for these costs were made after the change orders had been approved. Payments made did not exceed the amounts of the change orders.

**Liquidated damages were received in the form of additional work performed at no cost. This was agreed to by all parties.**

Liquidated damages were assessed due to the project not being completed by the original substantial completion date. In lieu of monetary fees, Aviation and Alstom agreed for additional work to be performed at no additional cost. Both sides agreed to the amount of work being sufficient to cover the calculated damages.

**Meeting notes appeared to be comprehensive. Progress concerns were discussed on successive meetings until being resolved.**

We reviewed meeting notes for two different sets of meetings, one monthly and one bi-weekly, for 2020 and found the notes appeared to be thorough and contained sufficient information to indicate that items were being continuously reviewed.

**Scheduling delays appeared to be properly tracked, and concerns were brought up in meetings with Alstom.**

We reviewed the monthly meetings between Aviation and Alstom that reviewed construction progress as it relates to scheduling delays. The information provided included timing for individual work and how it impacted the overall project, including tracking delays to substantial completion. Aviation was properly tracking the delays and appeared to be sufficiently following up on noted delays in work.

**Most items expected from Alstom were delivered. However, at least one item was found to be mislabeled and two other items were not updated as required.**

We obtained items that were required from Alstom prior to closing out the project, including operations manuals, maintenance plans, and training programs. We also verified that LE had reviewed and approved the items. We found two items that had been rejected by LE but were never re-submitted by Alstom. We also found one item was uploaded but with the incorrect name. The two items were delivered by Alstom upon our request. Aviation staff were going to have LE review the tracking log to verify that no other items were missing or incorrectly labeled.

**Alstom had appropriate insurance coverage through substantial completion for all areas except workers compensation.**

We reviewed insurance requirements and obtained insurance documents and found that Alstom had appropriate insurance coverage for builder's risk and pollution liability through at least the opening of the Sky Train in December 2022, and had general commercial liability and automobile liability insurance through final completion in March 2024, as required. Alstom also had workers compensation coverage through final completion, except there was no evidence of coverage for the year from February 1, 2020 through February 1, 2021.

## Department Responses to Recommendations

<b>Rec. #2.1:</b> Ensure that Lea + Elliott completes the review of the tracking log and resolve any pending issues discovered during their review.	
<b>Response:</b> Lea+Elliott is conducting a final review of all submittals and deliverables to ensure that all contractual documents were received and accepted and that they are properly logged in Unifier. Lea+Elliott will submit a letter of verification along with a submittal log confirming disposition of all project documents.	<b><u>Target Date:</u></b> July 19, 2024
<b>Rec. #2.2:</b> Review and improve close-out processes to ensure that all required documents are received, approved, and appropriately linked on all future construction projects.	
<b>Response:</b> The submittal log referenced in Rec. 2.1 above will be utilized during the next phase of the project to monitor submittal status, acceptance and close out. Review of the log will be incorporated into the project status review meetings for continuous monitoring. We will also include this as part of the Final Acceptance required documentation.	<b><u>Target Date:</u></b> July 19, 2024

# **1 – Payments**

## **Background**

The contract uses a schedule of values for billing. This is a table of all tasks with their initial estimated completion period and agreed-upon cost. Tasks have unique activity IDs. Each request for payment included:

- A cover sheet that showed a summary of charges based on task category.
- The specific tasks that were included in the payment request.
- The total amount of the request.
- Supporting documentation to validate the work was completed.
- A review and approval from the contracted project manager, Lea + Elliott (LE).

The contract was split into two different projects: General Conditions (Category 1, or Cat1) and Special Provisions (Category 2 or Cat2). All phases of the project were reviewed by LE to ensure satisfactory completion, prior to being approved by Aviation staff. Separate payment requests were made for Cat1 and Cat2 fees. There were 62 payment requests for Cat1 and 57 payment requests for Cat2, totaling 119 payment requests. We reviewed each payment request to validate that the total billed matched the contracted amount, that no individual tasks were billed more than once, and that all applications were properly reviewed and approved.

## **Results**

***The total payments matched the contracted amount. No items were billed more than once. All payment requests were appropriately reviewed and approved.***

The total amount paid to Cat1 was \$168,267,620 and to Cat2 was \$138,394,846. The total paid of \$306,662,466 was \$88,112 less than the final cost of \$306,750,578. This difference was due to costs incurred by Aviation due to two system shutdowns on 9/27/23 and 10/11/23, resulting in \$88,112 in costs. This amount was deducted from the total contracted amount, resulting in the correct amount being paid to Alstom.

We reviewed the subtotals for each WBS on each of the 119 payment requests and obtained Excel copies of the individual activity IDs billed on each payment request. We compared the subtotals from the Excel copies and checked for duplicate entries. The only instances where an item appeared on multiple Excel copies were when the Excel copy was a preliminary copy. For each instance, we reviewed the final payment request and validated that no items were billed more than once.

Each payment request had supporting documentation, including photos, emails, invoices, etc., and was verified and approved by LE prior to being paid.

We did not find any exceptions.

## Recommendations

None

## **2 – Scheduling and Project Monitoring**

### **Background**

The project was scheduled based on estimates for how long it would take to complete each aspect of the construction, fitting within the substantial completion date of June 1, 2022, and final completion date of December 1, 2022. Progress was tracked and updates were given through meetings involving various contractors and Aviation staff.

Monitoring also included ensuring that Alstom submitted required items. Items included evidence of completion for payment requests and insurance documentation, as well as other items for project close out, such as training programs and maintenance manuals.

We reviewed meeting notes between Alstom and Aviation regarding work progress and scheduling, to determine that delays were being monitored and tracked. We also reviewed project closeout deliverables to determine that Alstom had delivered them. We focused on meetings from calendar year 2020 when the project fell substantially behind schedule.

### **Results**

**Meeting notes appeared to be comprehensive. Progress concerns were discussed in successive meetings until being resolved.**

We reviewed meeting minutes from the monthly system project coordination meetings for each month in 2020. Staff representing Aviation, LE, and Alstom were present at each meeting. Meeting minutes stated project progress, including photos of work performed, and included items that required action. We noted multiple instances where action items were tracked through successive months, indicating that staff were ensuring completion.

We also reviewed bi-weekly shared access meetings from 2020 that included staff from Aviation, LE, Alstom, and other contractors working in the shared construction zone. These meetings used the same template as the monthly project coordination meetings and contained all of the same information. We found that items requiring action were tracked on each meeting.

Lastly, we performed a review of weekly meetings hosted by The Weitz Company (Weitz), a subcontractor of Alstom, during 2020. We noted that these meeting minutes used a different template that included a section stating all of the action items from the prior month and their status. Adding such a section to Aviation's meeting minutes template could be beneficial for tracking open issues as it would more easily highlight how long items have been open and more clearly indicate when items have been completed. However, the current method used by Aviation appeared sufficient.



**Scheduling delays appeared to be properly tracked, and concerns were brought up in meetings with Alstom.**

Aviation contracted with Ritter Project Management (Ritter) to assist with tracking the overall schedule to determine when delays in one area might cause delays in the overall project. We reviewed all submissions from Ritter from June 2018 through May 2023. Monthly submissions included a meeting presentation from Alstom on their progress with feedback on items from Ritter on how delays would impact overall progress via a “float analysis” that detailed how many days beyond the contracted substantial completion date the project was estimated to take. There was also a memo sent directly to Aviation, who also attended these meetings, summarizing the monthly discussions.

Overall, we found that the updates were occurring monthly, and that the progress was adequately tracked with updates on progress noted. We also found feedback given to Alstom on areas of concern and areas where time could be made up. Overall, the process appeared to sufficiently notify Aviation staff of the project’s progress.

**Most items expected from Alstom were delivered. However, at least one item was found to be mislabeled and two other items were not updated as required.**

The Special Provisions section of the contract detailed multiple items that were required to be submitted to Aviation prior to project completion. These items included operating and maintenance manuals, training programs, and management plans. We reviewed each item to verify that Alstom had delivered them and that Aviation had accepted them.

Most items had been delivered and had an associated letter from LE stating that the item was acceptable as final. However, two items that were submitted as part of the maintenance manual were returned to Alstom as needing additional changes. One item was returned to Alstom on August 15, 2022 and the other on September 8, 2022. Aviation did not receive updated versions, but when we requested them, Alstom provided the items in May 2024. Aviation staff reviewed the deliverables and determined they were acceptable. Aviation staff noted they had been missing and were not identified during review.

We also found one additional item related to system compliance document that was uploaded but was submitted with other documents and not individually. As a result, it was not properly linked to previously submitted documents, leading to potential traceability issues in the future.

Due to these issues, Aviation staff asked LE to review the tracking log to validate all items expected were received, complete, and properly labeled. Aviation staff should ensure that LE completed the review and that any issues found during the review are resolved. Aviation staff should also develop or improve their processes to ensure that future projects are also adequately reviewed prior to close out.

## **Recommendations**

- 2.1 Ensure that Lea + Elliott completes the review of the tracking log and resolve any pending issues discovered during their review.
- 2.2 Review and improve close-out processes to ensure that all required documents are received, approved, and appropriately linked on all future construction projects.

### **3 – Liquidated Damages**

#### **Background**

The contract provided for Aviation to claim liquidated damages should the project not be substantially completed by June 1, 2022. The amount specified in the contract was \$44,000 per calendar day beyond June 1, 2022. The substantial completion date achieved was February 28, 2023, allowing Aviation to require Alstom to pay the calculated liquidated damages.

We verified that damages were calculated correctly, and that Aviation received the correct amount.

#### **Results**

**Liquidated damages were received in the form of additional work performed at no cost. This was agreed to by all parties.**

Aviation staff properly calculated the liquidated damages based strictly on the number of days the substantial completion was delayed. However, due to this project being partially delayed due to the COVID-19 pandemic, Aviation agreed to work with Alstom on a mutually beneficial solution. Aviation and Alstom agreed for Alstom to perform additional work, in the form of upgrades to the maintenance and storage facility, upgraded vehicle signage, and activation of the 4<sup>th</sup> berth at each Sky Train station, at no additional cost. All parties agreed to this action with Change Order 14. This additional work for the liquidated damages was completed by March 2024.

#### **Recommendations**

None

## **4 – Insurance and Change Orders**

### **Background**

The contract specified insurance levels for Alstom, and any of Alstom’s subcontractors. These requirements detailed the type of insurance needed as well as the coverage amounts.

The contract also stipulated how change orders are approved and that they should be approved prior to any payments being made for that work.

We obtained insurance certificates for Alstom and its subcontractors. We reviewed the dates of the policies to verify that there was continuous coverage. We reviewed the policy amounts to verify that they met contract requirements. We also reviewed the change orders to verify that they were approved and that no payments were made to the change orders prior to their acceptance.

### **Results**

#### **Alstom had appropriate insurance coverage through substantial completion for all areas except workers compensation and builder’s risk.**

The General Provisions section of the contract detailed the insurance requirements. Insurance included general commercial liability, automobile liability, builders’ risk, workers compensation, and pollution liability. Insurance certificates were attached to each payment request. We obtained each certificate and verified the amounts met or exceeded required amounts, and that there was full continuous coverage for the life of the work.

We found that Alstom had sufficient coverage for general commercial liability and automobile liability through final completion in March 2024. Alstom had coverage for pollution liability and builder’s risk through at least December 2022, when the Sky Train began operation. Alstom had worker’s compensation insurance also through final completion in March 2024, except we were unable to locate proof of insurance from February 1, 2020, through February 1, 2021. Having insurance coverage is important to ensure protection in the event of accidents. Aviation will include this missing documentation in their review of their tracking processes.

#### **Change orders were appropriately approved, and all payments were made after change order approvals and for the correct amounts.**

The first 10 change orders to the contract were for prior construction stages outside the scope of this audit. For Amendment 3, there were five change orders made toward this contract. They are summarized in the table below.

## Change Order Summary

Change Order Number	Scope	Amount	Effective Date
11	Additional Work + Cost	\$297,748	April 20, 2020
12	Additional Work + Cost	\$1,850,000	October 1, 2021
13	Time Only	N/A	November 1, 2022
14	Additional Work (No Cost)	N/A	March 1, 2023
15	Time Only	N/A	December 1, 2023

**Total cost added from change orders was \$2,147,748.**

Each of the five change orders were appropriately approved and had all required signatures. Two change orders, 11 and 12, included additional costs. The costs from change order 11 were paid on payment request 28 Cat1 and 28 Cat2, which were both for April 2020. The costs for change order 12 were paid across seven different payment requests, starting with payment request 45, which was for November 2021. All payment requests had documentation to support the payment of the costs and were reviewed by LE prior to being paid.

### Recommendations

None

## **Scope, Methods, and Standards**

### **Scope**

We reviewed Aviation's monitoring of Contract #126230, Amendment 3, with Alstom Transportation from when it began in March 2018 through the completion in March 2024.

The internal control components and underlying principles that are significant to the audit objectives are:

- Control Environment
  - Management should establish an organizational structure, assign responsibility, and delegate authority to achieve the entity's objectives.
- Control Activities
  - Management should design control activities to achieve objectives and respond to risks.
  - Management should implement control activities through policies.
- Information & Communication
  - Management should use quality information to achieve the entity's objectives.
  - Management should internally communicate the necessary quality information to achieve the entity's objectives.
- Monitoring Activities
  - Management should establish and operate monitoring activities to monitor the internal control system and evaluate the results.

### **Methods**

We used the following methods to complete this audit:

- Interviewed Aviation staff.
- Reviewed contract documentation, including change orders.
- Reviewed insurance documents.
- Reviewed payment requests, matching requests to payments the City's financial system, SAP.
- Reviewed meeting notes.
- Reviewed project close-out documents.

Unless otherwise stated in the report, all sampling in this audit was conducted using a judgmental methodology to maximize efficiency based on auditor knowledge of the population being tested. As such, sample results cannot be extrapolated to the entire population and are limited to a discussion of only those items reviewed.

## **Data Reliability**

The SAP data used in this audit was previously determined to be reliable through an independent audit review.

## **Standards**

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. Any deficiencies in internal controls deemed to be insignificant to the audit objectives but that warranted the attention of those charged with governance were delivered in a separate memo. We are independent per the generally accepted government auditing requirements for internal auditors.