

INTERNAL AUDIT REPORT

LIMITED OPERATIONAL AUDIT – CAPITAL PROGRAM

RUNWAY 16C-34C RECONSTRUCTION PROJECT

2015 CONSTRUCTION ACTIVITIES

ISSUE DATE: MAY 9, 2016
REPORT NO. 2016-09

EXECUTIVE SUMMARY

AUDIT OBJECTIVES AND SCOPE

The purpose of the audit was to ensure that:

1. The contractors have complied with key contract deliverables such as:
 - providing materials of the specified quality and quantity, including quality control
 - meeting affirmative action goals
 - meeting apprenticeship goals
 - paying wage rates per the Project Labor Agreement (PLA)
 - complying with safety and operational requirements

2. Management controls were adequate to ensure that:
 - the terms and conditions of the applicable FAA grant are met
 - change orders are appropriately authorized
 - status and regulatory reporting is accurate and timely
 - work oversight and inspection is adequate

Details of our audit’s scope and methodology are on page 3.

BACKGROUND

This capital construction project includes reconstruction of 9,426 foot Runway 16C - 34C, the center runway, and portions of interconnecting taxiways. Related work includes pavement demolition, excavation, grading, Portland cement concrete and asphalt paving, storm drainage, water mains and flush fire hydrants, electrical duct-banks, LED airfield lighting systems and guidance signs, an automated electronic Foreign Object Debris (FOD) detection system, and other miscellaneous work.

AUDIT RESULT

The contractors have complied with the key contract deliverables. Management controls over the construction project were adequate.

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TRANSMITTAL LETTER

Audit Committee
Port of Seattle
Seattle, Washington

We have completed an interim audit of the Runway 16C-34C Reconstruction project.

We conducted this performance audit in accordance with Generally Accepted Government Auditing Standards and the International Standards for the Professional Practice of Internal Auditing. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis of 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.

We extend our appreciation to the management and staff of Capital Development Division and Central Procurement Office, and the prime contractors, for their assistance and cooperation during the audit.

A handwritten signature in black ink that reads "Kirangi".

Joyce Kirangi, CPA, CGMA
Internal Audit, Director

AUDIT TEAM	RESPONSIBLE MANAGEMENT TEAM
Brian Nancekivell, Sr. Auditor	Wayne Grotheer, Director, AV PMG Janice Zahn, Asst. Director, Engineering Nora Huey, Director, CPO

BACKGROUND

This capital construction project includes reconstruction of 9,426 foot Runway 16C - 34C, the center runway, and portions of interconnecting taxiways. Related work includes pavement demolition, excavation, grading, Portland cement concrete and asphalt paving, storm drainage, water mains and flush fire hydrants, electrical duct-banks, LED airfield lighting systems and guidance signs, an automated electronic Foreign Object Debris (FOD) detection system (2nd such system installed in the USA), and other miscellaneous work.

This was the first reconstruction of the runway since it was originally built in 1969. It was designed with a 20-year lifespan and, after nearly 46 years, needed to be replaced. Over the course of the last 20 years, 600+ panels (out of 4,000) have been replaced to keep the runway operational.

The newly constructed runway contains 8 inches of crushed rock sub-base, 4 inches of asphalt and 18 inches of Portland cement concrete. It includes more than 4,000 panels, each 20 by 18.75 feet in size. While Group 5 runway standards require 35-foot shoulders, the Port chose to incorporate 50-foot shoulders to allow the runway to accommodate larger aircraft in the future.

Airport staff designed the reconstruction project. A joint venture of Scarsella Brothers & Acme Paving executed the design as general contractors under a unit price contract. The contractors are paid based on progress completed.

The construction happened in phases along the runway so as to always have crossing taxiways open on each end of the runway. The FAA, as always, manages the use of the two operational runways.

Reconstruction did not impact flight schedules, passenger traffic, or any other airport operations. During the reconstruction all air operations (takeoffs and landings) were directed to the airport's two adjacent runways. Nearly 1,000 daily operations occur on the airfield and detailed plans were developed to minimize conflicts between construction activities and aircraft operation.

This project included extensive recycling of materials including using the old runway concrete being crushed and reused for a base material. Further environmental stewardship included airfield LED lighting installed for greater energy efficiency and less maintenance.

The project budget was \$106.5 million. The estimated project cost is \$80 million. The project is still in progress. The Port was approved for \$25 million in FAA grants. The remaining funding was allocated from Airport Development Funds and future revenue bonds.

HIGHLIGHTS AND ACCOMPLISHMENTS

During the course of the audit, we observed the following effective and efficient management practices:

- The project to date has been under budget - \$11.7 million was returned to overall capital program in March 2015 and \$10 million returned to overall capital program in December 2015. That is a \$21.7 million in savings realized to date.
- There were no operational incidents and no incursions – despite challenging demolition and construction work in the middle of an active airfield.
- The contractors exceeded the apprenticeship and affirmative action goals, providing higher paying construction jobs for women and minorities.
- Oversight by Engineering ensured that the contractors and sub-contractors paid the appropriate PLA wage rates, which were higher than the prevailing wage rates.
- Potential quality issues with the concrete for the runway were identified early in the project and satisfactorily resolved, with a resulting unavoidable delay in the schedule.
- There was active and close co-ordination with the FAA who was responsible for some of the construction and for certifying that navigation equipment was properly functioning.

AUDIT SCOPE AND METHODOLOGY

This is an interim audit as the project is still in progress. There is additional construction on both the inboard and center runways scheduled for 2016.

This is a limited scope audit of contract management (execution) phase of the Runway 16C-34C Reconstruction project. It did not include all contract deliverables or requirements. There are several major phases in the Capital Project Lifecycle. This audit did not include the phases of Pre-Feasibility/Feasibility & Planning, Resource Allocation & Commitment, Contractor Selection or Project Financials. Further audit work will be done on Contract Management and the Post-Completion phases of Commission & Turnover and Maintenance, as they occur.

We audited the construction phase, not the design, of the project, and only activity in 2015. This project has been intermittently underway several years.

The audit is focused on the contractors and those groups directly involved in contract management, namely Aviation Project Management Group and Construction Management (Engineering) of the Capital Development Division, and Central Procurement Office. There are numerous other Port departments and groups and the FAA involved in the project that are ancillary to this audit. This audit did not include an audit of the project management process.

To ensure that the contractors complied with key contract deliverables, we:

- reviewed the applicable records of sub-contractors and suppliers at the prime contractor for materials of the specified quality and quantity. Detailed audit testing was deferred until the Close-out phase of the project.
- reviewed affirmative action reporting and apprenticeship utilization for the two prime contractors for June-August 2015, the major construction period, and tested the accuracy of the reporting by reviewing the applicable personnel records at one of the prime contractors
- reviewed Collective Bargaining Agreement wage rates, as required by the Project Labor Agreement, and tested wage rates for all employees of the two prime contractors and six sub-contractors for June-August 2015
- reviewed safety reporting and the safety program
- interviewed airport operations for any operational incidents or incursions.

To ensure management controls over the construction project were adequate, we:

- reviewed the terms and conditions of the applicable FAA grant and assessed compliance with those requirements
- reviewed change orders and tested that the only large dollar one was appropriately authorized
- observed status meetings and reviewed status reports
- reviewed regulatory reporting for any environmental issues
- observed on-going work oversight and inspection during construction.

CONCLUSION

The contractors have complied with the key contract deliverables. Management controls over the construction project were adequate.