Performance Audit:
Aviation Capital Projects

April 2024

City Auditor's Office

City of Atlanta

File #23.06

Why We Did This Audit

We undertook this audit because the Atlanta City Council expressed concerns about the status of the Atlanta Police Department's precinct at the Hartsfield-Jackson Atlanta International Airport. City Council adopted Ordinance No. 22-R-4261, requesting that the City Auditor's Office audit the previous five years of construction expenditures and the condition of the police precinct after spending slightly over $1 million to renovate the precinct in 2020.

What We Recommended

To align policies and procedures with best practices, the airport general manager should ensure that Planning and Development staff:

- formalize design-to-cost and mobilization/demobilization methodologies
- update design review and closeout policies, reinforce staff participation in safety training programs

To ensure project files are available for review, the airport general manager should:

- ensure safety and health plans are approved before construction
- route project closeout checklists through PMWeb for approval

To ensure policies and procedures are updated to reflect current practices, the airport general manager should:

- update change management policies
- develop a schedule for annual reviews

To apply project management tools according to contract terms and program procedures, the airport general manager should:

- ensure safety non-compliance forms are approved
- ensure projects are closed out timely in PMWeb
- ensure operations and maintenance manuals and activation plans are in accordance with contract terms

To avoid potential conflicts of interest regarding project management decisions, the airport general manager should:

- direct the assistant general manager to seek advice from the Ethics Office when potential conflicts occur

For more information regarding this report, please use the "contact" link on our website at www.atlaudit.org

Performance Audit:

Aviation Capital Projects

What We Found

Aviation's Planning and Development staff has developed detailed policies and procedures that generally follow best practices for capital project management. The procedures provide project teams with a project management framework that addresses relevant risks. Staff has established controls addressing most risks. However, minor control gaps exist in organizational framework, cost and financial management, schedule management, quality management, and safety management. Although the ATLNext program's procedures satisfy most project management best practices, some gaps remain which may allow for unnecessary risk.

We found that most change orders and work authorizations issued across the four projects complied with procedures. Most controls over project management in areas such as project activation, payment application processing, and financial management were present and functioning as intended.

Small adjustments would bring controls in line with best practices regarding design checklists, value engineering policies, recurring safety training, and mobilization and demobilization plans. Some required project documentation was not accessible for review for various elements of the project lifecycles according to policy guidelines such as design, operation and maintenance, and safety. Additionally, written procedures do not fully document current value engineering and mobilization and demobilization practices.

While Planning and Development has controls in place, policy updates would clarify business processes and accountability. We found that Planning and Development's practices have evolved. However, some policies are not aligned with current practices. Policies should be updated to align with current practices regarding pay application requests, change management, design reviews, and supporting documentation.

Management Responses to Audit Recommendations

Summary of Management Responses		
Recommendation #1: We recommend the airport general manager formalize the current design-to-cost methodology to establish a policy and procedure for design to cost and value engineering practices.		
Response: Agree	**Status:** Implemented	**Estimated Completion Date (M/Y):** April 2024
Recommendation #2: We recommend the airport general manager update design review policies and require staff to use plan review checklists during the design submittal process.		
Response: Agree	**Status:** Implemented	**Estimated Completion Date (M/Y):** April 2024
Recommendation #3: We recommend the airport general manager ensure that processes are reinforced to guarantee project staff participation in ongoing safety training programs for capital construction projects.		
Response: Partially Agree	**Status:** Partly Implemented	**Estimated Completion Date (M/Y):** April 2024
Recommendation #4: We recommend the airport general manager require Planning and Development staff to document their current methodology regarding mobilization and demobilization activities that would be applicable to the diverse nature of projects.		
Response: Partly Agree	**Status:** Partly Implemented	**Estimated Completion Date (M/Y):** April 2024
Recommendation #5: We recommend the airport general manager require Planning and Development staff to update closeout policies to better align with best practices regarding the use of closeout checklists and construction closeout meetings.		
Response: Partially Agree	**Status:** Implemented	**Estimated Completion Date (M/Y):** April 2024

Recommendation #6: We recommend the airport general manager ensure that Planning and Development staff develop a formal process to document the diversity manager's signature on the specific Equal Business Opportunity report attached to the pay application.		
Response: Disagree	**Status:**	**Estimated Completion Date (M/Y):**
Recommendation #7: We recommend the airport general manager require Planning and Development staff to ensure construction safety and health plans and related documentation are approved prior to beginning construction work and maintained in project files.		
Response: Partially Agree	**Status:** Implemented	**Estimated Completion Date (M/Y):** April 2024
Recommendation #8: We recommend the airport general manager have Planning and Development staff confirm safety non-compliance forms are approved according to policy to ensure contractors have proposed appropriate corrective actions.		
Response: Agree	**Status:** Implemented	**Estimated Completion Date (M/Y):** April 2024
Recommendation #9: We recommend the airport general manager require the Planning and Development staff to consistently follow procedures requiring documentation of construction progress meeting minutes and payment application processes.		
Response: Partially Agree	**Status:** Implemented	**Estimated Completion Date (M/Y):** April 2024
Recommendation #10: We recommend the airport general manager require Planning and Development staff to follow policies regarding documenting administrative requirements on inspection daily reports before they are submitted for approval.		
Response: Agree	**Status:** Implemented	**Estimated Completion Date (M/Y):** April 2024
Recommendation #11: We recommend the airport general manager require Planning and Development staff include photo evidence in their inspection daily reports, and make sure documentation of activities and worksite conditions are available.		
Response: Agree	**Status:** Implemented	**Estimated Completion Date (M/Y):** April 2024

Recommendation #12:
We recommend the airport general manager require Planning and Development staff to conduct project design reviews according to policy and contract terms.

Response: Agree	**Status:** Implemented	**Estimated Completion Date (M/Y):** April 2024

Recommendation #13:
We recommend the airport general manager require Planning and Development staff to develop and use review checklists as part of the design review process, and update written policies and procedures to reflect the use of those checklists during plan reviews.

Response: Agree	**Status:** Partly Implemented	**Estimated Completion Date (M/Y):** April 2024

Recommendation #14:
We recommend the airport general manager have Planning and Development staff route the project closeout checklist through PMWeb for approval.

Response: Partially Agree	**Status:** Implemented	**Estimated Completion Date (M/Y):** April 2024

Recommendation #15:
We recommend the airport general manager require Planning and Development staff to follow procedures to ensure all project documentation has been completed and projects are closed out timely within Enterprise Project Management System.

Response: Agree	**Status:** Implemented	**Estimated Completion Date (M/Y):** April 2024

Recommendation #16:
We recommend the airport general manager require Planning and Development staff to ensure operations and maintenance manuals and operational readiness, activation, and transfer plans are developed, approved, and distributed according to contract and program requirements.

Response: Agree	**Status:** Implemented	**Estimated Completion Date (M/Y):** April 2024

Recommendation #17:
We recommend the airport general manager require Planning and Development staff update change management policies to be consistent with current practice and ensure change documents are accurate, complete, and supported prior to approval.

Response: Partially Agree	**Status:** Implemented	**Estimated Completion Date (M/Y):** April 2024

Recommendation #18:		
We recommend the airport general manager require Planning and Development staff to ensure work authorizations are approved according to policy.		
Response: Disagree	**Status:**	**Estimated Completion Date (M/Y):**

Recommendation #19:		
We recommend the airport general manager require Planning and Development staff to ensure work authorizations contain supporting documentation as required by contract terms.		
Response: Disagree	**Status:** Implemented	**Estimated Completion Date (M/Y):** April 2024

Recommendation #20:		
We recommend the airport general manager require Planning and Development staff to update policies and procedures to reflect current practices and develop a schedule to ensure annual reviews occur.		
Response: Partially Agree	**Status:** Implemented	**Estimated Completion Date (M/Y):** April 2024

Recommendation #21:		
We recommend that the airport general manager direct the Planning and Development assistant general manager to seek advice from the Ethics Office when potential conflicts occur.		
Response: Disagree	**Status:**	**Estimated Completion Date (M/Y):**

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April 4, 2024

Honorable Mayor and Members of the City Council:

We undertook this audit to address the concerns expressed by the Atlanta City Council regarding the status of the Atlanta Police Department's precinct at the Hartsfield-Jackson Atlanta International Airport and also because we've been auditing capital project management in city departments. To understand the ATLNext program, we tested the implementation of project management controls on four projects—three randomly selected projects and the 2020 Police precinct renovation requested by the City Council. The renovation performed on the precinct focused on upgrades to the interior space that cost just over $1 million. Although the renovations were completed, the location of the Police precinct presents maintenance challenges. We found most of Planning and Development's controls were implemented to manage project risks, and most controls over project management are functioning. Our recommendations focus on aligning policies and procedures with current practices and best practices and ensuring project files are available for review along with focusing on ensuring project management tools are applied consistently according to contract terms and program procedures.

The Audit Committee has reviewed this report and is releasing it in accordance with Article 2, Chapter 6 of the City Charter. We sent a draft report to management on December 19,2023 and received their response on January 30,2024. We appreciate the courtesy and cooperation of city staff throughout the audit. The team for this project was Duane Braithwaite, Brandi Bell, Tiajah Sherman, and Kathy McCauley.

Amanda Noble
City Auditor

Danielle Hampton
Chair, Audit Committee

Aviation Capital Projects

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Introduction

The Department of Aviation's Bureau of Planning and Development oversees ATLNext, which is the airport's capital program. The project teams gather detailed project and program information to help in decision-making.

We undertook this audit because the Atlanta City Council expressed concerns about the status of the Atlanta Police Department's precinct at the Hartsfield-Jackson Atlanta International Airport. City Council adopted Ordinance No. 22-R-4261, requesting that the Departments of Aviation, Police, and the City Auditor's Office audit the previous five years of construction expenditures and the condition of the police precinct after spending roughly $1 million to renovate the precinct in 2020. To gain an understanding of the ATLNext program, we tested the implementation of project management controls on four projects—three randomly selected projects and the 2020 Police precinct renovation requested by the City Council. We also reviewed standard operating procedures for the ATLNext program to assess overall control design for design-bid-build and design-bid projects.

Background

ATLNext represents the Airport's development program, consisting of a set of projects spanning two decades. These projects aim to increase capacity, upgrade existing facilities, and improve the overall appeal of the airport. The ATLNext program manages projects through a series of phases that allow Aviation's Bureau of Planning and Development to assess performance and approve project budgets, schedules, and funding. Various milestones occur during these phases throughout the project, including initiation, activation, design, financial closeout, and final closeout. Each phase uses a project information package, which provides details of a project including the scope, budget, schedule, and funding plan. Planning and Development staff are responsible for managing the ATLNext program and use multiple systems to store and review project documentation and track activity.

Renovations to the Police Precinct at the Airport Cost Over $1 Million

Renovations to the Police precinct in the airport's domestic terminal were completed in June 2021. The scope of work for the Police

renovations focused mainly on upgrading the precinct's interior space and cost over $1 million. Planning and Development staff said the contractors completed all contracted work. Renovations included replacing ceiling grids and tiles, adding new lighting fixtures, and installing motion sensor light switches in the precinct's conference room and private offices. We observed renovations to a kitchenette and hallway (see Exhibit 1) during a site visit. The work included new cabinets, flooring, countertops, ceiling tiles, and paint.

Exhibit 1: Airport Police Precinct Underwent Multiple Upgrades

Source: Auditor observation of the Police precinct on 1/4/2023

Nearly 41% of the project's total construction costs for the police precinct were allocated as "facility refresh," which includes upgrades such as floor and wall protection, painting, drywall replacement, demolition, and millwork. A "general conditions" category, totaling slightly over $295,000, included mostly administrative activities, such as costs for project labor, safety materials, utilities, office supplies, furniture and equipment, and vehicle and mileage usage.

Exhibit 2: Renovations for the Domestic Terminal Police Precinct Totaled Over $1 Million

Construction Application Package Details		
Scheduled Value Description	**Description of Work**	**Amount**
APD Precinct Facility-Domestic	Facility refresh	$410,651
APD Precinct Facility-Domestic	General conditions	$295,334
APD Precinct Facility-Domestic	General contractor fee	$57,550
APD Precinct Facility-Domestic Project Allowance	New office furniture procurement & installation	$57,545
APD Precinct Facility-Domestic Project Allowance	New office furniture procurement & installation	$32,455
APD Precinct Facility-Domestic Project Contingency	Owner FF&E (Furniture, Fixtures, & Equipment) Package Beyond Allowance SP4-1	$26,908
APD Precinct Facility-Domestic Project Allowance	Insurance reconciliation per task order (worker's comp, general liability, builder's risk)	$16,507
APD Precinct Facility-Domestic	Mobilization 25%	$12,500
APD Precinct Facility-Domestic	Mobilization 25%	$12,500
APD Precinct Facility-Domestic	Mobilization 25%	$12,500
APD Precinct Facility-Domestic Project Contingency	Mezzanine 1x4 fixtures/existing conditions (resolve electrical code violations)	$11,578
APD Precinct Facility-Domestic Project Allowance	Bond cost (Payment & Performance Bonds, Liability Insurance)	$11,036
APD Precinct Facility-Domestic	Mobilization 20%	$10,000
APD Precinct Facility-Domestic Project Contingency	Painting roof deck lids & shelving units	$6,444
APD Precinct Facility-Domestic	Temporary removal, storage, and re-install of existing furniture	$5,000
APD Precinct Facility-Domestic Project Allowance	Reusable plastic moving containers with hinged lid	$3,000
APD Precinct Facility-Domestic	Mobilization 5%	$2,500
APD Precinct Facility-Domestic Project Contingency	Allowance work authorization #8 replace cracked tile in reception area (flooring repairs)	$1,862
APD Precinct Facility-Domestic Project Contingency	Demo and remove rubber wall base in Phase I & II (flooring repairs)	$1,453
APD Precinct Facility-Domestic Project Contingency	Offsite document destruction for Phase III & IV (loading & disposal of confidential documents)	$1,330
APD Precinct Facility-Domestic Project Contingency	Demo and replace carpet tiles (flooring repairs)	$853
APD Precinct Facility-Domestic	Six boxes of ceiling tiles shrink wrapped on a pallet	$705
APD Precinct Facility-Domestic Project Contingency	Ground Penetrating Radar Scan for detainee bench	$677
APD Precinct Facility-Domestic Project Contingency	Furnish and install APD seal in stair tower	$452
Total Paid Construction Costs		$991,341
Construction Management Support Services		$37,668
Total Construction Related Costs		**$1,029,009**

Source: Compiled by auditors based on submitted construction application and certification for payment packages, ATLNext Development Program Financial Activity Summary, and ATLCloud

Location of the Police Precinct in the Airport Presents Maintenance Challenges

The Police precinct in the airport's atrium is located beneath the MARTA (Metropolitan Atlanta Rapid Transit Authority) station. Despite the recent renovations, the location presents challenges for ongoing maintenance. According to Police staff, an incident in late 2022 involving a MARTA train resulted in damage to the newly renovated precinct. Planning and Development staff told us that MARTA employees did not ensure the track area was free of debris, which caused water to collect and leak down into the precinct. We observed water damage to the ceilings and buckets used to capture and contain the water (see Exhibit 3). Because the precinct is located under an operating rapid transit system, it is likely to need continuous maintenance and repairs.

Exhibit 3: Police Precinct Sustained Water Damage After Renovations
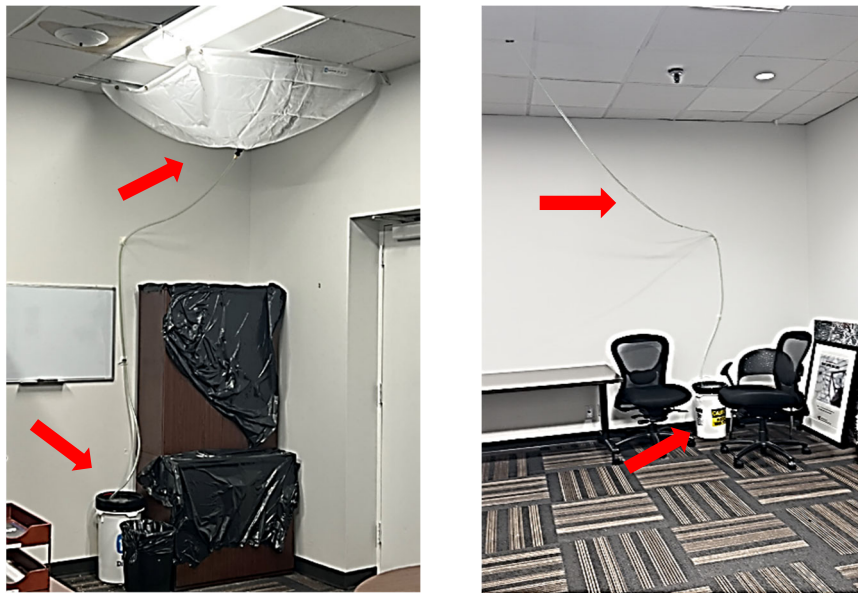
Left: Covered office furniture with water capture device
Right: Tube and bucket attached to water capture device in conference room
Source: Auditor observation of the Airport Police precinct on 1/4/2023

ATLNext is a $7.2 Billion Capital Improvement Program

ATLNext is the master plan for the future development of the Airport. The focus of this 20-year, $7.2 billion-dollar program is to expand and improve Airport facilities and infrastructure. The program is intended to accommodate the expected growth of Atlanta as the world's busiest airport, while maintaining project schedule and budget parameters.

Areas of ongoing and future capital improvements include the Central Passenger Terminal Complex, parking decks, support facilities, air cargo, airside, and hotel and travel plaza.

Aviation staff put processes in place to measure planned scope, time, and cost against actual performance for ATLNext projects. Program controls include a series of approvals and predetermined checkpoints that are needed for projects to progress. Each of the checkpoints provides executive management an opportunity to assess the progress of projects underway and determine adherence to scope, budget, schedule, and funding requirements.

Capital Planning and Development Team Manages ATLNext Projects

In 2005, Aviation created a team within the Bureau of Planning and Development to plan and manage capital projects. Staff are responsible for managing the design and construction of significant expansion, renovation, and maintenance projects at the Airport. In this role, staff oversee each project through its entire life cycle. Planning and Development functions as a service provider, collaborating with other Aviation business units and city stakeholders to support project implementation. Employees have many responsibilities, including budgeting, construction project management, airport planning, noise control, and environmental compliance. They use engineering and design service providers to supplement staffing and technical expertise needs.

Aviation's Policies are Designed to Manage Project Risk

Planning and Development staff use detailed policies and procedures to manage capital projects within the ATLNext program. These are maintained in a cloud-based portal, which serves as a central location accessible to staff and are categorized according to project function, such as planning, design, and construction management. Aviation's policies span a project's lifecycle, from project initiation to closeout. Each lifecycle requires approval from the Project Approval Committee to proceed to the project's next phase. The committee is a body consisting of at least two members of Aviation's executive staff, including Planning and Development's assistant general manager. Other members of the committee include the director of project controls, director of program management support services, director of capital finance, and other area directors. The committee serves as a forum for the team to communicate project status and also has the authority to revise, approve, and cancel projects.

Project initiation—A project is initiated within the ATLNext program when Aviation's assistant director, director, or assistant general manager requests a project using a concept review form. The requestor indicates on the form the general scope of work to be performed, a description of identified problems, and an explanation of how the requested project will resolve the identified issues. The form is then submitted to the Project Approval Committee for review and approval. To move projects from one phase to the next, the committee assesses project performance and approves or re-baselines budgets, schedules, and funding at various checkpoints. The committee uses details provided within project information packages to determine if or when a project progresses to the next lifecycle. The process is illustrated in Exhibit 4.

Exhibit 4: Project Lifecycle Process Establishes Approval at Each Phase

	Planning Phase		Design Phase		Construction Phase
Step 1 — Project Start; Concept Review Form (CRF) Purpose and intent of project; Project receives a project number (WBS#).		**Step 3** — Project Activation; Funding request for design; Approval for design process.	**Step 5** — Design Development 60%; Requests approval to move forward in design.		**Step 7** — Financial Close Out; Approves the initial project closeout estimate for DOA Finance used in calculating rates and charges. Required 90 days after Date of Beneficial Occupancy or Substantial Completion
1 → 2 →		3 → 4 →	5 → 6 →		7 → 8 →
Step 2 — Project Initiation; PIP is generated; Funding request for planning the CRF; Approval for planning process.		**Step 4** — Schematic Design 30%; Requests approval to move forward in design.	**Step 6** — Construction Documents 90%; Requests approval to move to construction.		**Step 8** — Final Close Out; Approves the final project scope, schedule, budget, funding, and final rates and charges. Required 180 days after Date of Beneficial Occupancy or Substantial Completion
Planning Phase		Design Phase			Construction Phase

Planning phase—Once the Project Approval Committee approves the concept review form, it assigns a project manager. The project controls manager is responsible for adding the work breakdown structure number and project to the master list. The project manager is then required to complete the initiation project information package and submit it to the committee for review; this function starts the planning activity for a project. This project information package contains the initial scope, schedule, and budget for the project. The project manager will also make a request to the committee to fund the planning effort at this stage. The project team also develops the planning documentation, as part of the initiation phase, and provides it to the director of planning for acceptance.

Design phase—After the planning phase is complete, the project manager presents the activation project information package to the committee, which begins the design phase and lays out the anticipated total scope, schedule, and budget for the project. The design phase requires the project manager to present the schematic design, design development, and construction document project information package at the 30%, 60%, and 90% design completion stages to the Project Approval Committee. These reviews are intended to finalize the designer's work, establish the internal project baselines for scope, schedule, and budget, and move the project forward to construction.

Construction phase—If a design or construction work change is needed, the design manager, resident engineer, or designee is responsible for capturing potential changes on a change request form. The form and supporting documentation are submitted to either the area director or the Change Review Board, depending on the threshold for review and approval. The board's approval is required when change requests are $10,000 or more, and the change results in an adjustment to the approved project schedule. The area director's approval is sufficient if the value of the change is less than $10,000, does not involve scope or schedule changes, and the change does not result in the use of contingency that would exceed the project completion by more than 10%.

Project closeout—Once construction is complete, the closeout process begins. Financial closeout occurs within 90 days of the project achieving beneficial occupancy or substantial completion. During this phase, the project manager is required to present the initial project's closeout estimate to the Project Approval Committee for approval. Within 180 days of achieving beneficial occupancy or substantial completion, the project manager generates the final closeout project information package for the Project Approval Committee to review and approve. At project closeout, the project manager and resident engineer ensure all construction contract requirements are complete, service providers and/or contractors have submitted all payment applications, and closeout amounts match internal records. The city is also responsible for making six presentations to airline oversight committees to keep the members informed on project planning, scheduling, design, construction, and financing.

Department Uses Multiple Systems to Track Projects

Planning and Development staff use multiple systems to facilitate cost management, schedule management, and reporting. Since 2016, staff has used the cloud application PMWeb for construction administration

activities, task order tracking, and change management. Project documents such as master commitments, task orders, requests for information, meeting minutes, change orders, allowance for work authorizations, and pay applications are tracked in the system. Staff also use the Sages system during the design phase of a project. Sages is an electronic platform for regulatory review and approval of development and construction projects and staff uses it to provide review comments for design submittals.

The legacy system, Enterprise Project Management System, is a document repository that Planning and Development staff uses to manage Aviation's capital improvement projects. It is a data warehouse that stores certain modules such as Primavera P6 for scheduling and the Online Invoicing System for payment processing.

Audit Objectives

This report addresses the following objectives:

- Are transaction-level internal controls designed and functioning to ensure that payments to construction contractors and design consultants are properly supported and allowable?

- Are change orders and charges against allowances and contingencies properly supported, reviewed, and approved?

Scope and Methodology

We conducted this audit in accordance with generally accepted government auditing standards. We reviewed standard operating procedures of Aviation's ATLNext Capital Project Program to assess overall control design on design-bid-build and design-bid projects. We tested the implementation of project management controls on four projects—three randomly selected projects and one project requested by the City Council. Two of the projects we reviewed did not have a design component; however, each had a construction phase and were identified as completed projects. Our testing covered project data reported between 2017 to 2023.

Our audit methods included:

- reviewing industry best practices to build a comprehensive capital project best practice framework

- interviewing Planning and Development staff to obtain an understanding of departmental capital improvement processes

- comparing the ATLNext Capital Project Program's policies and procedures to best practices

- identifying project management controls to test based on our review of program policies and procedures and risk assessment techniques

- testing for the use of project management controls on a sample of four capital projects

- identifying whether project documentation was properly reviewed and approved through system workflows in accordance with policies and procedures

- developing schedules to identify total project costs spent on the Police precinct refresh project

Generally accepted government auditing 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.

Findings and Analysis

Overall, Procedures Are Consistent with Best Practices

Aviation's Planning and Development staff has developed detailed policies and procedures that generally follow best practices for capital project management. The procedures provide project teams with a framework for project management that addresses relevant risks. We found that written policies and procedures exist for various elements within different project lifecycles. We compared these policies to best practices for capital project management across various phases. We also found that planning procedures facilitate cost and schedule management, while design policies maintain quality and budget. Execution and testing phase controls ensure construction adheres to specifications, with guidelines for changes and allowances. Payment application processes are in place to verify compliance with contract requirements. Planning and Development staff have established controls addressing most risks; however, minor control gaps exist in areas such as organizational framework, cost and financial management, schedule management, quality management, and safety management. The use of design checklists, value engineering policies, recurring safety training, and mobilization and demobilization plans could improve.

We recommend the airport general manager align current practices with industry best practices, which include formalizing the current design-to-cost methodology to establish a policy and procedure for design to cost and value engineering practices. We also recommend that the airport general manager update design review policies and require staff to use plan review checklists during the design submittal process. Although projects within the ATLNext program are diverse, we recommend the airport general manager require Planning and Development staff to document their current methodology regarding mobilization and demobilization activities that would be applicable to the diverse nature of projects. Additionally, we recommend the airport general manager update closeout policies to better align with best practices regarding the use of closeout checklists and construction closeout meetings.

Written Policies and Procedures Exist for Project Lifecycle Phases

We reviewed the Bureau of Planning and Development's policies and procedures and compared them to best practices for capital project management throughout the planning, design, execution, testing, and turnover lifecycles. We used a capital project procedural framework

that PricewaterhouseCoopers developed to measure how well Aviation's procedures address relevant project risks (see Exhibit 5). The framework includes six different lifecycles from planning to operations and maintenance with ten project elements that cross each lifecycle. The project elements represent various controls that should be considered by project managers for anticipating and mitigating uncertainties that exist within capital projects. The project lifecycle names within the best practice differ from Planning and Development's lifecycle process regarding the construction and closeout phases. The execution and testing phases within the best practice relate to construction activities and the turnover phase includes closeout tasks. We found that Planning and Development staff has established controls that address most risks associated with each phase and element, shown color-coded in light purple in Exhibit 5. We identified minor gaps in controls over the organization framework, cost/financial management, schedule management, quality management, and safety management elements.

The procedures address most best practices for the project elements across the various phases, but minor gaps are color-coded in a darker shade of purple in Exhibit 5. We identified minor gaps in controls over the organization framework, cost/financial management, schedule management, quality management, and safety management elements. Gray elements within Exhibit 5 were outside of our scope. Our criteria testing assessed controls across the ten elements for each project lifecycle shown in the exhibit. Although the ATLNext program's procedures satisfy most project management best practices and we found controls are mostly designed to mitigate risks, some gaps remain which may allow for unnecessary risk. Our recommendations suggest Planning and Development staff address policy and procedure gaps for project management using best practice criteria.

Exhibit 5: Controls Exist for Most Project Elements and Lifecycle Phases

Project Elements	Planning	Design	Execution	Testing	Turn-over	Operations/ Maintenance
Organization Framework	Project resource plan, organization, roles and responsibilities		Mobilize and manage labor	Demobilization	Operations staff planning	Ongoing requirements/skills review
Procurement and Contract Management	Contract strategy	Contractor qualification and evaluation	Contractor selection and negotiation	Contract compliance review	Trouble-shoot and punch list	Vendor qualification and selection
Scope and Change Management	Project objectives and scope definition	Detailed project design and scope freeze	Change control		Owner acceptance	Asset change management
Cost/Financial Management	Project estimate	Project cost baseline	Cost control		Final payment/retention release	Operations & maintenance budgeting
Schedule Management	Project schedule requirements	Project schedule baseline	Schedule management		Completion checklist	Ongoing Maintenance Schedule
Systems and Tools	Project systems strategy	Implement project systems	System support and maintenance		Transition to enterprise asset management	
Risk and Issue Management	Risk and issue management planning	Risk and issue tracking and resolution			Confirm issue resolution	Ongoing issue management
Communication and Reporting	Assess stakeholder requirements	Project status and regulatory filings	Project performance	Asset performance	Project close-out	Operations and financial reporting
Quality Management	Quality plan	Specifications compliance criteria	Quality assurance and control		Transition as-built specifications to operations	
Safety Management	Safety plan	Safety training program	Safety trend tracking and incident investigations		Commissioning interface plan	Operation safety program

Legend:
- We found best practices were fully satisfied based on review of DOA P&D's policies and procedures.
- We found best practices within the project element category were a mix of fully and partially/not satisfied based on review of DOA P&D's policies and procedures.
- We found best practices within the project element category were partially satisfied based on review of DOA P&D's policies and procedures.
- We found best practices within the project element category were not satisfied based on review of DOA P&D's policies and procedures.
- We did not review best practices for this project phase.

Source: PwC Managing Capital Projects Through Controls, Processes, and Procedures; auditor analysis of Aviation's ATLNext Capital Project Program

Most intersections of project elements and project lifecycle phases satisfy best practice criteria. Planning and Development's policies and procedures define control activities during various phases to facilitate project management throughout a project's lifecycle. Overall, we found program policies were consistent with best practices throughout a project's lifecycle, from planning to closeout. However, minor gaps exist within certain project elements across the lifecycles, including organization framework, schedule management, quality management, and safety management.

The planning phase controls allow for proactive management of costs and schedules. The program's planning procedures establish controls for the project team to develop the initial scope, schedule, and budget

that will be managed throughout a project's lifecycle. The main focus of the planning lifecycle is ensuring entities have project management plans in place to guide project initiation activities. We found that Planning and Development staff uses project information packages as source documents for reporting scope, schedule, budget, and funding information for all projects, from initiation through closeout. The staff also develops project execution plans that provide a snapshot of the project at different stages, including staff roles and responsibilities, procurement strategies, and risk assessment procedures. Processes exist to ensure quality control oversight is provided across projects. We reviewed desktop procedures that outline staff responsibilities to ensure quality assurance tasks are conducted from the planning phase to the close out phase. We also found that Planning and Development staff incorporate safety requirements within contract terms that contractors submit for review and approval prior to beginning construction activities.

The design phase includes guidance to balance quality, schedule, scope, and cost. We found that Planning and Development staff has policies in place that define responsibilities and requirements for managing the various design phases of projects. Project team members are required to conduct technical reviews of design submittals (schematic to final construction) to ensure that the project scope, schedule, and budget are maintained, and design standards and criteria are followed. Plans that are complete and well-reviewed reduce schedule delays and change orders during construction. Policies also call for the project scope to be communicated and tracked throughout a project's lifecycle. Changes should not occur to the scope at the schematic design stage unless formal approval is obtained for baseline changes. Preconstruction meetings are held after the notice to proceed is issued to the contractor; in these meetings, stakeholders discuss the project's objectives, intent, and expectations with the team. These meetings also include status updates with the architectural and engineering consultants and project team to discuss design activities, progress, and changes throughout the design phase.

Execution and testing phase controls help to ensure construction work is done according to project specifications and requirements. We found that Planning and Development staff have procedures that establish approvals for construction changes and project allowances. Procedures also exist to confirm that payment applications are processed according to contract terms. The policies ensure project risks are tracked and resolved and staff investigate safety and quality control incidents. The change management procedures provide the project team with guidelines for managing design and construction changes and related approvals. During construction, changes could

originate from requests for information, proposed design changes, delays, or other unforeseen conditions. If a change is needed, the project team is required to prepare change request documentation for approval. Once the change request is approved, the project team is responsible for ensuring any contract modifications align with change documentation.

The payment application process requires that the Planning and Development staff verify that submitted invoices comply with contract/task order requirements. The project manager or resident engineer is required to complete a checklist of items to ensure work has been accomplished for which payment is being requested. The payment application package is also reviewed at the invoice administrator level, which is then forwarded to the executive team for final review and approval.

Planning and Development's procedures require the project team to hold regular progress meetings with the contractor during the construction phase. These meetings give the project team a forum to monitor compliance with the project's established scope, schedule, and cost. The procedure also includes a list of suggested agenda items such as a previous meeting summary, safety or quality control issues, status updates, schedule progress, the status of change orders, and contractor payment issues. Progress meetings are intended to ensure the project stays on track and allow team members to intervene early if problems emerge.

We also reviewed procedures that guide field inspectors when inspecting contractor work. The inspector is to complete the inspector's daily report to assess whether construction work is performed according to contract documents (design drawings, technical specifications, approved submittals). These inspection reports are to be submitted to the quality assurance manager or lead construction manager assigned to the project for review. Regular monitoring of construction sites helps to identify and resolve critical defects and potential safety hazards.

Closeout phase controls should ensure that project work is complete.
We found that Planning and Development staff have procedures that address project closeout tasks. The contractor is required to submit notification to the construction manager or resident engineer when the project work is materially complete and ready for inspection. The notification includes a list of non-compliant or incomplete items— referred to as punch list items—that are to be inspected and completed before classifying the project as substantially complete. Upon project completion and staff confirmation of closeout tasks, procedures state

that the contractor is issued a notice of final acceptance documenting the user's acceptance (see Exhibit 6). Warranties and operations and maintenance manuals should be developed and approved according to contract terms. Planning and Development's project closeout processes include staff verifying that final payments are made to contractors, project budgets are closed, and the closeout is communicated to the Project Approval Committee for approval. Procedures also exist that guide stakeholders in developing an operational readiness plan to manage and track associated training activities and to ensure constructed facilities and systems meet owner expectations.

Exhibit 6: Final Acceptance Begins When the Project Conforms to All Contract/Task Order Requirements

Notice of Final Acceptance

Project Name: _____
Contractor Name: _____
Contract No.: _____
WBS No.: _____
Date of Issuance: _____

The Project as a whole has been accepted and includes:

_____
_____
_____
_____
_____
_____

The work performed under the above referenced Contract has been inspected and found to be satisfactory. In accordance with the General conditions, GC-___, the date of Final Acceptance of the work is hereby established as _____.

The warranty provisions for work as defined in the General Conditions, GC-___ Warranty, shall remain in force for a period _____ months after the date of _____.

Definition of Date of Final Acceptance
The date of Final Acceptance of the Project is the date when the Project as a whole conforms to all requirements of the Contract/Task Order, so the City may occupy or utilize the entire Project for use as defined in the General Conditions, GC-___, Use of Completed Portions of the Work.

_____	_____	_____
Contractor	By	Date
_____	_____	_____
Design Service Provider	By	Date
_____	_____	_____
Design Manager	By	Date
_____	_____	_____
Construction Manager/Resident Engineer	By	Date
_____	_____	_____
Project Manager	By	Date
_____	_____	_____
Assistant Director	By	Date
_____	_____	_____
Assistant General Manager	By	Date

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Source: Aviation Planning and Development's Policies & Procedures for ATLNext Capital Project Program, March 2021

Small Adjustments Would Bring Procedures in Line with Best Practices

The lack of design phase controls regarding value engineering policies, use of plan review checklists, and recurring safety training could impact project cost and quality. Current value engineering practices are not fully documented in written procedures. While staff told us they use a design-to-cost methodology that triggers value engineering exercises when a project's design cost exceeds the established budget, this practice is not documented in policy. Best practice recommends that capital project programs develop value engineering policies, which ensure work is done cost-efficiently. These policies would collectively ensure that high-cost projects are presumed to require value engineering unless project staff justify a decision to the contrary. We recommend the airport general manager formalize the current design-to-cost methodology to establish a policy and procedure for design to cost and value engineering practices.

Planning and Development staff has a documented design review process for staff to follow when reviewing design submittals; however, the policy does not contain guidance on the use of plan review checklists during design reviews to ensure that consultants submit all required deliverables and submittals meet contract requirements. The policy also needs updating to reflect the current electronic review process. We recommend the airport general manager update design review policies and require staff to use plan review checklists during the design submittal process.

We also did not identify program policies covering training requirements for continuing education programs on construction safety. Planning and Development staff provided us with a "construction safety and health plan" template that is included with construction contracts. It includes a section stating that employees must attend a project safety orientation class before beginning work on a project; however, best practices state that to minimize risk and ensure successful project management, continuing safety education and training programs should be required for agency supervisors and staff involved in capital construction programs. We recommend the airport general manager ensure that processes are implemented to require project staff to participate in ongoing safety training programs for capital construction projects.

The ATLNext program includes detailed policies for executing construction activities, but it does not address contractor mobilization and demobilization plans. Planning and Development's written policies do not address mobilization or demobilization project

activities; instead, staff told us these activities are specific to construction contracts as projects can be diverse in scope, nature, and delivery method. Although projects may be diverse in nature, policies that address minimum mobilization/demobilization activities and related payment terms could help ensure plans meet general contract requirements and are consistent across projects. We recommend the airport general manager require Planning and Development staff to document their current methodology regarding mobilization and demobilization activities that would be applicable to the diverse nature of projects.

The department has policies that describe project completion but should ensure all closeout activities are completed. The closeout phase of a construction project involves actions that are required to finish work and deliver the project. Closeout typically begins when a project has reached substantial completion. We found that the program's closeout procedures generally align with industry criteria. The ATLNext program has established procedures that guide staff during the project closeout phase, including ensuring project staff complete a project closeout checklist (see Exhibit 7); however, during control testing, staff told us the sample checklist contained in the policy is not currently used and the procedures do not provide guidance for the use of construction closeout meetings.

Exhibit 7: Project Team Is Required to Ensure Completion of Construction Activities

ATLNE✈T

Project Closeout Checklist (Sample)

Close-Out Tasks	PM	DM	CM
PM sends a Project Close-Out notice schedule to all affected organizations and individuals.			
Planning Tasks, documentation, Task Orders confirmed completed, closed, and submitted to Document Control.			
AMS Tasks, documentation, Task Orders confirmed completed, closed, and submitted to Document Control.			
Environmental Tasks, documentation, Task Orders confirmed completed, closed, and submitted to Document Control.			
Design tasks, documentation, Task Orders confirmed completed, closed, and submitted to Document Control.			
As Builts, O&M Manuals, and Warranty documentation has been accepted and submitted to Stakeholder, Facility Management, Responsible Maintenance Department, and Document Control.			
Construction work activities are complete, no open punchlist items, Final Completion submitted.			
All required documentation during construction has been transmitted to Document Control.			
There are no construction outstanding claims, retainage, reserves, audit issues, or other unresolved issues.			
Service Provider and Contractor Diversity Reports closed and submitted to the COA.			
RE generated documentation submitted to Document Control. CM task orders closed			
Service Provider and Construction Pay Applications have been processed and cleared in Oracle.			
Capital Finance has been provided the "Capital Finance Project Closeout Information Request – Insurance" form for OCIP projects.			
Contracts, Task Orders, Purchase Orders have been closed.			
Time Control is closed to all charges			
Final and complete costs for all cost categories for the PIP have been identified.			
PM submits the Project Closeout PIP.			

Source: Aviation Planning & Development Policies & Procedures for ATLNext Capital Project Program, March 2021

Best practices recommend holding a construction closeout meeting to ensure all project closeout requirements have been identified, lessons learned are documented, and opportunities for improvement are discussed. These closeout actions should help the project team and other stakeholders streamline processes regarding schedule, budget, and resources, as well as assist in improving the performance of future projects. We recommend the airport general manager require Planning and Development staff to update closeout policies to better align with

best practices regarding the use of closeout checklists and construction closeout meetings.

Most Controls Have Been Implemented to Manage Project Risk

Although we found the design of controls for the ATLNext Program was overall consistent with the department's procedures and best practices, we identified minor exceptions regarding applying capital project controls during our testing of sampled projects. We evaluated Aviation's project management processes compared to the department's procedures, specifically testing one capital project that was requested by the City Council and three additional randomly selected projects (see Exhibit 8). Our testing included evaluating 270 project controls across seven lifecycle elements for each sampled project, as shown in Appendix B. We recommend that the department improve processes by ensuring procedures are updated and project documentation is better maintained.

Overall, we found that staff generally followed submission and approval procedures. We tested 66 project controls in project activation (startup), ongoing project management, and financial management. While most criteria were met, we found deviations from procedures in startup and ongoing project management activities. We also tested 17 controls in program safety management to evaluate project safety and security measures. Although Planning and Development's procedures included safety requirements for contractors, we found that improvements were needed in control implementation. Staff should ensure documentation is reviewed and maintained to confirm contractor compliance with safety requirements. Change orders and work authorizations can pose project risks when not adequately managed.

We also tested 71 controls related to 44 change orders and 35 work authorizations issued across the four projects and found that these processes complied with procedures. We did find, however, discrepancies in existing change management policies concerning approvals and supporting documentation. We recommend that the department update procedures for consistency with current practices and enhance enforcement to ensure compliance with current procedures.

Finally, we examined 37 controls for approving planning, design, and construction pay applications. We conducted testing to validate pay application requests. We found that policies should be updated to align with current practices, and the department should ensure that documents are consistently attached to pay requests, as required by current policy.

We Tested 270 Controls Across Four Projects

We performed detailed control testing to evaluate Aviation's project management processes. We randomly selected three projects for review in addition to the Police precinct refresh project to determine whether program-related controls identified in the department's procedures were implemented and effective. The specific projects we reviewed, along with project completion dates and scope, are shown in Exhibit 8.

Exhibit 8: Projects Sampled Within ATLNext to Assess Control Implementation

Project Name	Project Completion Date	Project Scope
Domestic Terminal Police Precinct Facility	6/22/2021	Project's scope of work was to upgrade the interior space within the Police Precinct located in the Domestic Terminal.
Noise Insulation Program (NIP) – Harvard Avenue Properties	11/23/2021	Project's scope of work included the construction of noise insulation measures in aircraft noise-incompatible structures located at the Harvard Avenue Properties.
Concourse E Central Utility Plants (E-CUP) Enhancements	1/24/2023	Project's scope of work required the replacement of aging chillers, cooling towers, and boilers with new highly efficient equipment in Concourse E.
Demolition of Sheraton Hotel Complex	3/30/2023	Project's scope of work was to design and execute the demolition of the Sheraton Hotel Complex.

Source: Auditor generated based on review of contract scope of work or task order descriptions

Our testing assessed 270 project controls across seven lifecycle elements for each sampled project to identify whether Planning and Development staff have measures in place to mitigate potential project risks (see Appendix B). The project elements we reviewed are:

- organizational framework, which included startup and project activation activities
- scope and change management, which included construction changes (including allowance work authorizations) and design changes
- cost and financial management (including planning, design, and construction invoice review and approval)

- schedule management, included as part of the ongoing project management review
- risk management, included as part of the ongoing project management review
- quality management, which included design oversight and construction oversight (including inspection daily reports and requests for information)
- safety management

We reviewed 33 project startup and activation controls to assess whether the sampled projects were approved at the initiation and activation stages according to Planning and Development's procedures. Controls at this level primarily inform management of how the implementation of a project can resolve identified issues, and whether the project should proceed to the planning phase. We found supporting documentation existed to validate the initiation and activation project information package approvals.

We tested 71 controls across a sample of 13 change orders and seven work authorizations to ensure requested changes were supported, reviewed, and properly approved according to program procedures. Although we found that design and construction change orders and allowance work authorizations were performed, we noted that staff did not consistently follow policies regarding approvals and change management documentation.

We tested 17 financial management controls to determine whether task order components were complete and properly approved and project financial records were appropriately closed. Our review of controls over these elements found that most criteria were met. Additionally, we tested 37 controls across the sampled projects to evaluate the approval of planning, design, and construction pay applications (invoices). Overall, we found pay application processes for approval exist, but staff did not always follow policy.

We reviewed 16 project controls for ongoing project management, including schedule adjustments and associated risks. Testing focused on schedule management control activities, such as identifying whether administrative adjustment or variance project information packages were completed and approved to notify management of reasons for project schedule changes. We also assessed whether risk registers were appropriately updated to ensure project risks were monitored and controlled. We reviewed construction progress meetings to determine whether stakeholders were informed of issues affecting project

schedules and costs. Overall, we identified deviations from policies that require staff to update procedures to reflect current practices.

We reviewed 79 controls in design and construction oversight, including verifying:

- staff review of design submittals
- approval signatures documented on project information packages
- punch list items were completed
- certificates of substantial completion and notices of final acceptance were issued to contractors
- operation and maintenance manuals and activation plans were reviewed
- inspection daily reports were submitted
- requests for information were approved
- closeout documents were completed

We conducted reviews of inspection daily reports and requests for information on a sample basis. For inspection daily report testing, we randomly selected one month within the construction period in which the field inspector observed work to identify whether reports were submitted daily for staff review and approval. We could not complete inspection daily report testing for one of the sampled projects as the reports were unavailable for review. To test requests for information we randomly selected six samples for each project, which represented 20% of the total population (91 records) of requests for information issued across three projects. Requests for information were not available for review for one of the projects. We focused primarily on whether processes existed to ensure construction aligned with contract terms. We also reviewed whether quality assurance procedures were followed to identify and correct nonconforming work before project completion.

We tested 17 controls regarding safety management across the four sampled projects to identify whether Planning and Development staff had safety and security measures in place to minimize potential project delays resulting from injuries and other hazards. Mostly, we found Aviation staff did not consistently incorporate safety and security measures in project management plans.

Improvements to Safety Management, Project Changes, and Pay Application Controls Can Help Reduce Capital Project Risks

We reviewed project controls regarding safety management, project changes, and pay applications to determine Planning and Development's

capital project risks. We tested 17 safety management controls across the sampled projects and found that policies exist that require contractors to submit safety plans for review; however, according to best practices, stronger control implementation and documentation review are needed to enhance program safety management. We tested 71 change management controls across a sample of 13 change orders and seven work authorizations. We found that change management practices were inconsistent with the written policy regarding required approvals and supporting documentation. To mitigate schedule delays and additional project costs, staff should update the policy or increase enforcement. We tested 37 pay application controls during our review of 23 sampled invoices to ensure staff complied with contract terms and maintained proper checklists during third-party invoice reviews. Our evaluation of pay applications indicated the necessity for updated policies, consistent documentation support, and thorough review processes.

Aviation could improve current practices regarding program safety management. Best practices suggest the project management plan address safety and security measures to reduce the possibility of project delays resulting from potential injuries, safety incidents, and other hazards. Planning and Development's policies contain requirements for contractors to submit site-specific safety plans and other related submittals for review and approval. We tested 17 controls in this area, including but not limited to:

- identifying whether each project had an approved contractor health and safety plan
- reviewing other safety-related plans, such as fire prevention plans, hazard communication plans, traffic control plans, and trench evacuation plans
- determining whether safety orientation classes were held
- identifying whether daily safety coordinator and incident reports were reviewed
- determining whether processes existed to ensure safety non-compliance or non-conformance notices were issued

Although Planning and Development has addressed project safety controls, control implementation could be strengthened.

Project changes can be risky when not managed properly. Change orders are adjustments to the original scope of work and can be initiated by the contract owner or general contractor. We identified 44 change orders and 35 work authorizations issued across the 4 projects. Change management controls help reduce project risks such as increased project costs, schedule delays, or approval of completed work

that does not comply with contract requirements. We found change management practices have evolved and written policies should be updated to reflect current required approvals and supporting documentation.

We found that control activities generally existed to ensure invoices were reviewed and approved before payment. We reviewed 23 invoices of a total of 84 (27%) that were paid for services performed by consultants and contractors assigned to the sampled projects. We assessed whether:

- the schedule of values was properly approved

- documentation was included in the pay application package to validate the requested amount

- pay application checklists were completed and approved

- staff checked the pay application packages for compliance with policy and/or contract requirements

- executive members reviewed and approved pay application packages

- payment was made to the service provider within contract terms

Our review of the 23 planning, design, and construction pay applications found that control activities are generally present to ensure invoices were reviewed and approved before payment; however, to improve processes, we recommend that the department update polices to reflect current practices. We also recommend that staff consistently ensure that sufficient documentation is attached to support pay application requested amounts, and resident engineer and project manager checklists are completed and maintained during reviews of third-party invoices.

Most Controls Over Project Management Are Functioning

We found that most controls over project management in areas such as project activation, payment application processing, and financial management were present and functioning as intended. The review, approval, and documentation of project information packages during project initiation and activation were consistent for most of the sampled projects. Payment applications for most invoices we reviewed contained supporting documentation and required approvals to support the requested amounts. We found that scopes, deliverables, and project milestones, along with executive approvals, were consistently present for the reviewed contract task orders. Minor process improvements are needed regarding the documentation of the diversity

manager's verification of the Equal Business Opportunity report that accompanies each payment application. We recommend the airport general manager ensure that Planning and Development staff develop a formal process to confirm the diversity manager's signature is documented on the specific Equal Business Opportunity report attached to the pay application.

Controls over payment application processing were mostly functioning, with minor exceptions. We reviewed 23 payment applications submitted for the four projects across the planning, design, and construction phases. Of the nine pay applications we reviewed for the planning and design phase of the sampled projects, we found each pay application and schedules of values was approved and supporting documentation was present. We also found that all required executive approvals were present for each of the 14 construction-related pay applications we reviewed. Resident engineer checklists were completed and approved for 11 of 14 (78.6%) of the invoices we reviewed. Supporting documentation to validate pay requests was also present for 8 of 14 (57.1%) of the invoices.

As part of Planning and Development staff's review process for consultant pay applications, the consultant is required to submit the Equal Business Opportunity report to the diversity manager for verification. The report is to be submitted to the diversity manager upon request for construction pay applications. We did not test the accuracy of the Equal Business Opportunity Report as it was not within our scope. Aviation staff told us the diversity manager verifies the accuracy of the equal business opportunity data against system data reported by the Office of Contract Compliance to ensure the consultant or contractor has met contractual requirements during the invoice period; however, we were unable to confirm the documented approval by the diversity manager on the attached Equal Business Opportunity reports for each of the planning, design, and construction pay applications we reviewed. Although Planning and Development's written policy does not specifically state that verification is required for Equal Business Opportunity reports submitted with construction pay applications, the process should be consistent across all project phases. We recommend the airport general manager ensure that Planning and Development staff develop a formal process to ensure the diversity manager's signature is documented on the specific Equal Business Opportunity report attached to the pay application.

We found that the majority of controls tested across the sample projects satisfied the criteria for financial management. We tested 17 financial management controls across the four sampled projects, including identifying the presence of contract task order components such as details of the scope of work, deliverables, project milestones, required cost proposals or staffing plans, purchase order numbers, and funding sources. We also reviewed approvals of task orders by various required parties such as members of executive management and service providers. We reviewed payment closeout procedures such as completion of checklists, final payments cleared in ATLCloud, and purchase order closeout procedures in PMWeb.

Overall, we found that staff followed policies and procedures regarding requirements for task order components, required approvals, and project closeouts. The task orders contained detailed scopes of work, deliverables, project milestones, and required cost proposals or staffing plans. Purchase order numbers and funding accounts were present on these task orders. Planning and Development staff also ensured that required approvals were obtained. Additionally, final payments to service providers for these task orders had cleared and purchase order closeouts and final payment checklists were completed.

Overall, we found supporting documentation to validate the initiation and activation project information package approvals. We reviewed documents covering the project activation lifecycle to assess whether the projects were approved at the initiation and activation phases according to the project contract terms and the department's procedures. The initiation and activation phases include schedule approvals, planning documentation, project information package approvals, and project team signoffs. Controls at this level help management decide if the identified issues and potential risks can be resolved to advance the project to the next phase.

We tested 33 controls across each of the four sample projects and found that the initiation project information package was completed and approved for the Police Precinct Refresh and the Demolition of Sheraton Hotel projects. A planning phase was not required for the Concourse E-CUP and NIP Harvard Avenue projects therefore, the initiation project information package was not documented. The Concept Review Form indicates the scope, problems addressed, and an explanation of how the project will address the identified issues. This form was completed across each sampled project. The activation project information package begins the design phase and was approved across each project along with the documentation of the project milestone schedule, project budget, and planning documentation. With the exception of the Police Precinct Refresh project, the area director's sign-off for a review

and approval of the project information package was documented for each project.

Lack of Documentation Clouds How Project Safety, Schedule, and Budget Risks Were Controlled

Planning and Development staff did not consistently maintain required project documentation for various elements of the project lifecycles according to policy guidelines. We were unable to locate planning documentation, preconstruction and construction meeting minutes, and critical safety documents across the four sampled projects to determine whether staff managed related schedules and safety risks. We also noted in our review of payment applications that checklists were not consistently present or accurately completed, schedule of value approvals were missing, and some of the invoices were missing supporting documentation to validate the amount requested.

During our oversight testing, we observed that operations and maintenance manuals, as well as activation plans, were not compiled and approved for any of the sampled projects. Planning and Development staff also did not consistently ensure the design phase was reviewed across projects according to policy guidelines or contract terms. Additionally, request for information approvals did not align with current policy, and staff approved incomplete inspection daily reports. Also, Planning and Development staff did not consistently adhere to the program's closeout procedures, which could lead to staff closing projects in PMWeb before all closeout tasks are completed.

To better control related project risks, we recommend the airport general manager require the Planning and Development staff maintain project documentation for all projects in a centralized location. We also recommend the airport general manager require staff to follow established program procedures and contract terms consistently across projects regarding safety non-compliance forms, inspection daily reports, requests for information, and design reviews. Staff should also develop and use review checklists as part of the design review process and update related policies and follow procedures to ensure all project documentation has been completed and approved and projects are closed out timely in PMWeb.

Critical safety records were missing from project files. We tested 17 controls regarding safety management, including the review and approval of the contractor safety and health plan, employee safety orientation training, safety coordinator's daily report, and notices of safety non-compliance forms. The contractor safety and health plan was not present when we reviewed controls for one of four sampled

projects. Contract terms state the contractor is to submit the plan for approval to the engineer before starting construction work. The employee safety orientation training documentation was not present for three of four sampled projects—the Police Precinct Refresh, Concourse E-CUP, and NIP Harvard Avenue projects. Employee safety training documentation indicates that the employee has received the training required to complete the work of the project. The safety coordinator's daily report was missing for two of four sample projects—the Police Precinct Refresh and the Concourse E-Cup projects.

We also assessed safety management processes by determining whether safety non-compliance forms were completed and reviewed according to policies. The safety non-compliance form is issued to notify the contractor of work that did not conform with contract requirements. The contractor, in return, is required to provide corrective actions that should be reviewed and accepted by the program safety director, safety coordinator, and resident engineer. For the Demolition of Sheraton Hotel project, we located three safety non-compliance forms, but found one of the forms was not signed according to policy guidelines.

The city established a construction safety and health plan to promote safety, minimize risks, and control hazards associated with construction projects at the airport. Best practices also suggest that officials should implement processes to ensure workers' safety is a priority on worksites, as conditions can change rapidly, and hazards can create unexpected project risks. We recommend the airport general manager require Planning and Development staff to ensure construction safety and health plans and related documentation are approved prior to beginning construction work and maintained in project files. We further recommend the airport general manager have Planning and Development staff confirm safety non-compliance forms are approved according to policy to ensure contractors have proposed appropriate corrective actions.

Meeting minutes and planning documentation help keep project milestones transparent. Documentation of project planning, preconstruction, and construction progress meetings is needed to maintain clear communication with staff. It also helps to keep project milestones on schedule while adhering to scope, deliverables, and other contract requirements. We tested several controls related to design oversight, project startup and activation, and ongoing project management. We found that staff did not maintain all the required project documentation—planning documentation and preconstruction meeting agendas were not present for two projects. Also, Planning and Development staff could not locate the construction progress meeting minutes for one project. The construction management support

services preliminary staffing plan that accompanies schematic or construction document project information packages was not present for one project. According to the Planning and Development policy, staff should prepare construction progress meeting minutes for review.

We found a few exceptions in processes for pay application review and approval. Aviation's policies state that payment application checklists should be completed and reviewed along with supporting documentation. The project manager, resident engineer, and invoice administrator checklists were not consistently present and accurately completed across the sampled projects. We were unable to locate the project manager checklist for one of the design invoices. The resident engineer checklist was missing for 3 of 14 (21%) construction invoices we reviewed for the sampled projects. The project manager checklist was included as part of the review, but this checklist does not include the same requirements as the resident engineer checklist for validation purposes (see Exhibit 9). The resident engineer's and contractor's approval of the schedule of values were missing for three invoices paid under one project, the Concourse E-Cup project. We found one invoice we reviewed was not fully supported with documentation to validate the amount requested for payment, amounting to nearly $ 118,000 requested from the domestic line item for the Police Precinct Refresh project. We recommend the airport general manager require staff to consistently follow procedures requiring documentation of construction progress meeting minutes and payment application processes.

Exhibit 9: Resident Engineer Performs More Review than the Project Manager When Validating Pay Application Documentation

ATLNEXT

Project Manager Pay Application Checklist

Contract Number:		Project Name:	
Task Order Number:		Pay Application Number:	
WBS Number:			

	ITEM DESCRIPTION:	Y, N, NA
1	Only Work authorized by approved Contract/Task Orders, Change Orders, and Project Allowance Authorization is included in the current invoice. Back-up is attached.	
2	Work was accomplished for which payment was requested.	
3	Payment amounts have not accelerated past the schedule of values.	
4	Scope is within contract requirements.	
5	Deliverables/Submittals received during pay period are acceptable.	
6	Reimbursable Expenses have not exceeded the approved amounts. Back-up documentation is included, if required.	
7	EBO report submitted in accordance with Contract Requirements	
8	Monthly Report has been submitted and is acceptable.	
9	Monthly Schedule has been submitted and meets contractual requirements.	
10	If Contract Milestones have changed; a CO is being processed to adjust the completion dates(s). 1292___-____	
11	If Final Payment - Close-out documents are approved	

Comments:

| Project Manager Signature | | Date | |

ATLNEXT

Resident Engineer Pay Application Checklist

Contract Number:		Project Name:	
Task Order Number:		Pay Application Number:	
WBS Number:			

	ITEM DESCRIPTION:	Y, N, NA
1	Only Work authorized by approved Contract/Task Orders, Change Orders and Project Contingency/Allowance is included in the current invoice. Back-up is attached.	
2	Work was accomplished for which payment was requested.	
3	Quantities have been documented.	
4	Payment amounts have not accelerated past the schedule of values.	
5	Deliverables/Submittals received during this pay period are acceptable.	
6	Baseline Schedule has been submitted and approved.	
7	Progress As-Builts are being kept current by the Contractor.	
8	Update of Schedules / Monthly Reports are approved.	
9	Daily Inspection Reports and Daily Test Reports are approved.	
10	If Contract Milestones have changed; a CO is being processed to adjust the completion date(s). 1292___-____	
11	Monthly reports submitted in accordance with Contract Requirements. *Name of Reports:*	
12	Bill of Sale, as well as supporting documentation, as applicable, is attached for payment of Stored Material.	
13	Affidavit and Waivers of Lien from Prime and all active Subcontractors are attached to invoice.	
14	Amounts withheld, if any, are as governed by the Contract/Task Order. A copy of the notifying letter to the Contractor is within the Pay Application Backup.	
15	If Partial Reduction of Retainage is requested, written authorization is attached.	
16	Certified payrolls, if required, have been submitted in accordance with Contract requirements.	
17	If Final Payment, Consent of Surety, Final Waiver of Lien, and Final Acceptance forms are attached.	
18	If Final Payment, Close-out documents and all corrections are approved.	
19	Supporting Documentation is within the Payment Application package.	

Comments:

| Resident Manager Signature | | Date | |

Source: Aviation Planning & Development Policies & Procedures for ATLNext Capital Project Program, March 2021

Project approvals and inspections help to ensure that costs are within the project budget. We tested construction oversight controls and found that many were implemented, but that current practice does not always match policies. Planning and Development's Inspection of Contractor Work desktop procedure states the inspector is to document administrative requirements in terms of weather, equipment, and staff. We tested for evidence of daily reporting by field inspectors in a 30-day period for each sampled project to identify whether inspection reports were submitted to the resident engineer for approval in PMWeb. We reviewed 55 inspection daily reports across the Police Precinct Refresh, Demolition of Sheraton Hotel, and NIP Harvard Avenue projects. We did not identify any inspection daily report records in PMWeb for the Concourse E-CUP project; although contract terms state the contractor is required to inspect each job site. We found that all of the inspection daily reports we reviewed were approved by the resident engineer; however, most were incomplete as the field inspector either did not document labor hours and equipment usage or attach photo evidence consistently of work activities at the job site. We also found the assigned field inspectors did not complete inspection daily reports for

eight workdays for the Police Precinct Refresh project during our review period of August 2020 or for two workdays in the month of May 2022 for the Demolition of Sheraton Hotel project.

Best practices suggest site observations should occur to verify that construction work complies with contract plans and specifications and to ensure the quality and safety of the construction process. We recommend the airport general manager require Planning and Development staff to follow policies regarding documenting administrative requirements on inspection daily reports before they are submitted for approval. We also recommend the airport general manager ensure that staff include photo evidence in their daily inspection reports, and make sure documentation of activities and worksite conditions are available. Staff should establish processes to make certain that these reports are completed for each workday in compliance with the terms outlined in the contract.

Most design oversight controls were implemented across our sampled projects; however, some documentation is missing. Review of design submittals helps to minimize design errors and ensure building plans are clear before contract documents are submitted for solicitation. Planning and Development's design review process states that the minimum review phases for projects are schematic design, design development, construction document, and final design reviews. The policy explains that the reviews are intended to evaluate the adequacy of the design and the deliverables for completion, clarity, and format. The construction manager or resident engineer is responsible for reviewing design submittals and providing comments to the service provider for response. If the issues raised require further discussion, the project manager schedules a review comments meeting to address them.

Design submittals were not required for the Police Precinct Refresh and Demolition of Sheraton Hotel projects, as the Project Approval Committee approved both projects to bypass the design phase, since neither project required design services. We found that review comments were submitted for three of four required design review phases for the Concourse E-CUP project, but two of the submittals were incomplete, based on contract terms. We did not identify review comments for the final design phase of the project. Also, Planning and Development staff did not provide the required design submittals or review comments according to policy for the NIP Harvard Avenue project. We found that staff are not using plan review checklists, as suggested by best practices, to ensure that consultants submit all required deliverables and submittals meet contract requirements. We recommend the airport general manager require Planning and

Development staff to conduct project design reviews according to policy and contract terms. We also recommend that staff be required to develop and use review checklists as part of the design review process, and update written policies and procedures to reflect the use of those checklists during plan reviews.

Planning and Development staff did not consistently follow project closeout procedures. Aviation's procedures include steps to close out purchase orders and construction contracts. The procedure directs staff to use a closeout checklist to record the completion of project activities. The checklist should be signed by the project manager, design manager, and resident engineer and included as support with the final pay application (see Exhibit 7). We found that Planning and Development staff did not maintain project closeout checklists in PMWeb or EPMS for the Police Precinct Refresh, Concourse E-CUP, and NIP Harvard Avenue projects. We also found that the project closeout checklist was incomplete for the Demolition of Sheraton Hotel project, as it does not document who completed the form or an approval.

Staff told us the closeout checklist template that is in the policy is only intended to be a guide and is discarded after project closeout; instead, the staff should attach the project manager's pay application checklist to the final invoice as a closeout checklist. But that checklist does not list detailed closeout tasks to ensure all project activities are completed before closing. According to the project closeout procedure, the project manager, resident engineer, and design manager are to ensure all appropriate items on the closeout checklist are complete, which include ensuring contract requirements are met and applicable documents are complete and submitted. We recommend the airport general manager have Planning and Development staff route the project closeout checklist through PMWeb for approval.

We found that the purchase order closeout form for the construction phase of the Demolition of Sheraton Hotel project was not included in project files. The purchase order had not been closed out in PMWeb as of August 2023, but according to the ATLNext program schedule, the project ended on March 30, 2023, and the purchase order was closed in ATLCloud in April 2023. According to the closeout procedure, the invoice administrator is to prepare, complete, and route the purchase order closeout form for approval when notified that the project is ready to close. According to the GFOA (Government Finance Officers Association), officials should finalize project activity within all systems upon project completion and confirm that the project is appropriately closed out. We recommend the airport general manager require Planning and Development staff follow procedures to ensure all project

documentation has been completed and projects are closed out timely within PMWeb.

In testing construction oversight, we also found that Planning and Development staff did not ensure that operations and maintenance manuals and activation plans were compiled and approved for three of four sampled projects, as required by program policies. The Demolition of Sheraton Hotel project did not require these documents since this was a demolition project and the building would not be rebuilt. Policies state that the construction manager or resident engineer are to review the operations and maintenance manuals and coordinate reviews of the manuals with other parties. This process is in place to ensure the manuals comply with contract requirements before being transferred to Asset Management and Airport Maintenance. Best practices suggest the manuals help to provide maintenance personnel with detailed guidance on extending asset lifecycles, minimizing unplanned shutdowns, reducing maintenance costs, and keeping workers safe.

Additionally, Aviation's policies state that the Operational Readiness, Activation and Transfer team should collaborate to ensure all facilities, systems, start-up processes, and operations and maintenance procedures satisfy expectations upon acceptance of the project and continue during operations. As a project nears completion, the project lead is to develop and distribute an activation plan to the stakeholders for review and comment. The team verifies that project tasks are completed, systems and functions are operational, testing, trials, and training are successfully completed, and contingency plans are ready for execution. We did not find any activation plans in PMWeb or the Enterprise Project Management System for the four sampled projects and staff told us there was no record of the plan for any of the projects. We recommend the airport general manager require Planning and Development staff ensure operations and maintenance manuals and operational readiness, activation, and transfer plans are developed, approved, and distributed according to contract and program requirements.

A Central Repository Should Ensure Documents Are Accessible and Organized

Although Planning and Development staff told us that PMWeb is the current project management tool that is used as a central repository for housing project documentation, all documents were not housed there. During our testing, we found that some project documentation was maintained in the legacy system (Enterprise Project Management System) or one of the other systems used by Aviation, for example, the Sages system, and not transferred over to PMWeb. In other cases,

documentation was completely missing. Best practices suggest using a central repository to store, organize, and access all project documents. A central repository would also help to avoid confusion or duplication, and keep track of all files, versions, and updates. Planning and Development staff told us the Enterprise Project Management System has been fully implemented to ensure all project documentation is captured within the system.

Controls Over Change Management Process Should Be Strengthened

We tested change management controls, including change documentation and approvals, and found that many were implemented, but current practice does not always match policies and procedures. The program's process requires changes to be initially documented on a change request form for review and approval by the Change Review Board or area director, and resulting modifications to the contract or task order should be captured on the contract/task order change form. We identified inconsistencies in required documentation for change order approvals across the sampled projects. We recommend the airport general manager require Planning and Development staff update change management policies to be consistent with current practice and ensure change documents are accurate, complete, and supported prior to approval.

Procedures exist for allowance work authorization workflow approvals; however, current practices do not always follow policy. We also found instances where the allowance work authorizations for a sampled project were not well supported according to contract terms. We recommend the airport general manager require Planning and Development staff to ensure allowance work authorizations are approved according to procedures and are consistent with contract requirements.

Staff followed procedures in almost every change order we sampled. We found that supporting documents were generally attached to the change requests we reviewed, with some exceptions. The policy states that the project manager or designee should attach the project contingency history form to the change request for review by the area director and consideration by the CRB. We found that 7 of 11 (63.6%) change orders we reviewed either had incomplete forms attached or the form was missing.

Also, each change request we reviewed was supported by the contract task order change form and contractor-submitted documentation, but resident engineer and design manager reviews and approvals were missing on these forms. We also found some sections of the form were

not consistently completed, and some required supporting documents required by policy were not attached. Staff told us that the policy is not clear regarding resident engineer and design manager reviews and required support, and agreed the policy should be modified. We recommend the airport general manager require Planning and Development staff update change management policies to be consistent with current practice and ensure change documents are accurate, complete, and supported prior to approval.

Allowance work authorizations were approved without adequate supporting documentation. The construction phase includes procedures and a graphical process flow for reviewing and approving project allowances (see Exhibit 10).

Exhibit 10: Project Allowance Work Authorizations Have Several Layers of Review and Approval

Resident Engineer or Design Manager initiates work authorization

Contractor uploads attachments into PMWeb to support work authorization request

Project team reviews work authorization: Project Manager, Design Manager, Project Estimator, Controls Specialist, and Invoice Administrator request

Area Director approves work authorization
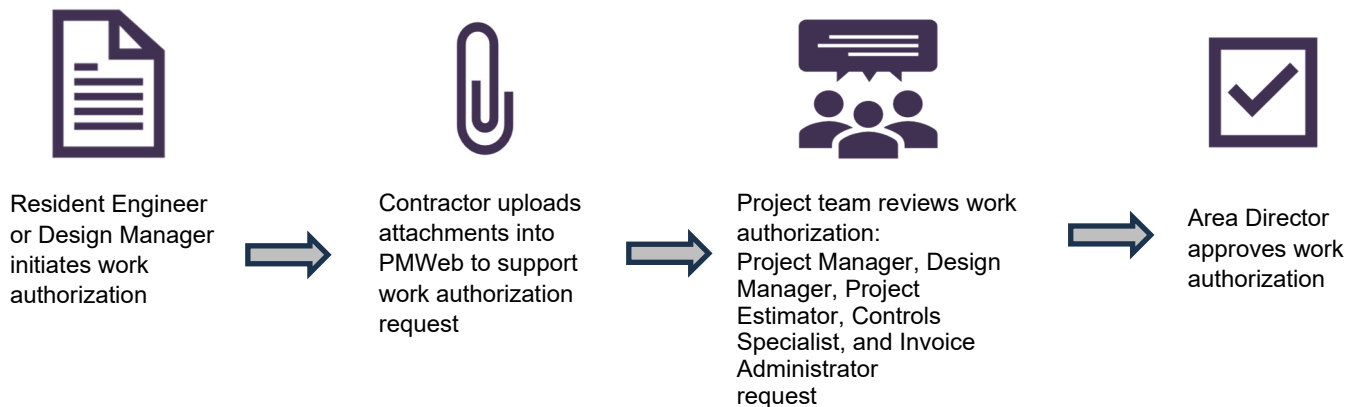
Source: Auditor developed process flow based on Aviation Planning & Development Policies & Procedures for ATLNext Capital Project Program, March 2021

When a work authorization is required to use a project allowance, a submittal process in PMWeb allows reviews and approvals to take place electronically. We tested seven authorizations across the Police Precinct Refresh, Demolition of Sheraton Hotel, and NIP Harvard Avenue projects. We did not locate any authorizations for the Concourse E-CUP project. Forms were submitted for all of the seven records we reviewed; however, signatures were incomplete—all seven were missing signatures from the design manager, project estimator, controls specialist, and invoice administrator. Each work authorization was reviewed by the project manager with final approval by the area director.

We also found that 2 of 3 (66.7%) work authorizations issued for the NIP Harvard Avenue project were not supported consistent with contract

terms. The project's task order states, as part of the pay application process, the contractor is required to submit a monthly accounting to the engineer for approval of the number of daily per diem cards purchased. Additionally, the contractor should provide the date that per diem cards were transferred including a work plan showing the total number of hours of site security provided. We could not locate information from the contractor to support $208,577.83 in per diem cards issued to tenants or documentation to support $3,257.08 for security hours at the work site. We recommend the airport general manager require Planning and Development staff to ensure work authorizations are approved according to policy. We also recommend the airport general manager require Planning and Development staff to ensure work authorizations contain supporting documentation as required by contract terms.

Policy Updates Would Clarify Business Processes and Accountability

While the ATLNext program has controls in place that detail its business processes and note accountability in the performance of these tasks, written policies should agree with the current practices of executives and staff. We found that several written policies regarding required approvals and the use of specific forms or procedures do not align with current practices. The estimate of planning document is no longer necessary to proceed to the initiation phase; however, it is required in the policy. These inconsistencies between policies and current practices can be addressed through routine review. By updating policies, staff can strengthen consistencies across business processes and increase accountability. We recommend the airport general manager require Planning and Development staff to update policies and procedures to reflect current practices and develop a schedule to ensure annual reviews occur.

Policies and procedures for the ATLNext program do not reflect current practices. We found the concept review form and estimate of planning document are required to proceed to the planning phase. Staff told us the estimate of planning document was used before the implementation of ATLNext and has been replaced by the concept review form; however, the policies do not reflect this current practice. Current practices have evolved and are not clear in written policy. Clarity could be improved for example by removing procedures that are no longer used, such as replacing the Estimate of Planning process with the Concept Review Form.

Outdated procedures increase the risk of improper or inconsistent business practices and should be periodically reviewed to ensure current processes are clearly documented.

According to the GAO (U.S. Government Accountability Office) Standards for Internal Control in the Federal Government, officials should periodically review and update policies, procedures, and control activities for relevance and effectiveness to reflect significant changes in an entity's process. We recommend the airport general manager require Planning and Development staff to update policies and procedures to reflect current practices and develop a schedule to ensure annual reviews occur.

A Potential Conflict of Interest Exists Between Planning and Development Senior Management and Airline Staff

In 2016, Aviation entered into a 20-year Atlanta Use & Lease Agreement with most airlines serving the city and a key component of the agreement is the capital improvement program. According to the agreement, the city is responsible for reporting statuses of approved and exempt projects to two oversight airline committees—the Project Implementation Committee and the Planning & Development Committee. These provisions ensure the oversight committees are well-informed of all approved and exempt project statuses. We identified a potential conflict of interest between Planning and Development staff senior management and a member of both airline committees. The Ethics Office provided oral advice to Aviation staff in September 2019 regarding a similar situation. We recommend the airport general manager direct the staff to seek advice from the Ethics Office when potential conflicts occur.

We reviewed meeting minutes for one of the project's presentations to the Project Implementation Committee and identified a potential conflict of interest between a Planning and Development senior staff member and a member of both committees, as a spousal relationship exists. One of the Planning & Design Committee representatives is Planning and Development's assistant general manager, who is responsible for providing updates and recommendations regarding projects to the Project Implementation Committee. This situation was addressed by the Ethics Office in 2019, and the Ethics Officer advised that the Planning and Development assistant general manager should disclose their spousal relationship to superiors. In addition, if any decisions for a project involving the spouse come to the employee's attention, it would constitute a personal interest in the project, and the employee should recuse and allow someone else to handle project

decisions. We recommend that the airport general manager direct the Planning and Development assistant general manager to seek advice from the Ethics Office when potential conflicts occur. We have also referred this issue to the Ethics Office for further review.

Recommendations

In order to align policies and procedures with best practices, the airport general manager should ensure that Planning and Development staff:

1. formalize the current design-to-cost methodology to establish a policy and procedure for design-to-cost and value engineering practices

2. update design review policies and require staff to use plan review checklists during the design submittal process

3. ensure that processes are reinforced to guarantee project staff participation in ongoing safety training programs for capital construction projects

4. document their current methodology regarding mobilization and demobilization activities that would be applicable to the diverse nature of the projects

5. update closeout policies to better align with best practices regarding the use of closeout checklists and construction closeout meetings

In order to ensure files related to a project are available for review, the airport general manager should

6. require Planning and Development staff to ensure construction safety and health plans and related documentation are approved prior to beginning construction work and maintained in project files

7. require the Planning and Development staff to consistently follow procedures requiring documentation of construction progress meeting minutes and payment application processes

8. require Planning and Development staff route the project closeout checklist through PMWeb for approval

In order to ensure policies and procedures are updated and consistent with current practices, the airport general manager should

9. require Planning and Development staff to develop and use review checklists as part of the design review process, and update written policies and procedures to reflect the use of those checklists during plan reviews

10. require Planning and Development staff update change management policies to be consistent with current practice and ensure change documents are accurate, complete, and supported prior to approval

11. require Planning and Development staff to update policies and procedures to reflect current practices and develop a schedule to ensure annual reviews occur.

12. ensure that Planning and Development staff develop a formal process to document the diversity manager's signature on the specific Equal Business Opportunity report attached to the pay application

In order to consistently apply project management tools according to contract terms and the ATLNext program's procedures, the airport general manager should

13. have Planning and Development staff confirm safety non-compliance forms are approved according to policy to ensure contractors have proposed appropriate corrective actions

14. require Planning and Development staff to follow policies regarding documenting administrative requirements on inspection daily reports before they are submitted for approval

15. ensure Planning and Development staff include photo evidence in their daily inspection reports, and make sure documentation of activities and worksite conditions are available.

16. require Planning and Development staff to conduct project design reviews according to policy and contract terms

17. require Planning and Development staff to follow procedures to ensure all project documentation has been completed and projects are closed out timely within PMWeb

18. require Planning and Development staff to ensure work authorizations are approved according to policy

19. require Planning and Development staff to ensure work authorizations contain supporting documentation as required by contract terms

20. ensure operations and maintenance manuals and operational readiness, activation, and transfer plans are developed,

approved, and distributed according to contract and program requirements

In order to avoid conflict of interest issues regarding project management decisions, the airport general manager should

21. direct the Planning and Development assistant general manager to seek advice from the Ethics Office when potential conflicts occur

Appendices

Appendix A: Management Review and Response to Audit Recommendations

Report # 23.06	Report Title: Aviation Capital Projects	Date: March 2024

Recommendation 1:	Risk Category:	Response:
We recommend the airport general manager formalize the current design-to-cost methodology to establish a policy and procedure for design to cost and value engineering practices.	Cost Control	**Agree**

Related Findings:
1. Current value engineering practices are not fully documented in written procedures. While staff told us they use a design-to-cost methodology that triggers value engineering exercises when a project's design cost exceeds the established budget, this practice is not documented in policy.

Currently, P&D enforces a "Design-to-Cost" methodology where design consultants are required to design the original project construction budget. Our Design-to-Cost methodology includes:	**Current Status:** Implemented
1. Initial Budget Setting: At the beginning of a project, a budget is established based on the project's goals and requirements. This budget serves as a key constraint for the design phase.	
2. Design Phase: Design consultants or teams work on creating a design that meets the project's requirements while staying within the established budget. The emphasis is on cost-effective solutions and efficiency.	
3. Cost Monitoring: Throughout the design process, the cost is continuously monitored at 30%, 60%, and 90% to ensure that the design remains within budget. This requires close collaboration between the design team and the P&D project management team.	
4. Value Engineering: If the design exceeds the budget, value engineering exercises are initiated. Value engineering involves analyzing the design to identify areas where costs can be reduced without compromising on quality or functionality. This might involve using alternative materials, simplifying the design, or finding more cost-effective manufacturing or construction methods.	
5. Finalizing Design: The design is revised and finalized only after it aligns with the budget. This iterative process ensures that the project remains financially viable while still achieving its objectives.	
DOA-P&D acknowledges the importance of and agrees to implement a policy and procedure to formalize the Design-to-Cost methodology. Anticipated development, training, and rollout by April 2024.	

Business Owner: Planning & Development	**Estimated Implementation Date (M/Y):** April 2024

Additional Comments:

Recommendation 2:	Risk Category:	Response:
We recommend the airport general manager update design review policies and require staff to use plan review checklists during the design submittal process.	Process Improvement	**Agree**

Related Findings:
1. Planning and Development policy does not contain guidance on the use of plan review checklists during design reviews to ensure that consultants submit all required deliverables and submittals meet contract requirements.

Proposed Action:	Current Status:
Currently, the Department of Aviation-Planning and Development (DOA-P&D) uses the software program SAGES to manage design reviews for projects. This system manages all of the correspondence, notes, and checklists required to manage the design process. This system was not fully implemented for some of the projects reviewed by the City of Atlanta Auditors. P&D has implemented a new Policy and procedure for design review. Full implementation, re-training, and rollout will be completed by April 2024.	Implemented

Business Owner: Planning & Development	Estimated Implementation Date (M/Y): April 2024

Additional Comments:

Recommendation 3:	Risk Category:	Response:
We recommend the airport general manager ensure that processes are reinforced to guarantee project staff participation in ongoing safety training programs for capital construction projects.	Process Improvement	**Partially Agree**

Related Findings:
1. We did not identify program policies that discuss training requirements for continuing education programs on construction safety.

Proposed Action:	Current Status:
Currently, DOA-P&D conducts a safety training program for all site construction personnel on a continuous basis. This training program is currently not within a policy and procedure but is a part of DOA-P&D Safety Culture. In addition, P&D holds weekly classes through ATLNext University, which covers all of DOA-P&D and the ATLNext Program policies and procedures and training initiatives. DOA-P&D acknowledges the importance of and agrees to implement a formal continuing educational policy and procedure for a safety training program. Anticipated development, training, and rollout by April 2024.	Partly Implemented

Business Owner: Planning & Development	Estimated Implementation Date (M/Y): April 2024

Additional Comments:

Recommendation 4:	Risk Category:	Response:
We recommend the airport general manager require Planning and Development staff to document their current methodology regarding mobilization and demobilization activities that would be applicable to the diverse nature of projects.	Cost Control	**Partially Agree**

Related Findings:
1. Written policies and procedures do not address mobilization or demobilization project activities. Staff told us these activities are addressed in individual contracts.

Proposed Action: Currently, the DOA staff meets to discuss each project's mobilization and demobilization requirement and incorporates the language into the contract documents. Our projects are diverse in scope, nature, and delivery method. The DOA-P&D believes this is a better approach than creating one standard procedure; however, we will formalize our current methodology into a procedure. Anticipated development, training, and rollout in April 2024.	**Current Status:** Partly Implemented
Business Owner: Planning & Development	**Estimated Implementation Date (M/Y):** April 2024

Additional Comments:

Recommendation 5:	Risk Category:	Response:
We recommend the airport general manager require Planning and Development staff to update closeout policies to better align with best practices regarding the use of closeout checklists and construction closeout meetings.	Process Improvement	**Partially Agree**

Related Findings:
1. Staff told us the sample project closeout checklist in the policy is not currently used and the procedure lacks guidance for the use of construction closeout meetings.

	Current Status:
Proposed Action: At present, each project's scope undergoes monthly validation through on-site inspections conducted by the project/construction management teams, comparing it against the defined scope of work for the construction. This monthly process involves the team performing field verifications to confirm that the work completed aligns with the contractual specifications. The project checklist referenced serves as a summary tool, highlighting key contractual elements that need to be addressed, such as the receipt of as-built drawings, Operations Manuals, and similar items. DOA-P&D currently uses a checklist for all projects, including project closeout. DOA-P&D will conduct refresher training for the staff. Anticipated completion April 2024	Implemented

> 4.2.3 The Project Closeout Checklist (Appendix A) is the tool to be utilized by the PM, DM, and RE to ensure all requirements of this procedure has been ensured.
>
> > 4.2.3.1 The Checklist should be used to record the completion of project checklist activities throughout the project process. 'Appendix A' is a sample and may be modified as needed to be project specific.
> >
> > 4.2.3.2 A copy signed by the PM, DM, and RE should be included as backup to the final pay application.
> >
> > 4.2.3.3 The checklist is not a record to be placed in Document Control.

	Estimated Implementation Date (M/Y):
Business Owner: Planning & Development	April 2024

Additional Comments:

Recommendation 6:	Risk Category:	Response:
We recommend the airport general manager ensure that Planning and Development staff develop a formal process to document the diversity manager's signature on the specific Equal Business Opportunity report attached to the pay application.	Process Improvement	Disagree

Related Findings:
1. We found the Equal Business Opportunity reports were attached to the pay applications we reviewed. Aviation staff told us the diversity manager verifies the accuracy of the equal business opportunity data against system data reported by the Office of Contract Compliance to ensure the consultant or contractor has met contractual requirements during the invoice period; however, we were unable to confirm the documented approval by the diversity manager on the attached Equal Business Opportunity reports for each of the planning, design, and construction pay applications we reviewed. We did not perform compliance testing of the Equal Business Opportunity Report as it was not within our scope.

Proposed Action: At present, the Diversity Managers' review/concurrence is captured in our electronic workflow process. Planning and Development does not agree that the Diversity Managers' signature is required as part of the invoice approval process.	Current Status:

Business Owner:	Estimated Implementation Date (M/Y):

Additional Comments: No Action Required

Recommendation 7:	Risk Category:	Response:
We recommend the airport general manager require Planning and Development staff to ensure construction safety and health plans and related documentation are approved prior to beginning construction work and maintained in project files.	Process Improvement	Partially Agree

Related Findings:
1. The Contractor Safety and Health Plan was not present when we reviewed controls for the Concourse E-Cup project. Contract terms state the contractor is to submit the plan for approval to the engineer before starting construction work.

Proposed Action: At present, Planning and Development require all contractors to submit their safety and health plans for approval before starting work. We fully believe that this was done for the project; however, the documentation was not located during the audit. DOA, Planning, and Development will conduct refresher training for the staff. Anticipated completion: April 2024.	Current Status: Implemented

Business Owner: Planning & Development	Estimated Implementation Date (M/Y): April 2024

Additional Comments:

Recommendation 8:	Risk Category:	Response:
We recommend the airport general manager have Planning and Development staff confirm safety non-compliance forms are approved according to policy to ensure contractors have proposed appropriate corrective actions.	Process Improvement	**Agree**

Related Findings:
1. For the Demolition of Sheraton Hotel project, we located three safety non-compliance forms as part of our sample testing but found one of the forms was not signed according to policy guidelines.

Proposed Action: DOA, Planning, and Development will conduct refresher training for the staff. Anticipated completion: April 2024	**Current Status:** Implemented
Business Owner: Planning & Development	**Estimated Implementation Date (M/Y):** April 2024
Additional Comments:	

Recommendation 9:	Risk Category:	Response:
We recommend the airport general manager require the Planning and Development staff to consistently follow procedures requiring documentation of construction progress meeting minutes and payment application processes.	Process Improvement	**Partially Agree**

Related Findings:

1. While reviewing pay applications, we found:
   -project manager, resident engineer, and invoice administrator checklists were not consistently present and accurately completed across the sampled projects
   -the resident engineer's and contractor's approval of the schedule of values was missing for three invoices paid under one project
   -One invoice we reviewed was not fully supported with documentation to validate the amount requested for payment, amounting to nearly $118,000 requested from the domestic line item for the Police Precinct Refresh project
   -Planning and Development staff could not locate the construction progress meeting minutes for the Concourse E-Cup project

Proposed Action: The Department of Aviation-Planning and Development (DOA-P&D) requires its staff to rigorously follow the program's established policies and procedures regarding storing project documentation in the Enterprise Program Management System (EPMS). As mentioned during your audit, the EPMS, which includes PMWeb, is fully implemented. All project documentation is captured in this system. Additionally, all documentation required for payment of invoices was submitted and approved before payment was made. DOA-P&D also agrees to initiate refresher training sessions for its staff, with a target completion date set for April 2024.	**Current Status:** Implemented
Business Owner: Planning & Development	**Estimated Implementation Date (M/Y):** April 2024
Additional Comments:	

Recommendation 10:	Risk Category:	Response:
We recommend the airport general manager require Planning and Development staff to follow policies regarding documenting administrative requirements on inspection daily reports before they are submitted for approval.	Process Improvement	**Agree**

Related Findings:
1. We found most inspection daily reports we reviewed were incomplete as the field inspector did not document labor hours and equipment usage.

Proposed Action: Currently, the Department of Aviation-Planning and Development (DOA-P&D) mandates that staff strictly adhere to the established program policies and procedures, particularly concerning the inspection daily reports. As noted during your audit, the majority of the projects you evaluated were part of the legacy system. It's possible that some data fields might have been omitted during the transition to our new contract administration tool, PMWeb. DOA-P&D acknowledges the need for and agrees to conduct refresher training sessions for the staff, aiming for completion by April 2024.	**Current Status:** Implemented
Business Owner: Planning & Development	**Estimated Implementation Date (M/Y):** April 2024

Additional Comments:

Recommendation 11:	Risk Category:	Response:
We recommend the airport general manager require Planning and Development staff include photo evidence in their inspection daily reports, and make sure documentation of activities and worksite conditions are available.	Process Improvement	**Agree**

Related Findings:
1. When conducting our review of inspection daily reports, we found field inspectors did not attach photo evidence consistently of work activities at the job site. We also did not identify any inspection daily report records in PMWeb for the Concourse E-CUP project although contract terms state the contractor is required to inspect each job site. Additionally, we found the assigned field inspectors did not complete inspection daily reports for six workdays for the Police Precinct Refresh project and two workdays for the Demolition of Sheraton Hotel project during the periods reviewed.

Proposed Action: At present, the Department of Aviation-Planning and Development (DOA-P&D) requires its staff to rigorously follow the program's established policies and procedures, especially regarding the inclusion of photo evidence, if required, in daily inspection reports. As noted during your audit, there is a variance in photo documentation practices: some photos are directly attached to the reports, while others are archived in the EPMS within the project photo file. Recognizing this, DOA-P&D acknowledges the importance of and agrees to initiate refresher training sessions for its staff, with a target completion date set for April 2024.	**Current Status:** Implemented
Business Owner: Planning & Development	**Estimated Implementation Date (M/Y):** April 2024

Additional Comments:

Recommendation 12:	Risk Category:	Response:
We recommend the airport general manager require Planning and Development staff to conduct project design reviews according to policy and contract terms.	Contract Management	**Agree**

Related Findings:
1. We found review comments were submitted for three of four of the required design review phases for the Concourse E-CUP project, but we noted two of the submittals were incomplete according to contract terms. We did not identify review comments for the final design phase of the project. Also, Planning and Development staff did not provide the required design submittals or review comments according to policy for the NIP Harvard Avenue project.

Proposed Action: At present, the Department of Aviation-Planning and Development (DOA-P&D) requires its staff to rigorously follow the program's established policies and procedures, especially regarding the design review process. As mentioned in our audit meetings, sometimes a verbal acknowledgment is given if there are no comments/concerns. Recognizing this, DOA-P&D acknowledges the importance of and agrees to initiate refresher training sessions for its staff, with a target completion date set for April 2024.	**Current Status:** Implemented
Business Owner:	**Estimated Implementation Date (M/Y):** April 2024.

Additional Comments:

Recommendation 13:	Risk Category:	Response:
We recommend the airport general manager require Planning and Development staff to develop and use review checklists as part of the design review process, and update written policies and procedures to reflect the use of those checklists during plan reviews.	Process Improvement	**Agree**

Related Findings:
1. We found review comments were submitted for three of four of the required design review phases for the Concourse E-CUP project, but we noted two of the submittals were incomplete according to contract terms. We did not identify review comments for the final design phase of the project. Also, Planning and Development staff did not provide the required design submittals or review comments according to policy for the NIP Harvard Avenue project.

Proposed Action: At present, the Department of Aviation-Planning and Development (DOA-P&D) requires its staff to rigorously follow the program's established policies and procedures, especially regarding the design review process. As mentioned in our audit meetings, sometimes a verbal acknowledgment is given if there are no comments/concerns. Recognizing this, DOA-P&D acknowledges the importance of and agrees to initiate refresher training sessions for its staff, with a target completion date set for April 2024.	**Current Status:** Partly Implemented
Business Owner: Planning & Development	**Estimated Implementation Date (M/Y):** April 2024

Additional Comments:

Recommendation 14:	Risk Category:	Response:
We recommend the airport general manager have Planning and Development staff route the project closeout checklist through PMWeb for approval.	Process Improvement	**Partially Agree**

Related Findings:
1. During our testing, we found Planning and Development staff did not maintain project closeout checklists for three of four sampled projects and the checklist was incomplete for one sampled project. Staff told us a different checklist is used; however, it does not list detailed closeout tasks to ensure all project activities are completed.

Proposed Action: At present, each project's scope undergoes monthly validation through on-site inspections conducted by the project/construction management teams, comparing it against the defined scope of work for the construction. This monthly process involves the team performing field verifications to confirm that the work completed aligns with the contractual specifications. The project checklist referenced serves as a summary tool, highlighting key contractual elements that need to be addressed, such as the receipt of as-built drawings, Operations Manuals, and similar items. DOA-P&D currently uses a checklist for all projects, including project closeout. Our procedure states that it's not required to be placed in document control.
 	
DOA-P&D will conduct refresher training for the staff. Anticipated completion: April 2024
 	
4.2.3 The Project Closeout Checklist (Appendix A) is the tool to be utilized by the PM, DM, and RE to ensure all requirements of this procedure has been ensured.
 	
    4.2.3.1 The Checklist should be used to record the completion of project checklist activities throughout the project process. 'Appendix A' is a sample and may be modified as needed to be project specific.
 	
    4.2.3.2 A copy signed by the PM, DM, and RE should be included as backup to the final pay application.
 	
    4.2.3.3 The checklist is not a record to be placed in Document Control.
	Current Status:
	
	Implemented

Business Owner:	**Estimated Implementation Date (M/Y):** April 2024
Additional Comments:	

Recommendation 15:	Risk Category:	Response:
We recommend the airport general manager require Planning and Development staff to follow procedures to ensure all project documentation has been completed and projects are closed out timely within Enterprise Project Management System.	Planning and Budgeting	**Agree**

Related Findings:
1. We did not find the purchase order closeout form for the construction phase of the Demolition of Sheraton Hotel project.

Proposed Action: The Department of Aviation-Planning and Development (DOA-P&D) requires its staff to rigorously follow the program's established policies and procedures regarding storing project documentation in the Enterprise Program Management System (EPMS). As mentioned during your audit, the EPMS, which includes PMWeb, is fully implemented. All project documentation is captured in this system. DOA-P&D also agrees to initiate refresher training sessions for its staff, with a target completion date set for April 2024.	Current Status: Implemented
Business Owner: Planning & Development	**Estimated Implementation Date (M/Y):** April 2024

Additional Comments:

Recommendation 16:	Risk Category:	Response:
We recommend the airport general manager require Planning and Development staff to ensure operations and maintenance manuals and operational readiness, activation, and transfer plans are developed, approved, and distributed according to contract and program requirements.	Contract Management	**Agree**

Related Findings:
1. In testing construction oversight, we found that Planning and Development staff did not ensure that operations and maintenance manuals and activation plans were compiled and approved for three of four sampled projects, as required by program policies.

Proposed Action: At present, the Department of Aviation-Planning and Development (DOA-P&D) requires its staff to rigorously follow the program's established policies and procedures regarding providing closeout documentation, including operations and maintenance manuals. As of January 2020, the Department of Aviation-Planning and Development (DOA-P&D) has launched an Operational Readiness and Airport Transition (ORAT) group to ensure operations and maintenance manuals and operational readiness, activation, and transition plans are developed, approved, and distributed according to contract and program requirements for every project.	Current Status: Implemented
Business Owner: Planning & Development	**Estimated Implementation Date (M/Y):** April 2024

Additional Comments:

Recommendation 17:	Risk Category:	Response:
We recommend the airport general manager require Planning and Development staff update change management policies to be consistent with current practice and ensure change documents are accurate, complete, and supported prior to approval.	Process Improvement	**Partially Agree**

Related Findings:
1. During our testing, we found that supporting documents were mostly attached to the change requests we reviewed with some exceptions, such as missing or incomplete Project Contingency History Forms and required approvals.

Proposed Action: Currently, the Department of Aviation-Planning and Development (DOA-P&D) mandates that its staff strictly adhere to the program's established policies and procedures, particularly concerning change documents. The change process is now integrated into PMWeb's workflow to ensure that all necessary documentation is complete and that all required approvals are obtained. Additionally, this document is reviewed in detail each week for final approval by the DOA-P&D Executive Approval Committee. DOA-P&D acknowledges the importance of and agrees to initiate refresher training sessions for its staff, with a target completion date set for April 2024.	**Current Status:** Implemented
Business Owner:	**Estimated Implementation Date (M/Y):** April 2024
Additional Comments:	

Recommendation 18:	Risk Category:	Response:
We recommend the airport general manager require Planning and Development staff to ensure work authorizations are approved according to policy.	Contract Management	**Disagree**

Related Findings:

1. We did not find reviews and approvals from all parties of the project team according to the department's procedures, which included the design manager, project estimator, controls specialist, and invoice administrator.

Proposed Action: No action required – All parties are not required for every work authorization. Our current procedure 4.2.5 states "as appropriate." The project manager is responsible for identifying the support required and will include as they see fit. Additionally, the Invoice Administrator is included in all workflows requiring their approval for payment. 4.2.4 The Design Manager (Design) and/or Resident Engineer (Construction) shall initiate the "Allowance Work Authorization" form within the approved Project Management tool. 4.2.5 The Project Management Team, as appropriate, shall analyze and evaluate the proposal to ensure the scope and amount is within the terms of the Contract/Task Order. The Design Manager, Resident Engineer, and Project Manager shall be in agreement with the scope of work and cost details.	**Current Status:**
Business Owner:	**Estimated Implementation Date (M/Y):**
Additional Comments:	

Recommendation 19:	Risk Category:	Response:
We recommend the airport general manager require Planning and Development staff to ensure work authorizations contain supporting documentation as required by contract terms.	Contract Management	**Disagree**

Related Findings:
1. We found two of three (66.7%) work authorizations that were issued for the NIP Harvard Avenue project were not well supported according to contract terms. We did not find the contractor provided supporting documentation to validate the $208,577.83 in per diem cards issued to tenants or documentation to support $3,257.08 for security hours at the work site.

Proposed Action: This is a multi-step process that includes the approval of the work authorization, which you identified above, and the invoice approval process. The project manager did not include the backup document in the work authorization step but did include the appropriate supporting documentation in the invoice approval process. **No payment can be made to any vendor without the appropriate backup documentation.**	**Current Status:** Implemented
Business Owner: DOA-P&D will conduct refresher training sessions for its staff, with a target completion date set for April 2024	**Estimated Implementation Date (M/Y):** April 2024

Additional Comments:

Recommendation 20:	Risk Category:	Response:
We recommend the airport general manager require Planning and Development staff to update policies and procedures to reflect current practices and develop a schedule to ensure annual reviews occur.	Process Improvement	**Partially Agree**

Related Findings:
During our review, we found program policy updates are needed. Current practices have evolved and are not clear in written policy. Clarity could be improved, for example, by removing procedures that are no longer used, such as replacing the Estimate of Planning process with the Concept Review Form.

Proposed Action: The Department of Aviation-Planning and Development (DOA-P&D) has implemented a semi-annual review of the program's procedures to ensure they remain current and relevant. Additionally, we are committed to providing year-round training for our staff on these policies and procedures. This training will be conducted through ATLNext University and various online courses.	**Current Status:** Implemented
Business Owner: Planning & Development	**Estimated Implementation Date (M/Y):** April 2024

Additional Comments:

Recommendation 21:	Risk Category:	Response:
We recommend that the airport general manager direct the Planning and Development assistant general manager to seek advice from the Ethics Office when potential conflicts occur.	Legal/Regulatory Compliance	**Disagree**

Related Findings:
1. While reviewing meeting minutes for one of the sampled project's presentations to the Project Implementation Committee, we identified a potential conflict of interest between the Planning and Development senior staff and a member of both committees as a spousal relationship exists.

Proposed Action: None - The current Airport Use and Lease Agreement (AULA) contains a capital improvement program (CIP). An aspect of implementing the CIP is conducting a monthly meeting called the Project Implementation Committee (PIC). The PIC is co-chaired by the Department of Aviation's Airport General Manager and the chairman of the Airline Steering Committee (ASC). The Airport General Manager is Balram Bheodari; the chairman of the ASC is Melissa White, the Delta Air Lines Managing Director – Corporate Real Estate. Per the AULA, these two individuals are vested with the authority to make certain decisions on behalf of the City and airlines. There are other staff involved from both parties supporting the PIC meeting, but they are not vested with making any decisions. Thus, no conflicts of interest exist. Additionally, in compliance with the AULA, the Planning & Design Committee is chaired by Tom Nissalke, Airport Assistant General Manager, and Wes Kennedy, Director of the Airline Liaison Team. There are times when one or both of the chairs are absent, and a delegate sits in for them. However, all critical decisions must come to the PIC for final approval. Thus, no conflicts of interest exist.	**Current Status:**
Business Owner:	**Estimated Implementation Date (M/Y):**
Additional Comments:	

Appendix B: We Tested 270 Controls Across Seven Project Lifecycle Elements

Project Lifecycle Elements	Number of Controls Tested Per Project Element	Potential Risks
Quality management—Design Oversight	22	Lack of reviews on design drawings and specifications could result in poor quality or incomplete work.
Quality management—Construction Oversight	46	Contractors do poor quality work, or nonconforming work is overlooked or uncorrected.
Quality management—Construction Oversight Inspection Daily Reports (IDR)	2	Construction work does not comply with plans, specifications, contract requirements, regulations; risk of undetected safety hazards.
Quality management—Construction Oversight Requests for Information (RFI)	9	Information gaps or project task ambiguities remain unresolved.
Project Activation	33	Planning costs are incurred on projects that are not approved.
Ongoing Project Management	16	Risk assessment may not be comprehensive based on trigger threshold. Lack of consistent communication due to not documenting construction progress meetings could lead to gaps in work or deviation from schedule.
Financial Management	17	Risk that budgets are systematically low/costs systematically rise; High soft costs/overhead lead to program budget shortfall
Program Safety	17	Project delays result from potential injuries, safety incidents, and other hazards.
Change management—Construction Changes	32	Unnecessary change orders, increased project costs, schedule delays, and change orders are not approved in compliance with contract terms and policies and procedures. Bond/insurance limits not updated after change order increases contract value.
Change management—Construction Changes (Allowance Work Authorizations)	8	Unapproved work authorizations can result in overbillings and unnecessary scope of work.
Change management—Design Changes	31	Unnecessary change orders, increased project costs, schedule delays, and change orders are not approved in compliance with contract terms and policies and procedures. Bond/insurance limits not updated after change order increases contract value.
Cost management—Planning & Design Invoice Review & Approval	16	Overbilling by consultant leads to overpayment; contractor invoice/payments are not in compliance with contract terms.
Cost management—Construction Invoice Review & Approval	21	Overbilling by contractor leads to overpayment; contractor invoice/payments are not in compliance with contract terms.
	270	Total controls tested per project

Source: Developed by auditors based on testing project controls across four sampled projects within Aviation ATLNext Capital Project Program

Appendix C: Quality Management Controls Tested the Most Out of the Seven Lifecycle Elements

Project Lifecyle Elements	Potential Risks	Domestic Terminal APD Precinct Facility				Demolition of Sheraton Hotel Complex				Concourse E Central Utility Plants (E-CUP) Enhancements				NIP - Harvard Avenue Properties			
		Y	N	P	N/A	Y	N	P	N/A	Y	N	P	N/A	Y	N	P	N/A
Quality Management—Design Oversight	Lack of reviews on design drawings and specifications could result in poor quality or incomplete work.	1	-	-	21	7	-	-	15	12	2	6	2	11	5	4	2
Quality Management—Construction Oversight	Contractors do poor quality work, or nonconforming work is overlooked or uncorrected.	20	9	9	8	22	-	10	14	16	13	12	5	18	12	12	4
Quality Management—Construction Oversight Inspection Daily Reports (IDR)	Construction work does not comply with plans, specifications, contract requirements, regulations; risk of undetected safety hazards.	14	16	14	-	30	4	8	-	26	-	18	-	-	2	-	-
Quality Management—Construction Oversight Requests for Information (RFI)	Information gaps or project task ambiguities remain unresolved.	23	19	-	12	49	-	-	5	-	9	-	-	26	16	-	12
Project Activation	Planning costs are incurred on projects that are not approved.	13	5	11	4	16	3	12	2	11	4	13	5	10	2	13	8
Ongoing Project Management	Risk assessment may not be comprehensive based on trigger threshold. Lack of consistent communication due to not documenting construction progress meetings could lead to gaps in work or deviation from schedule.	7	-	5	4	7	-	5	4	9	2	5	-	9	-	4	3
Financial Management	Risk that budgets are systematically low/costs systematically rise; High soft costs/overhead lead to program budget shortfall.	16	-	-	1	27	1	-	6	7	-	2	8	14	1	-	2

Appendix C: Quality Management Controls Tested the Most Out of the Seven Lifecycle Elements (cont.)

Project Lifecyle Elements	Potential Risks	Domestic Terminal APD Precinct Facility				Demolition of Sheraton Hotel Complex				Concourse E Central Utility Plants (E-CUP) Enhancements				NIP - Harvard Avenue Properties			
		Y	N	P	N/A	Y	N	P	N/A	Y	N	P	N/A	Y	N	P	N/A
Program Safety	Project delays result from potential injuries, safety incidents, and other hazards.	6	10	-	1	9	4	4	-	1	16	-	-	6	9	1	1
Change Management— Construction Changes	Unnecessary change orders, increased project costs, schedule delays, and change orders are not approved in compliance with contract terms and policies and procedures. Bond/insurance limits not updated after change order increases contract value.	35	10	5	14	59	5	6	26	58	8	9	21	52	9	9	26
Change Management— Construction Changes (Allowance Work Authorizations)	Unapproved work authorizations can result in overbillings and unnecessary scope of work.	8	6	-	2	8	6	-	2	-	-	-	8	10	14	-	-
Change Management— Design Changes	Unnecessary change orders, increased project costs, schedule delays, and change orders are not approved in compliance with contract terms and policies and procedures. Bond/insurance limits not updated after change order increases contract value.	-	-	-	31	-	-	-	31	30	17	5	10	-	-	-	31
Cost Management— Planning & Design Invoice Review & Approval	Overbilling by consultant leads to overpayment, contractor invoice/payment not in compliance with contract terms.	-	-	-	16	39	4	5	-	42	3	3	-	41	3	3	-
Cost Management— Construction Invoice Review & Approval	Overbilling by contractor leads to overpayment, contractor invoice/payment not in compliance with contract terms	88	1	11	5	54	-	6	3	30	18	15	-	58	2	3	-

Source: Developed by auditors based on testing project controls across four sampled projects within Aviation ATLNext Capital Project Program

Appendix D: Planning and Development's Capital Project Controls Are Mostly Consistent with Best Practices

Project Lifecycle Elements	Total by Lifecycle Element Across All 4 Projects			
	Y	N	P	N/A
Quality management—Design Oversight	31	10	10	37
Quality management—Construction Oversight	76	34	43	31
Quality management—Construction Oversight Inspection Daily Reports (IDR)	70	22	40	-
Quality management—Construction Oversight Requests for Information (RFI)	98	35	-	37
Project Activation	50	14	49	19
Ongoing Project Management	32	2	19	11
Financial Management	64	2	2	17
Program Safety	22	39	5	2
Change management—Construction Changes	204	32	29	87
Change management—Construction Changes (Allowance Work Authorizations)	26	26	-	12
Change management—Design Changes	30	17	5	103
Cost management—Planning & Design Invoice Review & Approval	122	10	11	16
Cost management—Construction Invoice Review & Approval	230	21	35	8

Legend
"Y" count--Sample results show test of control was satisfied
"N" count--Sample results show test of control was not satisfied (i.e., missing approvals, missing documents, non-compliance with policies/contract terms)
"P" count--Sample results show test of control was partially satisfied (i.e., partial approval, partial supporting documents)
"N/A" count--Test of control did not apply to sample project

Source: Developed by auditors based on testing project controls across four sampled projects within Aviation ATLNext Capital Project Program

Aviation Capital Projects