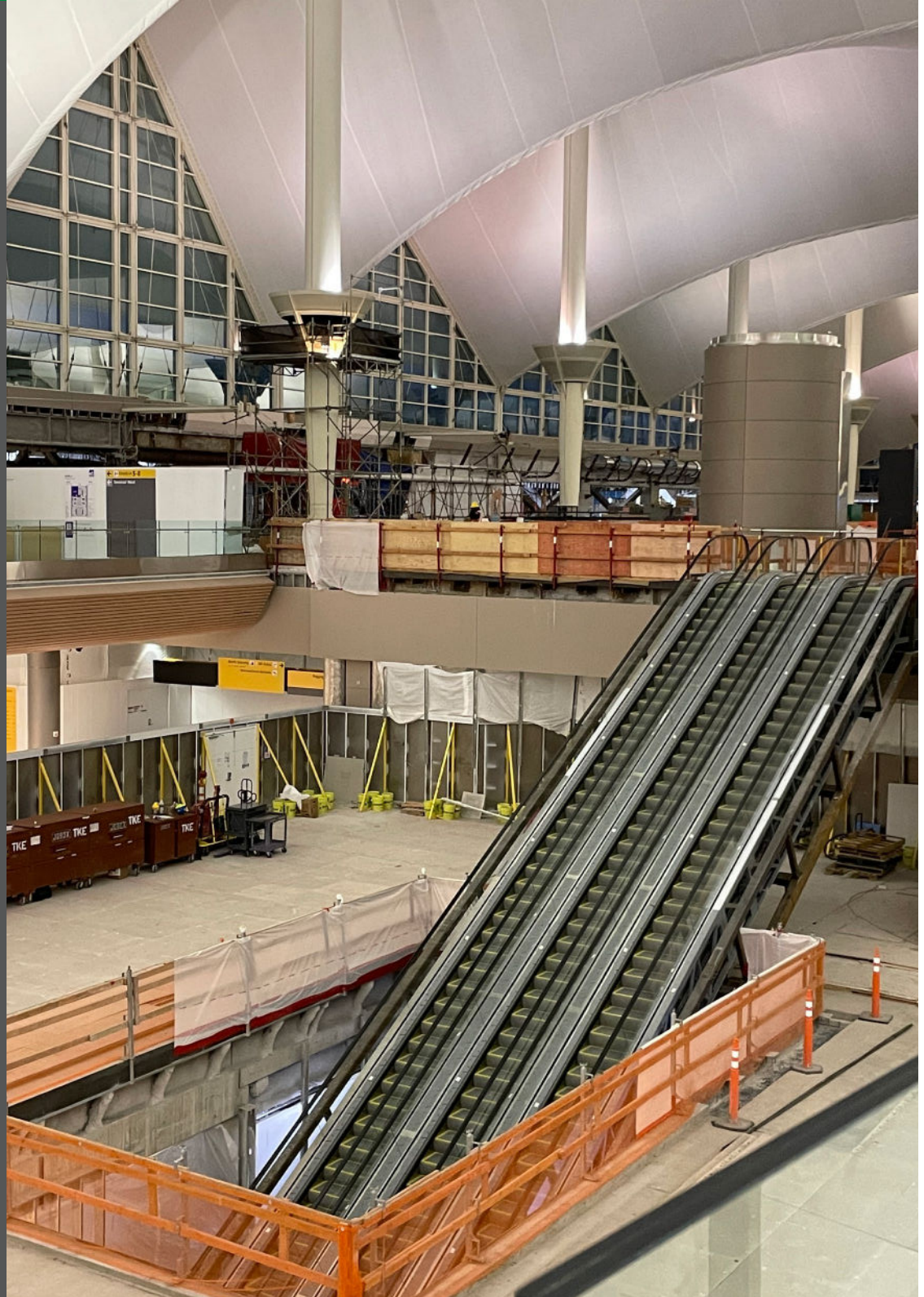


AUDIT REPORT

Denver International Airport *Great Hall Construction*

APRIL 2023



TIMOTHY M. O'BRIEN, CPA
DENVER AUDITOR

OFFICE OF THE AUDITOR
AUDIT SERVICES DIVISION,
CITY AND COUNTY
OF DENVER

Audit Team

Patrick Schafer, CPA, CFE, CIA, MBA, Senior Audit Manager
Carl Halvorson, CIA, Audit Manager
June Samadi, MPH, Lead Auditor
Katie Beverlin, MPA, Senior Auditor
Ben Teska, CPA, Senior Auditor
Stacey Cunningham, M.Ed., Associate Auditor

Methodological Support

Chris Wilson, MPA, Audit Analytics Manager
Daniel Summers, MPA, Data Analytics Senior Auditor

Audit Management

Timothy M. O'Brien, CPA, Auditor
Valerie Walling, CPA, Deputy Auditor
Dawn Wiseman, CRMA, Audit Director

Audit Committee

Timothy M. O'Brien, CPA, Chairman
Rudolfo Payan, Vice Chairman
Jack Blumenthal
Leslie Mitchell
Florine Nath
Charles Scheibe
Ed Scholz

**You can obtain
copies of this
report by
contacting us:**



Office of the Auditor
201 West Colfax Avenue, #705
Denver, CO 80202
(720) 913-5000

Or download and view
an electronic copy by
visiting our website at:
www.DenverAuditor.org.

Cover photo by Denver Auditor's Office staff.

City and County of Denver



TIMOTHY M. O'BRIEN, CPA
AUDITOR

201 West Colfax Avenue, #705, Denver, Colorado 80202
(720) 913-5000 | www.DenverAuditor.org

AUDITOR'S LETTER

April 20, 2023

We audited the current Great Hall construction project at Denver International Airport to determine whether the Special Projects Division's construction management and oversight was adequate to ensure the airport procured its new contractor in a fair, open, and competitive manner and whether the airport overpaid for the contracted work it has received. I now present the results of this audit.

The audit found the airport's management and oversight of the current Great Hall construction project should be strengthened. The Special Projects Division is not ensuring the new contractor, Hensel Phelps Construction Co., complies with all contract terms nor is the division sufficiently overseeing how Hensel Phelps has procured subcontractors — including work Hensel Phelps subcontracted to itself. We identified some instances where procurements seemed unfair or not competitive, as well as instances where the airport was overcharged. Meanwhile, the airport does not have a standard process to select the best project delivery method for its construction projects and ensure consistent management of complex projects like the Great Hall renovations.

I am disappointed airport officials chose to agree with only three of our 10 recommendations. Denver International Airport would be better able to ensure it receives the contracted work it pays for at the best value to the city if it were to implement our recommendations to follow the airport's standard operating procedures for construction procurements and document that process, monitor contractors' subcontracting processes, oversee multi-tiered subcontracted work and awards for self-performed work, and verify construction allowances and general condition costs. Further explanation is in the Auditor's Addendums beginning on [page 63](#).

This performance audit is authorized pursuant to the City and County of Denver Charter, Article V, Part 2, Section 1, "General Powers and Duties of Auditor." We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

We appreciate the leaders and team members in Denver International Airport's Special Projects Division who shared their time and knowledge with us during the audit. Please contact me at 720-913-5000 with any questions.

Denver Auditor's Office

A handwritten signature in black ink, appearing to read "Timothy M. O'Brien".

Timothy M. O'Brien, CPA
Auditor



Great Hall Construction

APRIL 2023

Objective

To determine whether Denver International Airport's Special Projects Division is adequately managing and overseeing the current Great Hall construction project to ensure the airport procured its new contractor in a fair, open, and competitive manner and that the airport is not being overcharged for construction costs.

Background

The Great Hall in Denver International Airport lies beneath the Jeppesen Terminal's tented roof.

Renovations began in July 2018, but the airport terminated the original construction contract in late 2019 after problems arose with the initial contractor. Airport officials expedited the procurement process to hire Hensel Phelps Construction Co. as the new contractor of a re-envisioned three-phase construction project that resumed in early 2020.

The airport now expects work on the Great Hall to finish in 2028 at an expected cost of \$2.1 billion.

REPORT HIGHLIGHTS

Denver International Airport needs to strengthen its management and oversight of the Great Hall construction project to ensure the best value for the city

- The airport does not have a process to select the best project delivery method for its construction projects, and it deviated from its standard procurement process in 2019 when it moved quickly to select a new contractor to take over the Great Hall project.
- The airport lacks policies and procedures to manage projects using the construction manager/general contractor project delivery method – like the Great Hall renovations – consistently and effectively.
- The airport did not properly monitor or oversee Hensel Phelps Construction Co.'s subcontracting process, including when the company hired itself as a subcontractor.
- Airport managers did not properly review project allowances or general conditions costs to ensure the city is not being overcharged.

WHY THIS MATTERS

Without proper project management and oversight of construction work – beginning with choosing the appropriate project delivery method and lasting through construction – the city risks overpaying for projects like the Great Hall renovations.

Additionally, if the procurement of contractors and subcontractors is not done openly, fairly, and competitively, it damages the airport's reputation and impedes the airport's ability to ensure the city receives the best value for contracted work.

CONTENTS

BACKGROUND	1
FINDING AND RECOMMENDATIONS	9
Denver International Airport needs to strengthen its management and oversight of the Great Hall construction project to ensure the best value for the city	
The airport has no process to select the best project delivery method for its construction projects . . .	10
The airport did not follow its normal procurement process when selecting Hensel Phelps as the new Great Hall contractor	13
The airport lacks policies and procedures to manage projects that use the construction manager/general contractor delivery method	17
The airport did not properly oversee Hensel Phelps’ subcontracting process	19
The airport did not properly oversee Hensel Phelps’ process for hiring itself as a subcontractor	29
The airport is not properly using construction allowances and verifying associated costs	36
The airport did not adequately review general conditions costs	39
AGENCY RESPONSE TO AUDIT RECOMMENDATIONS	41
AUDITOR’S ADDENDUMS	63
OBJECTIVE, SCOPE, AND METHODOLOGY	71
APPENDIX	73
Comparing procurement processes	73

BACKGROUND

Denver International Airport was one of the busiest airports in the United States in 2022 and the third-busiest airport in the world.¹ The airport is owned by the City and County of Denver but operates like a business.

The airport opened in 1995. Its terminal, the Jeppesen Terminal, was originally designed to accommodate 50 million passengers per year.² By 2007, airport passenger traffic reached this capacity — and by 2019, traffic had increased to over 69 million passengers. By 2032, airport officials expect passenger volumes to reach 100 million.³

To handle this increased traffic, airport officials sought to update the decades-old infrastructure and improve traffic flows through the airport’s check-in areas and security checkpoints. This drove the decision to renovate the terminal to increase capacity and allow the airport to serve even more passengers in the future.

The Great Hall project

The Great Hall refers to the main area in the Jeppesen Terminal that lies beneath the airport’s tented roof.

Renovations to the Great Hall officially began in July 2018 after the airport contracted with Great Hall Partners LLC. That partnership lasted less than 18 months, because the city lost confidence that Great Hall Partners could deliver the project. The contract was terminated in late 2019 — at a cost of \$183 million to the airport.

By then, the airport had already procured a new contractor — Hensel Phelps Construction Co. — to take over the active construction site and oversee construction of the Great Hall under a revised schedule and a re-envisioned scope of work.

The new schedule for the Great Hall project splits the work into three overlapping phases, as shown in Figure 1 on the next page. Phase one was completed in early 2022. As of January 2023, phase two of construction was more than halfway done and work had already begun on phase three.⁴ The airport expects to complete phase two by July 2024. Phase three should finish in 2028.

¹ “Denver International Airport Sets All-Time Passenger Traffic Record in 2022,” Denver International Airport (February 2023), accessed Feb. 13, 2023, <https://www.flydenver.com/sites/default/files/downloads/23-05%202022%20Passenger%20Traffic%20V2.pdf>.

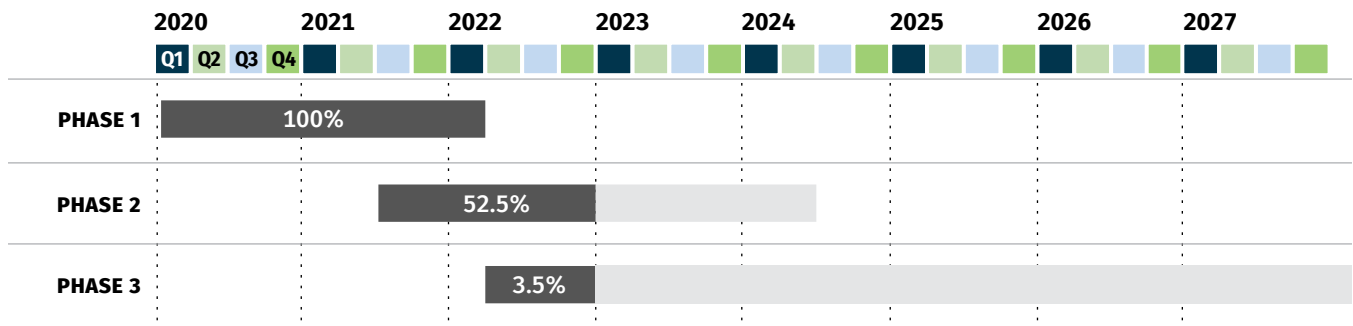
² “About the Project,” Great Hall Project webpage, Denver International Airport, accessed Feb. 13, 2023, https://www.flydenver.com/about/improvements/great_hall.

³ “About the Project,” Great Hall Project webpage.

⁴ The airport also refers to phase three as the “completion phase.”

FIGURE 1. Revised Great Hall project timeline, as of January 2023

After the airport terminated its initial contract with Great Hall Partners LLC in 2019, the airport hired Hensel Phelps Construction Co. to take over the project beginning in 2020. This timeline shows the project phases expected under Hensel Phelps’ contract with the airport and how far along each overlapping phase is.



Source: Graphic designed by Auditor’s Office staff using information from Denver International Airport.

HOW THE AIRPORT GOT HERE – In 2017, the airport entered into a 34-year contract with Great Hall Partners LLC, a group of private companies that would have not only renovated the Great Hall but also then managed certain areas of the terminal. That original project was meant to include four phases with plans to renovate existing infrastructure and improve retail and food offerings.

The airport’s relationship with Great Hall Partners was a “public-private partnership.” These generally involve a contract between public- and private-sector organizations where the private company finances, renovates, operates, and maintains a public facility.

Through its agreement with the airport, Great Hall Partners would have managed and controlled design and construction work and it would have financed a portion of construction. The airport had limited authority over some design and construction activities. The original cost of this construction was planned to be \$650 million with an additional \$120 million set aside to cover items not included in the original plans.

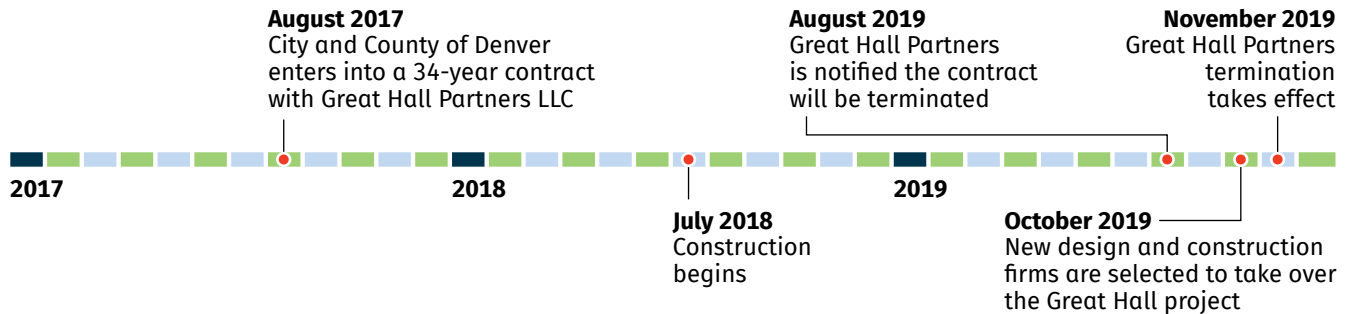
After completing the renovations in 2021, Great Hall Partners would have then managed specific portions of the terminal as an airport concessionaire for the rest of its 34-year contract. In return, the company was going to be paid an unlimited 20% share of concession revenues from the new shops and restaurants it would operate in the terminal. The maximum contracted amount the city would have paid Great Hall Partners to operate and maintain specific sections of the airport was \$1.8 billion.

However, in August 2019, airport officials moved to terminate their relationship with Great Hall Partners due to issues and disagreements. Areas of contention between Great Hall Partners and the airport included schedule delays, safety issues, and increased project costs. The airport was obligated to pay Great Hall Partners more than \$183 million to get out of its multi-decade agreement with the company.

In 2022, airport officials released a report that analyzed the successes and challenges learned from their experience with Great Hall Partners.⁵

Figure 2 shows the significant events that led to the airport ending its contract with Great Hall Partners.

FIGURE 2. Original Great Hall Partners project timeline, 2017-2019



Source: Graphic designed by Auditor’s Office staff using information from Denver International Airport.

REVISED PLANS FOR THE GREAT HALL – With the need to renovate the airport’s outdated terminal still remaining, airport officials moved quickly to select new design and construction firms to take over the active construction site.

The airport revised the original plans to focus on improving passenger flows and operational efficiency as well as increasing capacity in the Great Hall. To set the airport up for the future, the revised plans seek to also enhance security checkpoints and modernize the Jeppesen Terminal.⁶

In October 2019, airport officials chose Hensel Phelps Construction Co. as the new contractor.

The revised project now consists of three phases. In total, the Great Hall renovations are expected to cost \$2.1 billion — which includes about \$245 million spent under the airport’s previous contract with Great Hall Partners.

The first two phases are expected to cost an estimated \$524 million. They include plans for Hensel Phelps to:

- Add 31,000 square feet of space to the terminal.
- Renovate nearly 160,000 square feet.
- Add a new security checkpoint.

⁵ Denver International Airport, “Great Hall After-Action Report” (2022), accessed Aug. 11, 2022, https://www.flydenver.com/sites/default/files/greathall/greathall_AfterActionReport.pdf.

⁶ “About the Project,” Great Hall Project webpage, Denver International Airport, accessed Feb. 13, 2023, https://www.flydenver.com/about/improvements/great_hall.

The third phase alone will cost \$1.3 billion and last into 2028. It includes plans for a second new security checkpoint, new check-in areas, and construction of the Center of Excellence and Equity in Aviation. That facility is meant to provide “opportunities for under-represented students and young people interested and passionate about careers in aviation.”⁷

This audit focused on phases one and two of the revised project.

Airport oversight of construction projects

Denver International Airport’s Special Projects Division is responsible for managing and overseeing the Great Hall project. The division reports to the airport’s larger Construction and Infrastructure Division, which also includes sustainability initiatives and programs and the airport’s real estate division.

When the airport hires contractors to design and build projects, airport staff must procure those contracts in accordance with established procedures. They must also manage and oversee the contractors and monitor contract performance.

Executive Order No. 8 establishes the City and County of Denver’s policy for contracts and outlines procedures for preparing, executing, and monitoring contracts citywide. It says contracts are “one of the highest administrative priorities within the city” and that all city agencies — including Denver International Airport — must ensure contract compliance throughout the life of a contract.⁸

The policies laid out in Executive Order No. 8 are meant to ensure city agencies, like the airport, receive everything they contracted for and at the correct price. Additionally, the order requires city agencies to follow certain procedures for procuring construction contracts. For example, as part of Executive Order No. 8’s requirements, the airport must document its contract monitoring efforts and all contractually required deliverables.⁹

All city agencies, including Denver International Airport, must ensure contract compliance throughout the life of a contract.

Delivery methods for construction projects

A construction project’s delivery method sets the foundation for how contracts are structured and how a project should be managed. The term “project delivery” refers to the contractual relationships, roles, and responsibilities of all parties involved in a project.¹⁰ These may include the owner, the designer, and the contractor.

While there are various types of project delivery methods and each are distinguished by the way a given contract may work between the entities

⁷ “About the Project,” Great Hall Project webpage.

⁸ Exec. Order No. 8, City and County of Denver (2020), accessed July 5, 2022, <https://www.denvergov.org/files/assets/public/executive-orders/documents/8-contracts-other-written-instruments-ccd.pdf>, Memorandum No. 8A § VII.

⁹ Exec. Order No. 8, Memorandum No. 8A § VII.

¹⁰ National Academies of Sciences, Engineering, and Medicine, “Value, Benefits, and Limitations of Qualifications-Based Selection for Airport Project Delivery” (Washington, D.C.: The National Academies Press, 2019), accessed July 7, 2022, <https://doi.org/10.17226/25641>, 14.

A construction project’s delivery method sets the foundation for how contracts are structured and how a project should be managed.

involved, two project delivery methods are relevant to our discussion of the Great Hall project:

- The traditional approach of “design-bid-build.”
- An alternative approach called “construction manager/general contractor,” which the airport is using in its current contract with Hensel Phelps Construction Co.

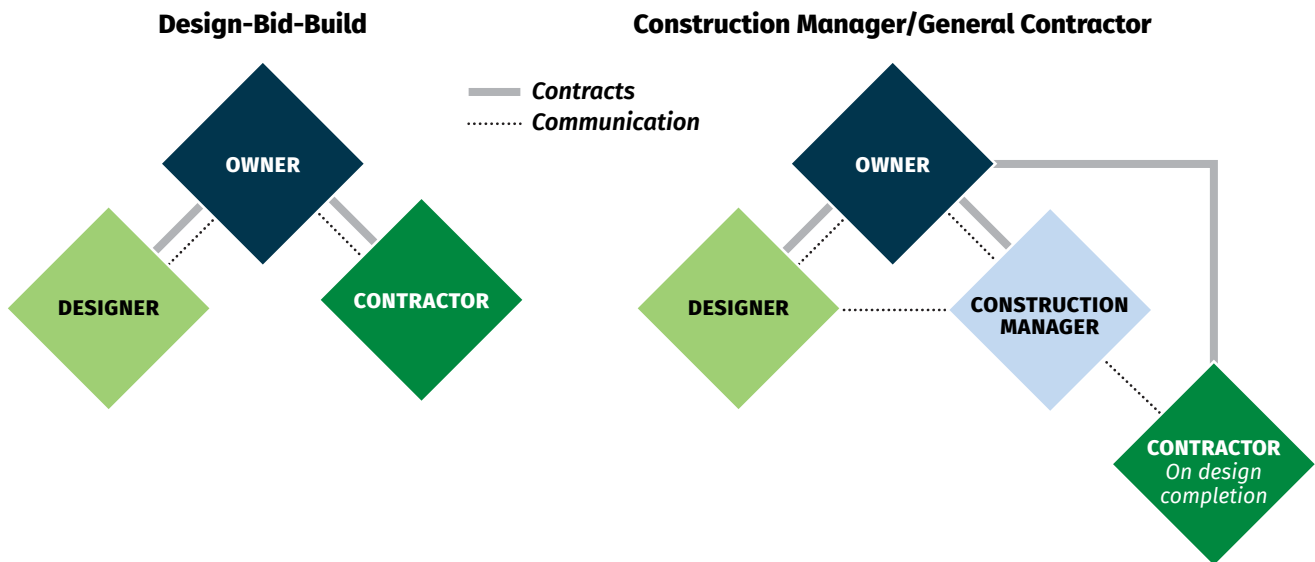
Generally, three primary parties are involved in a construction project:

- The owner.
- The designer, or architect.
- The contractor, or builder.

The relationship among these stakeholders, can vary depending on the type of project delivery method used, as shown in Figure 3. In the case of the Great Hall project, the project “owner” is Denver International Airport on behalf of the City and County of Denver.

A project owner weighs the benefits and drawbacks when considering which delivery method to use for a given construction project. Multiple factors — including technical complexity, schedule, and budget constraints — can influence the delivery method the project owner ultimately selects.

FIGURE 3. Comparison of stakeholder relationships based on construction project delivery method



Source: Graphic designed by Auditor’s Office staff using information from the Federal Highway Administration.

DESIGN-BID-BUILD DELIVERY METHOD – This is the most traditional project delivery method used in construction projects. It involves separate, consecutive phases whereby the architectural design must be done before construction can begin.

The project owner typically enters into two separate contracts in succession: first for design services and then, once design is finalized, another for construction services. The designer and the contractor have no contractual relationship, although they may communicate with each other as the need arises.

As the name spells out, projects using the design-bid-build method have three distinct stages that are linear and siloed:

1. **DESIGN** – The project owner designs the project, either by using internal staff or by hiring an architectural and engineering firm.
2. **BID** – The owner requests proposals from contractors who bid on the construction project.
3. **BUILD** – The owner selects the builder and enters into a contract with them. The owner typically selects this contractor based entirely on cost – meaning the contractor that submitted the lowest bid wins the construction contract. The chosen contractor then hires subcontractors who build the project.

The airport chose to use the construction manager/general contractor project delivery method for the current version of the Great Hall project.

CONSTRUCTION MANAGER/GENERAL CONTRACTOR DELIVERY METHOD – In contrast to the design-bid-build project delivery method, the “construction manager/general contractor” method allows the chosen contractor to be involved earlier on in the project. This is the delivery method the airport chose to use for the current version of the Great Hall project.

During the design phase and before construction, the contractor functions as the “construction manager.” Once construction begins, that same contractor then functions as the “general contractor.” This early infusion of a contractor’s expertise and input on a project is one of the biggest advantages of this delivery method.¹¹

In the case of the current Great Hall project, other advantages provide the airport with more flexibility to:

- Control the project’s design phase.
- Allow the contractor to provide input during the design phase.
- Accelerate the project schedule.
- Confirm potential costs early on in design.
- Have the contractor bid out subcontracted work earlier – that is, during the design phase – to reduce the risk of fluctuating costs.¹²

Similar to the design-bid-build method, the project owner in a construction manager/general contractor project typically contracts with a design consultant to start design work. However, by contrast, the owner will also procure the contractor during this phase of the project to provide

¹¹ National Academies of Sciences, Engineering, and Medicine, “Construction Manager-at-Risk Project Delivery for Highway Programs” (Washington, D.C.: The National Academies Press, 2010), accessed July 7, 2022, <https://nap.nationalacademies.org/catalog/14350/construction-manager-at-risk-project-delivery-for-highway-programs>, 1-3.

¹² National Academies of Sciences, Engineering, and Medicine, “Construction Manager-at-Risk Project Delivery for Highway Programs,” 11-12.

preconstruction services.

As such, initial design activities must be carried out with enough detail — even with some specifics remaining unknown — so that the project owner can develop an adequate proposal to solicit the right contractor for the job.

In another contrast to the design-bid-build method, the contractor in a construction manager/general contractor project is typically selected based on qualifications and experience, rather than cost alone.

While the project owner, designer, and contractor collaborate on the design, the contractor can simultaneously start construction activities for portions of the work that have either been finalized or that have reached a point in design that would allow for construction to begin.

Under the airport’s current contract for the Great Hall construction project, the Special Projects Division asks Hensel Phelps for a work plan and price proposal for corresponding construction. Airport officials review each proposal for completeness and negotiate conditions of performance with Hensel Phelps. Once the airport and Hensel Phelps agree on suitable conditions — including price and completion time — the division then issues a “task order” to authorize the start of construction work.

Each task order stipulates a maximum dollar amount, representing the most the airport will pay for the cost of the construction work. This is called a “guaranteed maximum price,” and as such, it is not to be exceeded. For instance, the guaranteed maximum price for phase one was \$170.3 million. The total amount paid to Hensel Phelps for phase one was \$161.5 million — which was about \$8.8 million less than the guaranteed maximum price agreed to between the airport and Hensel Phelps.

As designs are finalized and approved and costs are agreed to, task orders can be modified using “change orders.” These typically authorize additional work and costs up until the point project designs are finalized and the entire scope of work is known.

Each of the three phases of the current Great Hall project are based on work and costs agreed to in separate task orders. This means

PAYMENT TERMS FOR GREAT HALL CONSTRUCTION

The payment terms of a contract explain how a project owner will pay the designer and the contractor for their services. The airport’s construction contract with Hensel Phelps Construction Co. uses a “guaranteed maximum price” agreement.

Hensel Phelps bills the airport for actual costs it incurs, and the airport pays Hensel Phelps for the actual cost of those services, materials, and labor, plus a percentage fee for the contractor’s profit and a percentage fee for general and administrative costs. The parties agree in advance on a maximum project cost, similar to a price cap. The airport might pay less than the guaranteed maximum price — but not more.

the airport, the designer, and Hensel Phelps work together to complete preconstruction services at the start of each phase.

Hensel Phelps — serving as both construction manager and general contractor — is the entity responsible for construction of the Great Hall project. This includes hiring subcontractors to do some of the work. To that end, the company contracts with subcontractors or it may perform some construction work itself. When a contractor subcontracts work to itself, it is known as “self-performed work.” This is a common and widely accepted practice in construction.

Given these responsibilities, the contractor — in this case, Hensel Phelps — is also responsible for any risks associated with construction costs. The contractor is liable for any cost overruns, unless the costs were because of changes in the project’s scope that the airport authorized.

FINDING AND RECOMMENDATIONS

Denver International Airport needs to strengthen its management and oversight of the Great Hall construction project to ensure the best value for the city

Denver International Airport's Special Projects Division needs to ensure better management and oversight over the current version of the Great Hall construction project. The lack of management and oversight we found diminishes the advantages offered by the construction manager/general contractor project delivery method, which would otherwise help to deliver complex projects. This has exposed the airport to paying more than it should for what is already expected to be a \$2.1 billion project.

Specifically, we found:

- The Special Projects Division has no process to select the best project delivery method. Without one, managers relied only on professional judgment and past experience when choosing the method for the current Great Hall renovations.
- Division staff did not follow procurement procedures to ensure a fair, open, and competitive bidding process in 2019 when they moved quickly to select Hensel Phelps Construction Co. as the new contractor for the project.
- The division lacks policies and procedures for managing complex construction projects, so staff cannot ensure projects like the Great Hall are managed consistently and that key steps for adequate oversight are not missed.
- Division staff have not properly monitored Hensel Phelps' subcontracting process, nor did they adequately oversee how Hensel Phelps hired itself as a subcontractor.
- Division staff did not properly verify the use of construction allowances, nor did they review and verify general conditions costs — which exposes the airport to being overcharged.

Without stronger project management and oversight over all phases of a construction manager/general contractor project like the current Great Hall renovations, the airport risks not getting all contracted services from its contractor. It also risks overpaying for construction costs — and the airport's reputation may be damaged if it does not ensure a fair, open, and competitive process when hiring contractors and subcontractors.

The airport has no process to select the best project delivery method for its construction projects

Airport officials did not use a structured or risk-based approach before they chose to use the construction manager/general contractor project delivery method for the current iteration of the Great Hall construction project. Instead, airport managers relied on their professional judgment and previous experience with other city projects — such as work at the city’s animal shelter and crime lab — that also used the construction manager/general contractor delivery method.

Selecting the wrong project delivery method can have expensive consequences. Some methods — such as the public-private partnership the airport previously had with Great Hall Partners LLC — can limit airport officials’ control and authority over a construction project. Airport officials cited that very issue of limited control as a contributing factor in terminating the prior contract, which cost the airport \$183 million to get out of.¹³

Airport officials could not provide us with any analysis of how they determined in 2019 that the construction manager/general contractor approach was best for the revised renovation plans. Key individuals involved in selecting the current project delivery method are no longer with the airport and did not document their decision-making process.

As a result, current airport officials could not provide us with a clear answer about what factors may have been used to determine that the construction manager/general contractor project delivery method was the most suitable to address the Great Hall’s unique project challenges. Because of this, neither we nor airport officials have the information needed to assess whether the airport’s selection process was truly optimal and followed leading practices.

Two sets of leading practices are especially relevant:

- A manual developed by the Colorado Department of Transportation that is specific to construction manager/general contractor projects.
- A guide developed by a trio of professional organizations — representing general contractors; airport developers; and local,

CONSTRUCTION MANAGER/ GENERAL CONTRACTOR PROJECT DELIVERY METHOD

Project delivery methods dictate how the owner, the designer, and the contractor interact with one another throughout a construction project.

The “construction manager/general contractor” method is ideal for technically complex construction projects that have an accelerated schedule and budget constraints. It requires strong collaboration among the construction team members, because the owner, the designer, and the contractor work together from the beginning to plan, design, and build the project in line with a set schedule and agreed-upon payment terms.

¹³ Denver International Airport, “Great Hall After-Action Report” (2022), accessed Aug. 11, 2022, https://www.flydenver.com/sites/default/files/greathall/greathall_AfterActionReport.pdf.

regional, and state owners of commercial airports — that discusses project delivery systems at airports.¹⁴

These leading practices establish key considerations that organizations — and specifically airport owners, like the City and County of Denver — should use when establishing parameters to select the best project delivery method. These include:

- The project’s schedule.
- The project cost.
- The owner’s experience and availability.
- The owner’s desired level of control.
- Staffing resources.
- The project’s design detail, size, and complexity.
- The level of risk.
- Impacts to ongoing operations.
- Legal restrictions.¹⁵

When assessing these factors, airport staff should document their rationale and decision-making process and discuss their evaluation with managers. Leading practices also say staff should analyze policies and procedures to ensure the project delivery method is implemented effectively.¹⁶

Airport officials acknowledge their lack of a formalized process to select project delivery methods has been an ongoing issue identified on past construction projects. They have already agreed to address it.

After our May 2022 audit of the Peña Boulevard improvements construction contract, airport officials agreed to implement our recommendation that they formalize their project delivery method selection process.¹⁷ There too, we found the airport lacked a formal process to ensure a risk-based approach and that it did not have documentation to justify its chosen project delivery method for the Peña Boulevard work.¹⁸ The airport gave itself a deadline of Dec. 14, 2022, to implement that recommendation.¹⁹

Airport officials acknowledge their lack of a formalized selection process has been an ongoing issue and they have committed to addressing it.

¹⁴ Joint Committee of the Airports Council International-North America, Airport Consultants Council, and the Associated General Contractors of America, “Airport Owner’s Guide to Project Delivery Systems” Second Edition (2012), accessed Aug. 10, 2022, <https://aconline.org/wp-content/uploads/Airport-Owners-Guide-to-Project-Delivery-Systems-2nd-Edition-2012.pdf>; Colorado Department of Transportation, “Construction Manager/General Contractor Manual” (January 2015), accessed July 7, 2022, <https://www.codot.gov/business/alternativedelivery/assets/cm-gc-manual.pdf>, § 2.3.1.

¹⁵ Joint Committee of the Airports Council International-North America, Airport Consultants Council, and the Associated General Contractors of America, § III; Colorado Department of Transportation, § 2.3.1.

¹⁶ Joint Committee of the Airports Council International-North America, Airport Consultants Council, and the Associated General Contractors of America, Appendix C.

¹⁷ City and County of Denver’s Auditor’s Office, “Peña Boulevard Improvements Construction Contract” Audit Report (2022), accessed Oct. 3, 2022, <https://denvergov.org/files/assets/public/auditor/documents/audit-services/audit-reports/2022/airport-pena-boulevard-improvements-construction-final-may-2020.pdf>.

¹⁸ City and County of Denver’s Auditor’s Office.

¹⁹ City and County of Denver’s Auditor’s Office.

As of April 2023, we had not yet completed our follow-up work to confirm implementation.

Meanwhile, in August 2022, the airport published its “after-action” report following its termination of the Great Hall Partners contract in 2019. Airport officials meant for this report to provide “an open and transparent summary of what we did well and would do again, the challenges we encountered, what we would do differently next time.”²⁰

The report said that in retrospect, a different project delivery method may have been better suited for the Great Hall construction project.²¹ Airport officials also said the previous public-private partnership was neither flexible nor collaborative, making it difficult for them to transfer control and authority to the previous contractor. Furthermore, the airport’s report noted many processes and procedures were either not in place, loosely followed, or not followed at all. The report said establishing clearly defined processes would ensure needs, goals, and requirements are met when implementing a new project delivery method.²²

Establishing a documented, risk-based approach for selecting the most suitable project delivery method can decrease the risk that the airport might choose a less optimal method. A formalized approach can also help prevent inefficient and ineffective project oversight — including inflated construction costs and avoidable project delays.

Thoroughly documenting the project delivery selection process would further ensure airport officials consider key factors in their decision-making process — ultimately providing better transparency of management decisions. Developing a record of these past analyses over time would also give airport officials historical information to refer to when they pursue similar construction projects in the future.

1.1

RECOMMENDATION

Develop and implement a project delivery method selection process

Denver International Airport’s Special Projects Division should develop and implement a process to ensure managers and staff use a risk-based approach to select a construction project’s delivery method. This process should align with leading practices — such as the Colorado Department of Transportation’s “Construction Manager/General Contractor Manual” and the “Airport Owner’s Guide to Project Delivery Systems.”

This process should also be thoroughly documented and include primary selection factors as outlined in leading practices, as well as staff members’ rationale for the chosen method.

²⁰ Denver International Airport, “Great Hall After-Action Report” (2022), accessed Aug. 11, 2022, https://www.flydenver.com/sites/default/files/greathall/greathall_AfterActionReport.pdf, 3.

²¹ Denver International Airport, “Great Hall After-Action Report” (2022), 12.

²² Denver International Airport, “Great Hall After-Action Report” (2022), 66 and 68.

The airport did not follow its normal procurement process when selecting Hensel Phelps as the new Great Hall contractor

After Denver International Airport announced in August 2019 that it was terminating its relationship with Great Hall Partners LLC, airport officials expedited their procurement process to identify a replacement contractor. This caused them to deviate from established norms when they ultimately chose Hensel Phelps Construction Co. as that new contractor a couple months later.

Meanwhile, airport officials did not develop or keep supporting documentation for the required steps in the procurement process – such as selection panel score sheets for each bid on the new contract and records showing how officials used evaluation criteria to score prospective contractors.

Airport officials said there were multiple reasons to deviate from the standard procurement process. For one, they had only three months to identify a new contractor before the project site would be handed back to the airport in November 2019. Officials said they wanted to ensure the active construction site left behind from Great Hall Partners was secured from exposure to outside elements and they wanted to minimize impacts to ongoing airport operations. If officials had not accelerated the procurement process for the revised Great Hall project, they said it would have taken over a year to procure a new contractor under normal procedures.

When we asked airport managers why they kept no records of this expedited process, they told us airport executives directed them at the time to limit documentation related to the Great Hall project because of the number of open records requests the airport had received from the public. Significant delays in the original construction project, followed by the airport’s falling out with Great Hall Partners, had been widely publicized – elevating the public’s interest in the project.

Airport officials said the City Attorney’s Office and the airport’s own legal department were content with the expedited manner in which Hensel Phelps was selected. However, because no verifiable documentation exists, we cannot independently determine whether the airport followed a fair, reasonable, and competitive bidding process and that the city received the best value through its new contract with Hensel Phelps.

The airport’s contract procurement procedures were designed to provide a fair and transparent way for prospective businesses to bid on airport contracts and to promote competition. But airport officials did not perform several of the airport’s required procurement steps when they selected

Hensel Phelps as the new Great Hall contractor. Specifically, they did not:

- Review proposals to ensure the selected pool of contractors met minimum qualifications.
- Obtain approval of the evaluation panel members.
- Ensure community member participation on the evaluation panel.
- Train panel members on evaluation processes.
- Develop evaluation panel score sheets and document meeting minutes.
- Hold a meeting with stakeholders to discuss the selection panel's final recommendation.
- Formally notify the successful and unsuccessful bidders.
- Document how the process had deviated from normal procedures.
- Ensure airport staff signed off on a peer-review checklist to confirm officials had followed all procurement steps.

By airport officials not following these established procurement procedures and not developing or keeping documentation to support their decision-making process, it diminished public transparency and hinders the airport's ability to show its selection of Hensel Phelps was fair, open, and competitive.



GREAT HALL CONSTRUCTION IN PROGRESS | Sections of Denver International Airport's main terminal were demolished as part of the Great Hall renovations — specifically, the center exterior terminal (at left) and the arrival escalators for the airport's underground passenger train (above). PHOTOS BY DENVER INTERNATIONAL AIRPORT STAFF

The risk to the airport is heightened given that under construction manager/general contractor projects, the project owner typically procures its contractor based on the contractor’s qualifications rather than cost alone. These qualitative variables could include a contractor’s experience, capacity, availability, and safety record.

Such variables are inherently more subjective and open to individual interpretation, which can vary greatly from one selection committee member to the next. This makes it more imperative to thoroughly document how each selection committee member evaluated and scored each bid — to ensure transparency and reduce the risk of any one selection committee member potentially manipulating the outcome. Such documentation would also help the airport justify its selection if any losing bidder protested the decision.

Once we learned the airport had not documented how it procured Hensel Phelps as its new Great Hall contractor, we set out to determine:

- How other major U.S. airports document their processes to procure construction contractors.
- How Denver International Airport otherwise documented recent procurements for construction projects that, like the Great Hall, used a qualifications-based selection process.
- How the city’s Department of Transportation & Infrastructure — the only other city agency authorized to perform construction — documents its procurement of construction contractors when using a qualifications-based selection process.

Procurement specialists at the following seven major U.S. airports responded to our survey:

- Charlotte Douglas International Airport in North Carolina.
- Dallas/Fort Worth International Airport in Texas.
- Chicago O’Hare International Airport in Illinois.
- Phoenix Sky Harbor International Airport in Arizona.
- Seattle-Tacoma International Airport in Washington.
- San Francisco International Airport in California.
- Salt Lake City International Airport in Utah.

All seven confirmed they had separate policies and procedures in place to guide their decision-making for time-sensitive procurements. They also confirmed they keep documentation of the selection process results.

COMPARING PROCUREMENT PROCESSES

See the [appendix](#) for more detail on our comparative analysis of construction procurement practices both within the City and County of Denver and among other major U.S. airports.

Without a standardized and well-executed procurement process, Denver International Airport risks appearing arbitrary, unfair, and not competitive in its decision-making.

Meanwhile, when we looked locally for comparative examples, we used our professional judgment to identify seven recently completed construction projects from either Denver International Airport or the city's Department of Transportation & Infrastructure that, like the Great Hall project, had used an alternate delivery method similar to the construction manager/general contractor method.

We reviewed procurement documentation for this sample of projects and found that — in contrast to the Great Hall project — both the airport and Transportation & Infrastructure kept key documentation in each of those cases to support their justification and rationale during the selection process, including keeping score sheets and selection recommendation memos.

Federal guidance says managers should use policies and procedures to communicate objectives, related risks, activities, roles, and responsibilities.²³ Documentation helps managers establish and communicate the “who, what, when, where, and why” to preserve organizational knowledge and decrease the risk of having that knowledge limited to only a few people. It also enables the organization to better provide information to outside parties, such as auditors and the public.²⁴

Without a standardized and well-executed procurement process, Denver International Airport risks appearing arbitrary, unfair, and not competitive in its decision-making — especially when dealing with billion-dollar construction projects, like the Great Hall renovations.

By the airport not following a standard procurement process and by officials not developing and keeping supporting documentation, the public and other stakeholders might perceive the airport as failing to be fair, open, and competitive. This could also increase the likelihood that a losing bidder might protest the award outcome, given the airport would be unable to provide feedback since no documentation exists.

Additionally, there is also an increased risk that airport staff could mismanage the procurement process or perform it inconsistently or that required steps are missed or not in line with city requirements and airport standards. Consequently, the airport could award contracts that are not in the best interest of the city in terms of costs or a contractor's qualifications — which increases the risk of higher project costs, schedule delays, and the airport not receiving the full contracted scope of work it paid for.

²³ U.S. Government Accountability Office, GAO-14-704G, “Standards for Internal Control in the Federal Government” (2014), accessed Aug. 4, 2022, <https://www.gao.gov/assets/670/665712/pdf>, paras. 12.01-12.03.

²⁴ U.S. Government Accountability Office, “Standards for Internal Control in the Federal Government,” para. 3.10.

1.2 **RECOMMENDATION** **Follow construction procurement procedures and document steps**

Denver International Airport’s Special Projects Division should follow its standard operating procedures for construction procurements and ensure thorough documentation exists for each project to show staff met all required steps in the procurement process.

AIRPORT RESPONSE – DISAGREE
SEE [PAGE 41](#) TO READ THE AIRPORT’S RESPONSES.
SEE [PAGE 63](#) FOR THE AUDITOR’S ADDENDUM.

1.3 **RECOMMENDATION** **Develop construction procurement procedures for expedited needs**

Denver International Airport’s Special Projects Division should work with the airport’s Business Management Services to update its existing standard operating procedures for construction procurement to include necessary steps staff should take for special cases when a procurement needs to be expedited.

AIRPORT RESPONSE – AGREE, IMPLEMENTATION DATE – DEC. 1, 2023
SEE [PAGE 41](#) TO READ THE AIRPORT’S RESPONSES.

The airport lacks policies and procedures to manage projects that use the construction manager/general contractor delivery method

The airport’s Special Projects Division does not have a standardized approach for managing construction work that uses the construction manager/general contractor delivery method.

In the absence of consistent practices, airport staff involved in these type of projects have had to develop their own procedures for performing management and oversight duties, among other tasks. This risks inconsistencies in the division’s project management — for example, staff might misapply key oversight steps or overlook them entirely.

The airport does have a handbook for the Great Hall project, which provides a general framework for project management. But this handbook is far from the level of detail that ought to be included in a defined set of policies and procedures. The handbook itself explicitly specifies it is a framework and should be used in conjunction with policies and procedures.

Airport officials said they do not believe a standard handbook otherwise exists for complex construction projects, such as construction manager/general contractor-delivered projects. They agree policies and procedures should be in place to provide more structure and consistency.

For example, airport officials noted how the lack of a standardized approach caused issues during the original Great Hall project. The airport’s “after-action” report — written after it terminated Great Hall Partners LLC as the original contractor in 2019 — reported that processes and procedures were either not in place, loosely followed, or not followed at all during that initial project.²⁵

Construction projects that use the construction manager/general contractor delivery method have unique risks and challenges. The required steps to manage such projects are similar across projects.²⁶ Establishing documented policies and procedures that outline essential steps would ensure these complex projects are being managed in a consistent manner — while still affording the airport’s project managers the flexibility to address risks or challenges unique to a given project.²⁷

Because the Special Projects Division lacks documented policies and procedures, airport officials cannot ensure project management and that staff perform key steps in an effective and consistent manner, including for the current Great Hall project. Therefore, we in turn cannot determine whether the airport’s existing practices cover all required steps to effectively deliver a construction manager/general contractor project from initial scope through project completion in line with leading practices.

Federal guidance says documentation is a necessary part of an effective internal control system. “Internal controls” are the “plans, methods, policies, and procedures used to fulfill the mission, strategic plan, goals, and objectives.”²⁸ Managers should document processes in formal policies — defining how they should be implemented, the key roles and responsibilities, any risks, and expected day-to-day activities.²⁹

Specific to construction, the Colorado Department of Transportation’s “Construction Manager/General Contractor Manual” outlines policies and procedures for managing and executing the construction manager/general contractor project delivery method — including documenting roles and responsibilities and what activities the owner, the designer, and the contractor will work on together.³⁰ This manual provides guidance to contractors, consultants, and state officials on how to manage and perform all required steps for this type of delivery method from the initial project scope through project completion.³¹

²⁵ Denver International Airport, “Great Hall After-Action” Report (2022), accessed Aug. 11, 2022, https://www.flydenver.com/sites/default/files/greathall/greathall_AfterActionReport.pdf, 67.

²⁶ Colorado Department of Transportation, “Construction Manager/General Contractor Manual” (January 2015), accessed July 7, 2022, <https://www.codot.gov/business/alternativedelivery/assets/cmgc-manual.pdf>, § 1.1.

²⁷ Colorado Department of Transportation, “Construction Manager/General Contractor Manual,” § 1.1.

²⁸ U.S. Government Accountability Office, GAO-14-704G, “Standards for Internal Control in the Federal Government” (2014), accessed Aug. 4, 2022, <https://www.gao.gov/assets/670/665712/pdf>, paras. OV1.03 and OV4.08.

²⁹ U.S. Government Accountability Office, “Standards for Internal Control in the Federal Government,” paras. 12.01-12.04.

³⁰ Colorado Department of Transportation, “Construction Manager/General Contractor Manual” (January 2015), accessed July 7, 2022, <https://www.codot.gov/business/alternativedelivery/assets/cmgc-manual.pdf>, § 2.2.2 and 3.1.

³¹ Colorado Department of Transportation, “Construction Manager/General Contractor Manual” (January 2015), § 1.1.

Other guidance on construction projects that is intended specifically for airport owners, like the City and County of Denver, says communicating goals, objectives, expectations, risks, roles, and responsibilities through documented policies and procedures enhances an airport's ability to effectively and efficiently implement, manage, and execute its chosen project delivery method.³²

Without sufficiently detailed and documented policies and procedures for projects that use the construction manager/general contractor setup, the airport will have difficulty maximizing the benefits of this project delivery method. Furthermore, the airport will continue to risk tasks being performed inconsistently, required steps being missed, or project management not being in line with leading practices.

Having thorough policies and procedures for managing complex construction projects would also better protect the airport's investment by decreasing the risk that the airport might pay inflated construction costs, otherwise pay more than it should, or not receive the full scope of contracted work.

1.4

RECOMMENDATION

Develop and implement policies and procedures for the construction manager/general contractor delivery method

Denver International Airport's Special Projects Division should develop and implement policies and procedures addressing the unique risks of the construction manager/general contractor project delivery method. These policies and procedures should align with leading practices and detail the steps required to effectively manage such projects, beginning with the initial scoping of a project all the way through completion. These should also be sufficiently defined and structured so tasks are performed consistently across projects.

AIRPORT RESPONSE – AGREE, IMPLEMENTATION DATE – DEC. 1, 2023
SEE [PAGE 41](#) TO READ THE AIRPORT'S RESPONSES.

The airport did not properly oversee Hensel Phelps' subcontracting process

For phase two of the Great Hall construction project, which began in July 2021, the airport's contractor Hensel Phelps Construction Co. hired various subcontractors to perform specialized work related to the renovations – such as electrical, plumbing, and rough carpentry. As of August 2022, Hensel Phelps had hired 34 subcontractors for \$70 million worth of work during phase two.

³² Joint Committee of the Airports Council International-North America, Airport Consultants Council, and the Associated General Contractors of America, "Airport Owner's Guide to Project Delivery Systems" (2012), accessed Aug. 10, 2022, <https://acconline.org/wp-content/uploads/Airport-Owners-Guide-to-Project-Delivery-Systems-2nd-Edition-2012.pdf>, § IV.

However, airport staff within the Special Projects Division did not properly oversee Hensel Phelps' subcontracting process for this phase, which in some cases could lead to the airport paying more than it should. Specifically, we found airport staff:

- Did not have copies of subcontracts readily available nor did they have complete knowledge of all the subcontracts that existed.
- Did not approve in writing each of Hensel Phelps' chosen subcontractors.
- Allowed Hensel Phelps to award contracts for some categories of work without a competitive bidding process.
- Allowed Hensel Phelps to award some subcontracts to companies that may not have been the "lowest, responsive, and qualified bidder" in contrast to what the primary construction contract requires.³³
- Allowed Hensel Phelps to award and execute some subcontracts that exceeded the amount proposed in the winning bid.
- Issued task orders that allowed some subcontractors to begin construction before Hensel Phelps had fully executed the subcontract.
- Allowed Hensel Phelps to overcharge for markups on construction work that was awarded to a subcontractor's subcontractor.

HOW WE AUDITED THE SUBCONTRACTING PROCESS

We focused on phase two of the current iteration of the Great Hall project when evaluating the subcontracting process.

The subcontractors hired during phase one — which lasted from January 2020 through March 2022 — were procured by the previous contractor Great Hall Partners LLC, whose activities were outside the scope of our audit work. The new contractor Hensel Phelps Construction Co. inherited those subcontractors when it took over the active construction site at the end of 2019.

A legal principle known as "privity of contract" requires subcontractors to deal directly with the contractor that hired them.³⁴ We acknowledge this, and as such, we do not suggest that the airport circumvent a contractor to deal in any direct way with subcontractors.

However, the airport — as the project owner and ultimate authority of its construction projects — should have more involvement in overseeing its contractors' subcontracting practices. This would not require airport managers or staff to have any contact or relationship with a subcontractor. Rather, the airport could use its legal relationship with a contractor to determine whether that contractor is selecting subcontractors based on fair and open competition.

³³ City and County of Denver, Hensel Phelps Construction Co. contract (February 2020), § SC-5.

³⁴ Ron Risner, "The Practitioner's Blueprint to Construction Auditing" (Altamonte Springs, Florida: The Institute of Internal Auditor Research Foundation, 2012), 97.

The airport overrelied on Hensel Phelps to manage the subcontracting process.

The airport does not have documented policies and procedures to ensure appropriate oversight of the subcontracting process for projects that use the construction manager/general contractor project delivery method. In the case of the current Great Hall project, the airport overrelied on Hensel Phelps to manage the subcontracting process.

Because of this lack of oversight the airport could have paid more than necessary in some cases — and it allowed Hensel Phelps to choose subcontractors that may have been in its own best interest, rather than the airport's.

DELAYS IN PROVIDING SUBCONTRACTS AND LACK OF KNOWLEDGE OF ALL SUBCONTRACTS – Subcontractor costs are by far the largest chunk of construction project costs, typically approaching 80% to 90% of the cost of a project.³⁵ Therefore, leading practices stress that construction project owners — in this case, Denver International Airport — should have copies of all subcontracts from their contractor.

Among the reasons the Special Projects Division should have these copies:

- Terms in a subcontract might not align with the main contract between the airport and Hensel Phelps.
- Subcontracts could have allowances or alternates the division would need to track.
- Value engineering could take place, which could lower the subcontracts' price before the agreements are signed. "Value engineering" involves identifying and eliminating unnecessary costs and improving functionality of the building being constructed at the lowest possible cost.
- A subcontractor could file a claim.³⁶

Based on our audit work as of August 2022, we do not believe airport officials had copies of all 34 subcontracts for phase two of the Great Hall project readily available.

Airport officials took 33 days to provide us with initial copies of the subcontracts we asked for. After evaluating them, we discovered four subcontracts were missing that should have been included in the response to our request. This led us to conclude airport officials did not have knowledge of all phase two subcontracts in existence.

Meanwhile, we learned airport officials also did not have a complete understanding of all subcontracts Hensel Phelps had issued for phase two. On two occasions, the airport did not know Hensel Phelps had entered into subcontracts with itself to perform some construction work.

When records are diligently maintained, it is easier to provide them upon request. Because the airport needed so much time to provide copies of these subcontracts, it indicates that airport staff in the Special Projects

³⁵ Ron Risner, 97.

³⁶ Ron Risner, 99-100.

Division did not have the copies in their possession and had to go to Hensel Phelps to obtain them.

Not possessing copies of subcontracts suggests the airport was not actively involved in the subcontracting process. Furthermore, the airport's lack of complete knowledge of Hensel Phelps' subcontracting activities — including knowledge of all subcontracts in existence — shows that the airport did not oversee the subcontracting process as closely as it should have.

NO WRITTEN APPROVAL FOR SOME SUBCONTRACTS – The airport's contract with Hensel Phelps says each subcontractor that Hensel Phelps expects to perform work must be accepted in writing by the airport before the subcontracted work begins.³⁷ However, of the 34 subcontracts we looked at for phase two, only 11 — or less than a third — were reviewed and approved by the airport in writing.

Of the 34 phase two subcontracts, only 11 were reviewed and approved by the airport in writing.

The other 23 subcontracts, amounting to \$39.8 million in construction work, were reviewed and discussed by airport managers verbally, but we could not verify that the contractually required written approval was granted. The airport's agendas of meetings it had with the construction team lacked sufficient detail, preventing us from determining whether all subcontracts were in fact approved by the airport in writing.

Four subcontracts, totaling about \$5.2 million, not only lacked written approval but also were not competitively bid.

LACK OF COMPETITIVE BIDDING – The Great Hall construction contract between the airport and Hensel Phelps specifies that subcontracted work “shall be procured based upon competitive bids awarded to the lowest, responsive, and qualified bidder.”³⁸ Leading practices also recommend organizations obtain a minimum of three bids for each construction trade.³⁹ Examples of trades on the Great Hall project that received less than three bids were structural and soft demolition, roofing, drywall, carpet, and fire protection.

While we understand it is not always possible to receive three bids for every trade, documenting the decision-making process would increase transparency.

We found that for 20 of the 34 subcontracts for phase two, Hensel Phelps either did not competitively bid the work or Hensel Phelps received less than the recommended three bids. Staff at Hensel Phelps said the company made no attempt to re-bid these 20 subcontracts, which totaled over \$20 million in construction work.

³⁷ City and County of Denver, Hensel Phelps Construction Co. contract (February 2020), Exhibit F – Title 5 § (502).2.

³⁸ City and County of Denver, Hensel Phelps Construction Co. contract (February 2020), § SC-5.

³⁹ Ron Risner, “The Practitioner’s Blueprint to Construction Auditing” (Altamonte Springs, Florida: The Institute of Internal Auditors Research Foundation, 2012), 166.

In some cases, airport officials were also unaware that Hensel Phelps had waived the requirement to competitively bid subcontracted work. Although Hensel Phelps' contract with the airport allows for this, airport officials must authorize this waiver with express written approval.⁴⁰ We identified four instances when the airport had not given express written approval for the exceptions. In these cases, the subcontracts were for work that Hensel Phelps determined only one subcontractor could do or the subcontract went directly to an airport-preferred vendor.

Airport managers said certain building trades were not competitively bid to maintain consistency in the materials used across different phases of the project. For example, quartz flooring was purchased and installed in certain areas of the Great Hall during phase one. To maintain consistency in the flooring, it was necessary to use the same vendor to complete other areas of the Great Hall for phase two. Similarly, the same subcontractor that installed the elevators and escalators during phase one was also used for phase two.

Although this rationale is valid, the airport could not provide us with its written approval – which is necessary to waive the contract's competitive bid requirement.

Without written approval, there is no evidence these subcontracts were sufficiently reviewed. Therefore, the airport may not be receiving a competitive price for certain trades of subcontracted work either because it allowed Hensel Phelps to bypass the competitive process or because it did not ensure Hensel Phelps received enough bids to do an adequate cost comparison among prospective subcontractors.

SOME SUBCONTRACTS MAY NOT HAVE BEEN AWARDED TO THE LOWEST, MOST QUALIFIED BIDDER – Not only does the airport's construction contract with Hensel Phelps require subcontracted work to be based on competitive bids, it requires subcontracts to be awarded to the "lowest, responsive, and qualified bidder."⁴¹

But Hensel Phelps did not adhere to this requirement for all subcontracts. In six instances where Hensel Phelps did not select the lowest bid, the airport could not provide us with documentation justifying the reason for its choice.

In these six instances, we compared the bid proposals received for the same trade of construction work. We found they did meet requirements to support businesses owned by women and people of color, as specified on the proposal summaries. We also confirmed they were comparable to each other in scope.

Yet in some instances, although other factors were similar, the bid with the lowest cost was not selected. By Hensel Phelps not hiring the "lowest, responsive, and qualified bidder" in these six instances, the subcontracted

⁴⁰ City and County of Denver, Hensel Phelps Construction Co. contract (February 2020), § SC-5.

⁴¹ City and County of Denver, Hensel Phelps Construction Co. contract (February 2020), § SC-5.

construction work may have cost the airport more money than it might have otherwise paid.

Without sufficient documentation justifying why a more expensive bid was selected over the lowest-cost bid, we could not determine whether the airport is receiving the best value for the subcontracted construction work or whether it might potentially be overpaying for the work.

SOME SUBCONTRACTS EXCEEDED BID PROPOSAL AMOUNTS – We found the dollar amounts for three of the 34 phase two subcontracts were for more money than the vendor originally proposed. As shown in Table 1, this amounted to the airport paying over \$1 million more than originally proposed across three subcontracts.

TABLE 1. Comparison of bid amount vs. subcontract amount

Three of the 34 phase two subcontracts were for more money than the vendor originally proposed to spend.

Trade	Bid	Subcontract	Difference
Building concrete	\$1,115,407	\$1,751,258	\$635,851
Drywall and related work	\$2,604,952	\$2,630,526	\$25,574
Structural steel	\$3,564,080	\$3,951,033	\$386,953
Total			\$1,048,378

Source: Auditor’s Office analysis of subcontractors’ bids and approved subcontracts for phase two of the Great Hall project.

Because cost is a major factor in selecting subcontractors, a subcontractor might propose a lower cost in its bid only to subsequently increase the price once it wins the contract. This might result in the airport paying more.

We found the costs in the three subcontracts we identified were higher than the bid amounts because additional itemized scopes of work were added after Hensel Phelps solicited for the subcontract.

SUBCONTRACTS NOT SIGNED IN ADVANCE OF WORK PERFORMED – The construction contract between the airport and Hensel Phelps specifies that construction work must begin within 10 days of the airport issuing a task order to Hensel Phelps or its subcontractors.⁴²

However, we found several subcontractors did not have signed contracts in place at the time the airport signed a task order for phases one and two of the current Great Hall project.

Specifically, nine subcontracts were signed after the airport issued a task order, none of which were signed within 10 days.

⁴² City and County of Denver, Hensel Phelps Construction Co. contract (February 2020), Article III.

This indicates either that work did not begin within the required 10 days of the task order – which would violate the contract requirement – or that work began without a signed contract in place, which risks subcontractors working on-site without a signed agreement in place.

INAPPROPRIATE MARKUP ON MULTI-TIERED SUBCONTRACTED WORK –

Sometimes, subcontractors contract their assigned work out to another subcontractor, which is known as “multi-tiered” subcontracted work. For the Great Hall project, we found the airport paid more than it should have on certain subcontracted work because staff in the Special Projects Division did not ensure Hensel Phelps correctly calculated allowable markup costs on all multi-tiered subcontracted work for phases one and two.⁴³

This means the airport cannot know whether payments were calculated correctly to those Hensel Phelps subcontractors who then hired their own subcontractors to complete the work. Subcontractor work totaled about \$153.4 million in phase one and \$70.4 million in phase two, as of August 2022. Neither the airport nor Hensel Phelps was able to readily identify which subcontractors were multi-tiered.

The airport’s construction contract with Hensel Phelps says first-tier subcontractors – those hired directly by Hensel Phelps that then subcontracted that work out to their own, or second-tier, subcontractor – can charge a 3% markup on the actual cost of work given to the second-tier subcontractor. This 3% represents profit for the first-tier subcontractor because it supervised the second-tier subcontractor that performed the actual work. The second-tier subcontractor can then charge a 12% markup on the actual cost of work as its own profit.⁴⁴

Because both tiers of subcontractors are entitled to their own markup, the contract between the airport and Hensel Phelps makes clear there can be no layering of markups. This means that the first-tier subcontractor can apply its 3% markup only to the second-tier subcontractor’s cost of work – not including the second-tier contractor’s 12% markup.

Additionally, the contract says the total markup of all tiered subcontracts cannot exceed 15%: 3% for the first-tier subcontractor and 12% for the second-tier subcontractor.⁴⁵

Specifically, the contract says:

“Neither the contractor nor subcontractor of any tier, nor the city in the case of a credit, will apply or attempt to apply these percentage adjustment in a way that would pyramid either the cost or credit because of the involvement of a

⁴³ We increased the scope of our testing in this area to include phase one due to the large percentage of errors we found in testing phase two subcontracts.

⁴⁴ City and County of Denver, “Standard Specifications for Construction General Contract Conditions” (2011), accessed July 26, 2022, <https://www.denvergov.org/files/assets/public/contract-administration/documents/contractor-resources/2011-denver-general-contract-conditions.pdf>, Title 11 § 1104.2(E).

⁴⁵ City and County of Denver, “Standard Specifications for Construction General Contract Conditions,” Title 11 § 1104.2(E).

subcontractor or sub-subcontractor. Written justification and approval shall be required for any percentage exceeding a total of 15%.⁴⁶

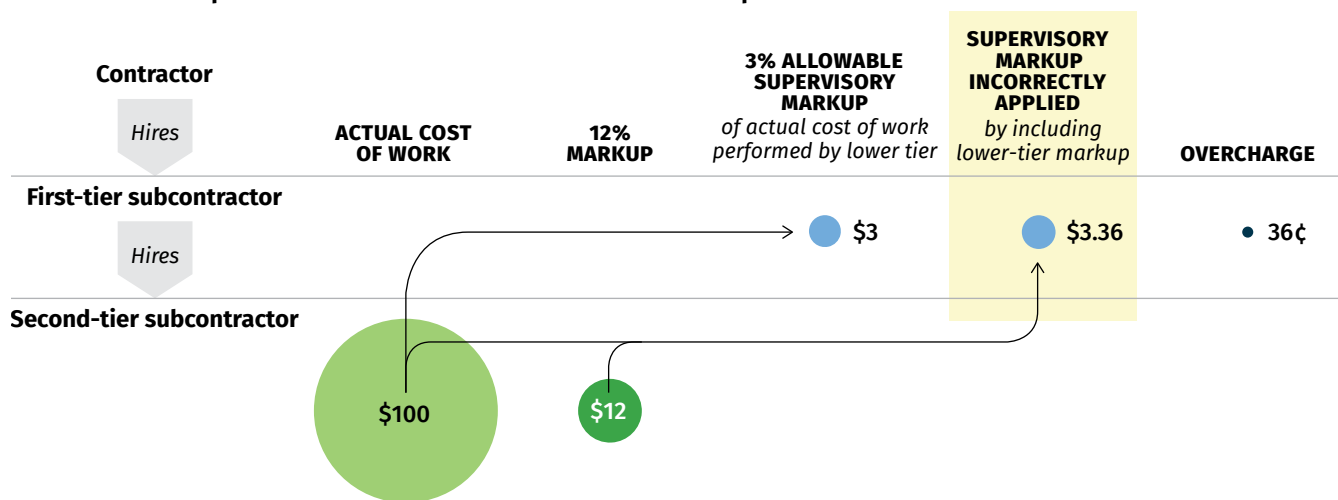
We found that not only was Hensel Phelps incorrectly calculating and charging the airport for such multi-tiered subcontracted work, but in some instances, Hensel Phelps also exceeded the 15% markup limit by layering markups.

- We used our professional judgment to select a sample of seven subcontractor change orders that had multiple tiers of work and found all but one – or 86% – had layered markup charges on top of each other. Of the \$93,000 in work we looked at from these seven subcontracts, we conclude the airport was overcharged by roughly \$600.
- In some cases, this incorrect layering of markup charges then caused the total markup to exceed the contract’s 15% cap. This was because the first-tier subcontractor calculated its markup without removing the second-tier subcontractor’s markup from the amount charged.

For example, as shown in Figure 4, if a second-tier subcontractor performed \$100 worth of work, its invoice to the first-tier subcontractor would be for \$112 – \$100 in actual costs plus the allowed 12% markup for profit.

If the first-tier subcontractor failed to remove the 12% markup – thus applying its 3% markup on the \$112, instead of only the \$100 in actual costs – the total markup charged would equal 15.4%.

FIGURE 4. Example of an incorrect subcontractor markup



Source: Graphic created by Auditor’s Office staff based on information in the city’s “Standard Specifications for Construction General Contract Conditions.”

⁴⁶ City and County of Denver, “Standard Specifications for Construction General Contract Conditions,” Title 11 § 1104.2(E).

This issue is what we identified in our sample of multi-tiered subcontracted work on the Great Hall project.

We could not determine the extent of the incorrect markups on multi-tiered subcontracted work without Hensel Phelps doing significant work to identify all subcontractors in phases one and two that were multi-tiered. However, based on our sample identifying 86% of multi-tiered work as having incorrect layering and because of the magnitude of the more than \$200 million in subcontracted work for phases one and two of the current Great Hall project, the total amount the airport was overcharged for these incorrect markups could be significant.

While we found no evidence of fraud during this audit, a project owner's inadequate oversight of the subcontracting process increases the potential for fraud to occur, such as through:

- **BID SHOPPING** – where a contractor reaches out to targeted subcontractors to selectively – and unfairly – award them contracts.
- **BID MANIPULATION** – where the subcontractor process benefits a favored subcontractor such as by the selection panel prematurely opening bids, altering bids, or extending how long the bid is open without justification.
- **COLLUSION AMONG THE CONTRACTOR AND SUBCONTRACTORS** – where, for instance, subcontractors collude with each other to submit overinflated bids they know will not be selected to ensure the selection of another subcontractor that may not have been selected otherwise.
- **BID SUPPRESSION** – where subcontractors agree to not bid on a project so a particular subcontractor wins.

We did not identify evidence that these risks have occurred on the current Great Hall project. However, without the airport having full knowledge of all subcontracts and without staff in the Special Projects Division properly reviewing and approving the subcontracts – including during the bidding process, the city risks overpaying or not receiving the best value for the work completed.

Furthermore, any overbillings in subcontracted work would be worsened because Hensel Phelps adds two fees on top of the cost of work: 2.75% for the contractor's fee and 2.5% for general and administrative costs. Therefore, overstated costs of work lead to overstated fees to Hensel Phelps.

Denver International Airport's Special Projects Division should oversee the awarding of subcontracted work to ensure the terms of construction manager/general contractor contracts are adhered to. Specifically, the division should develop and implement policies and procedures to ensure subcontracted work is awarded in a fair and reasonable way and, to the greatest extent possible, is based on open competition. At a minimum, the division should:

- Obtain and review all bid packages submitted by prospective subcontractors to ensure:
 - At least three bids for each trade are received — and if not, that the contractor makes an effort to re-bid or to document why three bids were not received.
 - The lowest, responsive, and qualified bidder is selected — and if not, document the justification as to why.
 - The contractor sufficiently documents its rationale when it chooses another bidder instead.
- Document the review and approval process for all bid packages for subcontractors chosen by the contractor.
- Obtain and review all subcontracts the contractor enters into to ensure proper oversight.

AIRPORT RESPONSE – DISAGREE
SEE [PAGE 41](#) TO READ THE AIRPORT'S RESPONSES.
SEE [PAGE 63](#) FOR THE AUDITOR'S ADDENDUM.

Denver International Airport's Special Projects Division should strengthen its oversight of multi-tiered subcontracted work to ensure markups are calculated in accordance with contract terms.

Specific to the current Great Hall project, the division should obtain information on all subcontractor work done during phases one and two that used multiple tiers of contractors. The division should recalculate the markup charges and seek credit for any amounts the airport was overcharged.

AIRPORT RESPONSE – DISAGREE
SEE [PAGE 41](#) TO READ THE AIRPORT'S RESPONSES.
SEE [PAGE 63](#) FOR THE AUDITOR'S ADDENDUM.

The airport did not properly oversee Hensel Phelps' process for hiring itself as a subcontractor

When a contractor acts as its own subcontractor to complete work on a project, it is called “self-performed work.”⁴⁷ Hensel Phelps Construction Co. used this widely accepted construction practice for phases one and two of the current Great Hall project.

However, we found the following issues when we looked into the company's self-performed work:

- Airport managers were unaware that Hensel Phelps had entered into a separate subcontract agreement with itself to complete self-performed work.
- Hensel Phelps exceeded its bid amount for self-performed subcontracted work during phase one.
- Airport managers did not properly oversee Hensel Phelps' process for hiring itself as a subcontractor and they did not take necessary measures to ensure Hensel Phelps' procurement process for this self-performed work was fair and reasonable.
- Airport managers allowed Hensel Phelps to structure the bidding of concrete work to its advantage, potentially reducing submissions by other prospective subcontractors.
- Airport managers allowed Hensel Phelps to self-award some work, which the company then subcontracted out to another subcontractor.
- Airport managers could not provide evidence that Hensel Phelps' bid for self-performed work was submitted before other subcontractors' bids to ensure a fair selection.
- Airport managers failed to provide a written review of pricing for one trade of construction work that Hensel Phelps had awarded to itself.

By not properly overseeing the awarding of self-performed work, the airport exposes itself to Hensel Phelps awarding itself work unfairly — resulting in the city paying more than it should for the work or the airport potentially not receiving quality work.

As with the multi-tiered subcontracted work, any overbillings in self-performed work would be worsened because Hensel Phelps adds two fees on top of the cost of work: 2.75% for the contractor's fee and 2.5% for general and administrative costs.⁴⁸ So once again, overstated costs of work leads to overstated fees to Hensel Phelps as well.

Meanwhile, Hensel Phelps could use inside knowledge of the project to its benefit, especially since the company has knowledge of the project's budget and finances.⁴⁹ As we discuss below, Hensel Phelps could also structure how a subcontract is bid to its advantage, such as combining two different trades knowing no subcontractor has the ability to perform both

⁴⁷ Ron Risner, “The Practitioner's Blueprint to Construction Auditing” (Altamonte Springs, Florida: The Institute of Internal Auditors Research Foundation, 2012), 123.

⁴⁸ City and County of Denver, Hensel Phelps Construction Co. contract (February 2020), Article IV § (H)(I).

⁴⁹ Ron Risner, “The Practitioner's Blueprint to Construction Auditing” (Altamonte Springs, Florida: The Institute of Internal Auditors Research Foundation, 2012), 124.

types of work or award the work to itself when it is not the lowest, most qualified bidder that could do the work.⁵⁰

Airport officials were unaware subcontracts existed for Hensel Phelps' self-performed work

Airport officials may not have been actively involved with reviewing, managing, and procuring the contractor's self-performed work. Specifically, they were not aware of the separate subcontracts that Hensel Phelps entered into that covered its self-performed work for both phase one and phase two of the current Great Hall project.

Instead, officials incorrectly believed Hensel Phelps' subcontracted work was included under the guaranteed maximum price listed in individual task orders. In fact, we found Hensel Phelps entered into a subcontract agreement with itself for both phases.

As discussed on page 21, airport officials needed 33 days to provide us with project subcontracts for the current Great Hall project after we requested them. Copies of subcontracts should have been easily accessible, readily available, and already reviewed by airport officials.⁵¹ The extended time it took the airport to provide us with the subcontracts, coupled with our need to request subcontracts that were not initially provided, indicates airport managers may not have had copies of subcontracts. Not having copies of these documents in their possession further illustrates how airport staff overrelied on Hensel Phelps.

The airport, as the project owner, should have knowledge of — and copies of — all subcontracts, because they may include markups outside the terms of the contract.⁵² Guidance from the Institute of Internal Auditors also warns that many subcontracts contain allowances or alternatives, so owners should review subcontracts to determine whether these items are present.⁵³

The airport paid Hensel Phelps nearly \$242,000 more than what was authorized for subcontracted work

Because the airport was not actively involved in how Hensel Phelps hired itself as a subcontractor, the airport paid Hensel Phelps \$241,565 more than the guaranteed maximum price authorized by a task order for phase one of the current Great Hall project. There also was no written approval for the excess work that Hensel Phelps self-performed nor was that work competitively bid out to ensure a fair procurement.

Hensel Phelps' construction contract with the airport says all

⁵⁰ Ron Risner, 124.

⁵¹ Ron Risner, 99.

⁵² Ron Risner, 99.

⁵³ Ron Risner, 99.

subcontracted work needs to be procured based on competitive bids, unless otherwise approved in writing by the airport officials overseeing the Great Hall project.⁵⁴

Hensel Phelps' only subcontract for phase one — signed in July 2020 — was initially for \$143,300 to install doors and hardware.⁵⁵ A change order two months later added \$629,100 in rough carpentry to the subcontract. We found the airport then paid another \$344,800 beyond that \$772,400 sum — for a total of over \$1.1 million going to Hensel Phelps for its self-performed subcontracted work.

We determined \$103,200 of this additional payment was reasonably spent through project funding that had already been allocated to Hensel Phelps in the task order. However, we determined the remaining \$241,600 was paid for work not authorized in the approved task order.

Airport officials said the excess might be from work Hensel Phelps was not originally subcontracted to complete — including unforeseen gaps in work that airport officials determined needed to be completed swiftly. However, we found Hensel Phelps was paid for this extra work from project allowances unrelated to what it had been subcontracted for.

“Project allowances” are estimated amounts used to cover construction costs that may not be apparent at the beginning of a project.⁵⁶ For example, while it was known that new flooring would be needed as part of the space being added to the Jeppesen Terminal, officials may not know the exact character, final cost, or level of quality of that flooring until later. As a result of this known unknown — i.e., that the airport needs flooring, it just does not know the exact details yet — the airport would set aside money as a flooring allowance.

Meanwhile, we found the guaranteed maximum price authorized in the original task order to install the doors and hardware was for more than the amount contracted for — \$170,000 versus \$143,251. Hensel Phelps erroneously included an extra \$26,746 in its task order, which meant the airport was overcharged.

Hensel Phelps staff called the overbilling a clerical error. We verified this error was corrected in December 2022, nine months after phase one ended.

RELATED FINDINGS

Starting on page 36, we discuss how staff in the Special Projects Division are not using project allowances correctly, which presents another significant risk that the airport might be overpaying for the Great Hall project.

⁵⁴ City and County of Denver, Hensel Phelps Construction Co. contract (February 2020), § SC-5.

⁵⁵ Hensel Phelps Construction Co., Hensel Phelps Construction Co. subcontract (July 2020), § 2a.

⁵⁶ Ron Risner, “The Practitioner’s Blueprint to Construction Auditing” (Altamonte Springs, Florida: The Institute of Internal Auditors Research Foundation, 2012), 176.

The American Institute of Architects says whenever costs are more or less than what is allowed, the contract sum should be adjusted through a change order.⁵⁷ The amount of the change order should reflect the difference between actual costs and what is allowed, as well as changes in the contractor's costs.

Subcontracted work Hensel Phelps awarded to itself was not procured in a fair and reasonable manner

Managers of the Special Projects Division who are responsible for overseeing the Great Hall project did not ensure Hensel Phelps followed a fair and reasonable bidding process when awarding itself a subcontract for self-performed work.

Hensel Phelps was awarded work to address gaps in work using a night crew. This work was also neither bid competitively nor approved in writing by airport managers — which are both requirements of the contract between the airport and Hensel Phelps.⁵⁸

Rather, airport officials said they approved this extra work by way of a task order. However, the task order for Hensel Phelps' phase one work included only the self-performed work for installing doors and hardware, plus the change order for the rough carpentry. Other work was not expressly included in the task order.

Hensel Phelps structured the bidding for concrete work to its advantage, potentially reducing submissions by other prospective subcontractors

Leading practices in construction say project owners must be aware that contractors can use their inside knowledge to obtain self-performed work.⁵⁹ For example, a contractor might do this by combining two types of subcontracted work into a single bid, knowing no subcontractor can perform both.

One bid package for phase two of the Great Hall project solicited subcontractors for concrete work that included both specialized work with vertical concrete columns and routine work with horizontal concrete.

Airport officials said Hensel Phelps intended to perform the vertical concrete work from the beginning because the company had a lot of experience with this skilled labor. Vertical concrete work is complex and high risk, while horizontal concrete work is what any concrete construction company is more accustomed to performing.

⁵⁷ Sara M. Bour, "Construction Contracting Basics – Allowances" (2012), accessed Nov. 10, 2022, <https://www.aiacontracts.org/articles/6529593-construction-contracting-basics---allowances>.

⁵⁸ City and County of Denver, Hensel Phelps Construction Co. contract (February 2020), § SC-5.

⁵⁹ Ron Risner, "The Practitioner's Blueprint to Construction Auditing" (Altamonte Springs, Florida: The Institute of Internal Auditors Research Foundation, 2012), 124.

Therefore, grouping together the horizontal and vertical portions of the work in a single bid package limited the competition, fairness, and transparency required by the contract.⁶⁰

The airport received only three bids for the subcontracted concrete work. Two proposals were deemed unresponsive because they did not address all portions of the scope in their bids. Meanwhile, Hensel Phelps' bid also did not address all portions of the scope — it addressed only the vertical concrete work — yet it nonetheless was awarded the entire job, according to its subcontract.⁶¹

Airport officials were unsure why so few companies bid for this construction work. However, concrete construction firms that were not qualified to complete the vertical portion of the work may have been discouraged from bidding, even though they were qualified to complete the horizontal work. The airport's review found Hensel Phelps' was the only bid to include pricing for the vertical concrete. As such, the airport declared Hensel Phelps the only responsive bid received.

The airport accepted Hensel Phelps' concrete bid, which came in \$143,429 over the estimated price for the work to be completed. The work was neither re-bid nor negotiated to ensure the airport received the best price.

Hensel Phelps said it would partner with Coloscapes Concrete, a concrete construction firm, to complete the horizontal portion of the work. However, we learned this partnership was likely only because the horizontal and vertical concrete work were combined in a bid package. Had the two types of work not been combined or if the procurement had been more fair, a different concrete construction company may have been awarded the job.

Airport managers allowed Hensel Phelps to self-award some work, which the company then subcontracted out to another subcontractor

Hensel Phelps was self-awarded the concrete work for phase two for \$1,751,258. Hensel Phelps' bidding documents make clear the company intended to perform only the vertical portion of the work, although it was awarded both the horizontal and vertical concrete work.

We learned from the contractor that Coloscapes Concrete was hired as a second-tier subcontractor, working to perform the horizontal concrete work that was originally awarded to Hensel Phelps.

This goes against leading practices, which say a contractor should not bid on self-performing work and then subcontract that work out, because the contractor could increase costs this way.⁶² Hensel Phelps staff told us

⁶⁰ City and County of Denver, Hensel Phelps Construction Co. contract (February 2020), § SC-5.

⁶¹ Hensel Phelps Construction Co., Hensel Phelps Construction Co. subcontract (July 2021), 5.

⁶² Ron Risner, "The Practitioner's Blueprint to Construction Auditing" (Altamonte Springs, Florida: The Institute of Internal Auditors Research Foundation, 2012), 128.

they charged no markups as the supervising subcontractor — but neither Hensel Phelps nor the airport provided documentation to confirm that.

Therefore, we cannot determine whether the airport was overcharged. The risk exists that this could happen on subsequent projects if airport officials do not provide more adequate oversight of subcontractor awards.

No evidence exists that Hensel Phelps' bid for subcontracted work was submitted before other bids for phase two

To ensure a fair and competitive bidding process, as required by the contract, Hensel Phelps' bids for subcontracted work should have been submitted before any other potential subcontractors' bids.⁶³ Doing so would eliminate the opportunity for Hensel Phelps to adjust its bid after seeing the bids of potential competitors.

However, we found that Hensel Phelps submitted its bid for door and hardware installation on the same day another prospective subcontractor — Metro Doors LLC — submitted its bid.

Because both bids were submitted on the same day, Hensel Phelps' self-performed work for the door and hardware installation may not have been procured in a fair and reasonable manner that ensured open competition to the greatest extent possible.

The airport did not provide a written review of pricing for some self-performed work before Hensel Phelps awarded itself a subcontract

Lastly, airport managers failed to provide a written review of pricing for Hensel Phelps' door and hardware installation bid for phase two of the project, as they had done for the concrete work.

When we asked airport officials about this, they said they did not perform the same level of review because the bid was for only \$18,614 in work — a significantly lower amount than for the \$1.7 million concrete bid.

Nonetheless, the bid for door and hardware installation should have gone through the same written evaluation to ensure a fair and competitive bidding process as required by the primary construction contract.⁶⁴ Additionally, leading practices say that once bids have been opened and recorded, they should go through an evaluation process wherein the lowest-priced, most qualified bidder is chosen.⁶⁵

The issues we identified with how Hensel Phelps awarded itself construction work are due to airport officials' overreliance on Hensel

⁶³ City and County of Denver, Hensel Phelps Construction Co. contract (February 2020), § SC-5.

⁶⁴ City and County of Denver, Hensel Phelps Construction Co. contract (February 2020), § SC-5.

⁶⁵ Ron Risner, "The Practitioner's Blueprint to Construction Auditing" (Altamonte Springs, Florida: The Institute of Internal Auditors Research Foundation, 2012), 125.

Helps to execute the subcontracting process and a lack of airport involvement. Additionally, the airport does not have policies and procedures that detail what the airport's oversight role should be during the subcontracting process.

1.7

RECOMMENDATION

Oversee contractors' awards for self-performed work

Denver International Airport's Special Projects Division should ensure its project managers are actively involved when any contractor awards itself subcontracted work to ensure the terms of the primary construction contract are adhered to with regard to awarding self-performed work.

Specifically, project managers should ensure the work is awarded in a fair and reasonable manner and, to the greatest extent possible, is based on open competition. At a minimum, project managers should:

- **Obtain and review all bid packages submitted by prospective subcontractors to ensure at least three bids for each trade are received — and if not, that the contractor makes an effort to re-bid — and that the lowest, responsive, and qualified bidder is selected.**
- **Review all bid packages for reasonableness — such as ensuring a contractor does not bid on self-performed work that they will subsequently subcontract out.**
- **Approve all self-awarded work.**
- **Obtain and review all self-performed work agreements entered into by the contractor so that managers are familiar with the terms and conditions contained within them and can ensure all costs are reasonable.**

**AIRPORT RESPONSE – DISAGREE
SEE [PAGE 41](#) TO READ THE AIRPORT'S RESPONSES.
SEE [PAGE 63](#) FOR THE AUDITOR'S ADDENDUM.**

The airport is not properly using construction allowances and verifying associated costs

Denver International Airport’s Special Projects Division is not properly validating, reconciling, and accounting for project allowances on the current Great Hall project — which could be costing the airport money.

“Project allowances” are estimates used to account for construction costs that may not be fully known at the beginning of a project — such as anticipating costs for flooring but not yet knowing the exact character, price, or level of quality that will be needed.⁶⁶

Phase one of the current Great Hall project had over \$12 million in project allowances and while phase two included just over \$11 million as of August 2022 — for a combined total of over \$23 million.

According to the American Institute of Architects, whenever the final costs are more or less than an estimated allowance, the contract’s total amount should be adjusted accordingly.⁶⁷ The amount of that adjustment reflects the difference between the actual costs and the estimated allowance. In other words, allowances should be placeholders in a contract’s total amount until the contractor incurs actual costs for the work.

For example, once the airport determined the details of the flooring it needed for the Great Hall project, Hensel Phelps would have the flooring purchased and installed. Only then would Hensel Phelps know the actual cost and be able to compare that amount against the money set aside as the flooring allowance. If the flooring cost more than the allowance, Hensel Phelps would adjust the construction contract and the airport would pay the difference. If the actual costs were less, Hensel Phelps would again adjust the contract but the airport would save money by paying less than the allowance estimated.

Figure 5 shows how allowances are meant to work, which is reflected in the construction contract between the airport and Hensel Phelps.

FIGURE 5. Using construction project allowances

Project allowances are estimates of what a scope of work may ultimately cost. They are used when costs are not yet determined, such as when design decisions have yet to be finalized.



Source: Graphic designed by Auditor’s Office staff.

⁶⁶ Ron Risner, 176.

⁶⁷ Sara M. Bour, “Construction Contracting Basics – Allowances” (2012), accessed Nov. 10, 2022, <https://www.aiacontracts.org/articles/6529593-construction-contracting-basics---allowances>.

As explained by the American Institute of Architects and as the construction contract requires, the actual costs incurred should be compared against the estimated allowance and adjustments should then be made to reflect the difference between the actual cost and the allowance.⁶⁸

However, we found airport staff in the Special Projects Division did not properly verify and use allowances for either phase one or phase two of the current Great Hall project. Specifically:

1. Once the airport and Hensel Phelps established an allowance for a specific portion of the project — such as drywall, for example — airport staff did not later require Hensel Phelps to submit documentation that could be used to validate and reconcile the actual costs against the allowance to see what adjustments were needed. Rather, the airport overrelied on Hensel Phelps by allowing the company to adjust allowance amounts without any verification.
2. On numerous occasions, the airport moved allowance amounts that were established for one particular scope of work and transferred them to other areas of the project where an allowance was either not set up at all or where an allowance was set up but was too low to cover actual costs. For example, taking a flooring allowance and using it to pay for electrical work or taking a portion of the flooring allowance and using it to cover a shortfall with an allowance for estimated electrical work.

Airport staff misunderstand how project allowances are defined, should be tracked, and accounted for. The Special Projects Division views project allowances as lump-sum items that are part of a contract and, as such, staff are not tracking actual costs and reconciling them with the project's estimated allowances. This practice neither complies with contract requirements nor the American Institute of Architects' guidance on allowance use.

When the airport and Hensel Phelps agree on an allowance estimate for a particular portion of work, the airport pays Hensel Phelps the entire allowance regardless of what the actual cost was.

In addition to airport staff misunderstanding how allowances should work, there could be a failure with how the airport develops its initial allowance estimates. By moving allowance amounts from one specific scope of work and applying it toward another scope of work — as we found was happening — it indicates the airport's Special Projects Division may have overestimated an allowance in one area and underestimated it in another.

Because of this, the airport exposes itself to overpaying for the Great Hall project by:

- Not requiring Hensel Phelps to submit documentation that the airport could then use to validate actual costs against the amount set aside.

⁶⁸ City and County of Denver, Hensel Phelps Construction Co. contract (February 2020), Article IV § (B)(iv).

- Transferring allowances across different scopes of work than what an allowance was intended for.

Overpaying for the cost of work associated with an estimated allowance would be compounded through Hensel Phelps' 2.75% contractor fee and its 2.5% general and administrative fee, which are calculated using the cost of work.⁶⁹

1.8

RECOMMENDATION

Validate and reconcile project allowances

Denver International Airport's Special Projects Division should:

- Ensure division staff understand how construction allowances are defined by industry standards and that they understand how allowances should be tracked, reconciled, and used.
- Require contractors to track and reconcile actual costs incurred and compare them against the estimated allowance amount to ensure they do not overcharge the airport.
- Require contractors to submit supporting documentation, such as vendor invoices and time sheets, to allow the airport to verify actual costs incurred – that is, that the actual costs are accurate and allowable under the contract terms.

AIRPORT RESPONSE – DISAGREE

SEE PAGE 41 TO READ THE AIRPORT'S RESPONSES.

SEE PAGE 63 FOR THE AUDITOR'S ADDENDUM.

1.9

RECOMMENDATION

Appropriately use project allowances

In conjunction with Recommendation 1.4, Denver International Airport's Special Projects Division should include in its policies and procedures specific guidance on how allowances are to be estimated and used in a construction project. At a minimum, this should include prohibiting the use of allowances for any other costs of work except for the specific scope of work an allowance was initially created for.

AIRPORT RESPONSE – DISAGREE

SEE PAGE 41 TO READ THE AIRPORT'S RESPONSES.

SEE PAGE 63 FOR THE AUDITOR'S ADDENDUM.

⁶⁹ City and County of Denver. Hensel Phelps Construction Co. contract (February 2020), Article VII § (J).

The airport did not adequately review general conditions costs

“General conditions costs” are expenses a contractor incurs that do not directly relate to construction activities.⁷⁰ For example, these may include administrative costs, phone and internet service, and expenses related to training, like travel and registration fees.

General conditions costs are a significant cost for the current Great Hall project. As of August 2022, they made up about 13% of total costs, or about \$28.4 million.

However, because airport managers are not adequately reviewing Hensel Phelps’ calculations for general conditions costs, they cannot know whether the items that make up the rate for monthly billings are of reasonable amounts and allowable under the contract. While these costs can be billed to the airport in several different ways, the contract with Hensel Phelps allows the company to bill general conditions costs at a rate of 145% of each month’s costs for supervisory staff, which is billed hourly.

The contract details what items are allowed to be included in general conditions costs. For example, these costs could be for “taxes, insurance, contributions, assessments and benefits required by law” as well as reasonable data-processing costs related to the project and for “equipment owned by the Contractor [that is] assigned to the Contractor’s supervisory and administrative personnel.”⁷¹

Task orders include a range of specific categories of expenses that Hensel Phelps has included in its general conditions costs. These include expenses for depreciation, business meals, and other miscellaneous expenses.⁷²

While the airport agreed to these items, the broad categories and the lack of a breakdown and supporting documentation for specific amounts prevents the airport from knowing whether the amounts are reasonable and permitted under its contract with Hensel Phelps.

Furthermore, although the contract details specific categories of expenses that can be billed under general conditions costs, neither the airport nor Hensel Phelps were able to provide us with a detailed breakdown showing how much of each component makes up the 145%.

By not having a detailed schedule of items that make up the full rate, neither we nor airport officials can confirm whether the airport paid for costs that are not allowed under its contract with Hensel Phelps. Additionally, general conditions costs billed to the airport for allowable items, such as certain taxes, may be inflated.

⁷⁰ City and County of Denver. Hensel Phelps Construction Co. contract (February 2020), Article IV § (G).

⁷¹ City and County of Denver, Hensel Phelps Construction Co. contract (February 2020), Article IV § (G)(vi).

⁷² Denver International Airport, Task Order Authorization, Great Hall completion, Task Order No. 01 and Task Change Order No. 03 (September 2020).

Denver International Airport's Special Projects Division should require contractors to provide a detailed breakdown of the components making up general conditions costs on all future projects. Staff should document their review of this schedule to include allowable and unallowable items and the reasonableness of individual items.

AIRPORT RESPONSE – DISAGREE
SEE [PAGE 41](#) TO READ THE AIRPORT'S RESPONSES.
SEE [PAGE 63](#) FOR THE AUDITOR'S ADDENDUM.

AGENCY RESPONSE TO AUDIT RECOMMENDATIONS

The following agency narratives — including uses of bold for emphasis — are reprinted verbatim from the airport’s response letter.



RECOMMENDATION 1.1

AGENCY RESPONSE:
AGREE

AGENCY’S TARGET DATE
FOR IMPLEMENTATION:
JUNE 1, 2023

SEE PAGE 63 FOR THE
AUDITOR’S ADDENDUM.

*The program’s overall health is excellent - **Phase 1 was completed 45 days ahead of schedule and more than \$25M under budget.** Phase 2 is tracking to be completed ahead of schedule and under budget. Even with this, DEN agrees with this Recommendation and has been evaluating and developing a selection guide after the Auditor’s report regarding DEN’s Peña Boulevard project. DEN Special Projects will utilize this tool, as appropriate to its projects.*

In addition, regarding the specific findings included with Recommendation 1.1, DEN has the following responses:

Auditor finding (pg. 10): Airport officials could not provide us with any analysis of how they determined in 2019 that the construction manager/general contractor approach was best for the revised renovation plans.

DEN response: DEN’s lengthy risk-based analysis on what delivery methodology to deploy on the Great Hall Program was not documented in a tool such as that proposed. However, that analysis did take place through several meetings where the CMGC procurement method was chosen. The project schedule did not allow for the selection of either a design-bid-build (D/B/B) or design-build (DB) delivery methodology. A DB could also be categorically eliminated from consideration because of the lack of confidence in the existing design documents from the previous developer as the basis for the continuing design. First, in order to use the D/B/B method, DEN would have needed to procure a new Architect and then design the entire project prior to issuing 100% Construction Documents and then procuring the construction. The Architect’s initial design for the Great Hall began in November 2019. Design of the final bid package was not issued until March 2021. Thus, DEN would not have been able

to even issue an Invitation to Bid until March 2021. This would have delayed the work by 16 months and included another 16 months of escalation in construction costs, which during the COVID-19 pandemic were significant. There was simply no path where DEN could subject the already frustrated traveling public, airlines and other stakeholders to the longest possible recovery procurement approach. Beyond the lack of confidence in the developer's design documents, utilizing DB delivery also would have significantly delayed the Project. In order to release a DB RFP package, the City would have had to issue an RFP for an Architecture firm to develop the bridging documents and, once the documents were complete, issue an RFP for a DB firm, interview and select a DB firm, and then begin the design. This process would have taken at least a year as well. In contrast, using the method chosen, the Architect was able to begin immediately, and the Contractor could participate in reviewing the design and initial work under the CMGC method.

Auditor finding (pg. 10): "Two sets of leading practices are especially relevant: A manual developed by the Colorado Department of Transportation that is specific to construction manager/general contractor projects..."

DEN response: The referenced manual (cited as: Colorado Department of Transportation, "Construction Manager/General Contractor Manual" (January 2015)) states that the "CMGC in transportation projects has evolved distinct differences from the CMAR delivery used for vertical construction" (p.1). For example, "The CM in transportation projects self-performs a majority of the Work...whereas the CM in vertical construction manages multiple Contractors who perform the work". Thus, the manual confirms by its own terms that the CDOT reference is NOT "especially relevant" for a vertical CMGC project like the Great Hall Project. In addition, CDOT created its manual in 2015 in response to changes in Federal law allowing the use of CMGC on federally-funded projects like CDOT's road and bridge projects. The vertical building industry has been utilizing the CMGC delivery method since the late 1980s and uses a different approach.

Auditor finding (pg. 11): "After our May 2022 audit of the Peña Boulevard improvements construction contract, airport officials agreed to implement our recommendation that they formalize their project delivery method selection process..."

DEN response: The Great Hall Construction Contract was executed in 2020, over 2 years before the Peña Boulevard audit. DEN Special Projects also will use the selection process tool in the future.

Auditor finding (pg. 12): "Meanwhile, in August 2022, the airport published its "after-action" report following its termination of

the Great Hall Partners contract in 2019. Airport officials meant for this report to provide “an open and transparent summary of what we did well and would do again, the challenges we encountered, what we would do differently next time.” The report said that in retrospect, a different project delivery method may have been better suited for the Great Hall construction project...”

DEN response: The design and construction of the Great Hall Project by the former developer was pursuant to a Design-Build construction method, not a CMGC. Thus, DEN did select a different delivery method in completing the new Great Hall Project.

RECOMMENDATION 1.2

**AGENCY RESPONSE:
DISAGREE**

**SEE PAGE 63 FOR THE
AUDITOR'S ADDENDUM.**

DEN followed the requirements in the Charter, Denver Revised Municipal Code, and Executive Order 8 and as much of DEN's procurement process as was practicable under the circumstances in procuring the contract. DEN did not have a procurement process for expedited procurements or exceptional circumstances like this one, which included potential litigation and a contractual handover of an in-progress project. Further, at the time, DEN's procurement process was time consuming and was estimated to take more than a year, if DEN had followed its existing SOPs. This was untenable with the exterior walls of the Terminal demolished and existing systems and building being exposed to freezing temperatures. As a result, it would have taken too long to procure the contract through DEN's then-existing process. Instead, DEN solicited proposals from six potential proposers deemed qualified to perform the work, and three submitted proposals. All proposals were reviewed in regard to the contractors' qualifications and initial pricing, and all contractors were interviewed. One panel member was from a DEN stakeholder representing the airlines. All panel members were seasoned in the procurement and contractor selection process and, therefore, separate training was not deemed to be necessary. The selection panel was also approved by the DEN CEO. After interviews, the panel convened to discuss the proposals, interviews, and proposed costs. The panel unanimously approved the final selection. All bidders were notified of the results and a meeting was held with the airlines to share the results with them. We are not aware of a directive from Airport Management at that time directing staff to minimize records due to the number of open records requests; rather the focus was on a swift, efficient, fair and competitive selection process to get construction restarted as soon as possible. All procurements overseen by DEN Special Project since the Great Hall procurement in 2019 have followed DEN's SOPs.

RECOMMENDATION 1.3

AGENCY RESPONSE:
AGREE

AGENCY’S TARGET DATE
FOR IMPLEMENTATION:
DEC. 1, 2023

DEN agrees with this Recommendation and will develop new construction procurement procedures for circumstances as this, that require expedited procurements. DEN Special Projects will work with DEN’s Business Management Services group to develop a process that conforms to City and Federal procurement requirements.

RECOMMENDATION 1.4

AGENCY RESPONSE:
AGREE

AGENCY’S TARGET DATE
FOR IMPLEMENTATION:
DEC. 1, 2023

For this CMGC contract, DEN Special Projects will expand upon its current procedures and include more detail that fully documents the primary fact that the Program’s policies and procedures currently being followed.

RECOMMENDATION 1.5

AGENCY RESPONSE:
DISAGREE

SEE PAGE 63 FOR THE
AUDITOR’S ADDENDUM.

As noted in the response to Recommendation 1.4, DEN Special Projects will expand upon its current procedures and include more detail fully documenting that the Great Hall Project’s policies and procedures currently being followed. These will include procedures for strengthening the documentation process for the subcontractors chosen to work on the Program.

DEN Special Projects oversaw the procurement of subcontracted work to ensure the terms of the CMGC contract were satisfied. DEN obtained and reviewed all bid package recommendations and subcontracts. The Contract does not require the Contractor to get three bids for each package. Because the Contractor cannot control which subcontractors bid and cannot interfere in their decision-making, the Contract instead requires “fair and open competition, based upon competitive bids”. Fair and open competition does not relate to the number of bids or proposals received; it relates to the method of the solicitation by ensuring that any subcontractor who is qualified is able to bid and that all who participate in the bidding has a fair chance and the competition is open to those who are qualified. To date, the Contractor has held 548 outreach events and ensured fair and open competition for each bid package.

Oversee the subcontracting process:

Denver International Airport’s Special Projects Division should oversee the awarding of subcontracted work to ensure the terms of construction manager/general contractor contracts are adhered to. Specifically, the division should develop and implement policies and procedures to ensure subcontracted work is awarded in a fair and reasonable way and, to the greatest extent possible, is based on open competition. At a

minimum, the division should: **Disagree with finding - DEN already performs this requirement.**

- Obtain and review all bid packages submitted by prospective subcontractors to ensure: **DEN already performs this requirement.**
 - At least three bids for each trade are received - and if not, that the contractor makes an effort to re-bid or to document why three bids were not received. **Disagree with this finding - a minimum of three bids is not required by industry best practices or this contract.**
 - The lowest, responsive, and qualified bidder is selected - and if not, document the justification as to why. **Disagree with this finding - DEN reviews the Contractor's recommendation, and it is the Contractor's risk if the subcontractor can't perform and responsibility to manage them (refer to next item for reference to documentation).**
 - The contractor sufficiently documents its rationale when it chooses another bidder instead. **Agree - DEN Special Projects will ensure the CMGC properly documents their evaluation process to support their recommendation.**
- Document the review and approval process for all bid packages for subcontractors chosen by the contractor. **Agree - DEN Special Projects will adopt a consistent documentation process.**
- Obtain and review all subcontracts the contractor enters into to ensure proper oversight. **Disagree with finding - DEN performs this requirement.**

In addition, regarding the specific findings included with Recommendation 1.5, DEN has the following responses:

Auditor finding (pg. 21): **"DELAYS IN PROVIDING SUBCONTRACTS AND LACK OF KNOWLEDGE OF ALL SUBCONTRACTS** - Based on our audit work as of August 2022, we do not believe airport officials had copies of all 34 subcontracts for phase two of the Great Hall project readily available. Airport officials took 33 days to provide us with initial copies of the subcontracts we asked for. After evaluating them, we discovered four subcontracts were missing that should have been included in the response to our request. This led us to conclude airport officials did not have knowledge of all phase two subcontracts in existence."

DEN response: *This is incorrect. DEN had copies of all subcontracts. The Auditor's original request for project documentation included large volumes of documents including thousands of pages of back-up material. Given the time and personnel resources needed to compile these documents, while the same DEN staff were also fully engaged in advancing*

the Project and moving 20 airlines within the Terminal. DEN developed a schedule to transmit the requested documents in stages over the course of several weeks. This schedule was shared with the Auditor and the documents were transmitted on the scheduled dates. The referenced subcontracts were included in the last package of documents transmitted 33 days after the request. The four missing subcontracts were simply an error in transmission and were subsequently forwarded when found not to have been included. Thus, the auditor is erroneously implying the timeline to transmit documents is tantamount to lack of possession or knowledge of the work.

Auditor finding (pg. 21): **“DELAYS IN PROVIDING SUBCONTRACTS AND LACK OF KNOWLEDGE OF ALL SUBCONTRACTS** - Meanwhile, we learned airport officials also did not have a complete understanding of all subcontracts Hensel Phelps had issued for phase two. On two occasions, the airport did not know that Hensel Phelps had entered into subcontracts with itself to perform some construction work.”

DEN response: This is incorrect. The work referenced in this statement was for “concrete” and “Doors, Frames and Hardware”. The amounts for both scopes of work were included in the CMGC’s GMP proposal which was reviewed, approved, and executed by DEN in a task order change order. DEN had full knowledge and oversight of this work.

Auditor finding (pg. 22): **“NO WRITTEN APPROVAL FOR SOME SUBCONTRACTS** - The airport’s contract with Hensel Phelps says each subcontractor that Hensel Phelps expects to perform work must be accepted in writing by the airport before the subcontracted work begins.”

DEN response: The intent of this requirement is that DEN review and approve of the subcontractors performing work under the Contractor. Whether the approval of each subcontract took place via written email, or as documented in the weekly project cost review meeting minutes, each subcontract was reviewed and approved. We acknowledge the documentation process needs to be strengthened, therefore, we will now provide an emailed approval to the contractor once a recommended trade partner subcontract is reviewed and found to be acceptable.

Auditor finding (pg. 22): **“LACK OF COMPETITIVE BIDDING** - We found that for 20 of the 34 subcontracts for phase two, Hensel Phelps either did not competitively bid the work or Hensel Phelps received less than the recommended three bids. Staff at Hensel Phelps said the company made no attempt to re-bid these 20 subcontracts, which totaled over \$20 million in construction work.”

DEN response: The Auditor’s rationale for stating there was a

*“Lack of Competitive Bidding” and that 20 of 34 subcontracts were not competitively bid is based on the Auditor’s unilateral requirement that a “competitive bid” require three proposals. The Contract’s Special Condition SC-5 states: “The Contractor recognizes and accepts that the subcontractor and supplier selection... is based on fair and open competition...(and) shall be procured based upon competitive bids awarded to the lowest, responsive and qualified bidder...”. The Contract does not require that three bids must be received to meet SC-5. Instead, the Contractor is required to create a fair and open competition for all packages, regardless of how many bids are received. To date, the CMGC has held **548** outreach events and ensured fair and open competition for each bid package. As discussed with the Auditor, the CMGC employed a wide-ranging solicitation program to promote not only fair and open competition, but also to maximize M/WBE participation for the entire project. These efforts included an extensive process for advertising the upcoming solicitation opportunities as part of the Great Hall Project. All solicitations were made public and open to any firm that wanted to submit a bid. Firms had 2 ways of accessing and bidding the Great Hall opportunities. * Option 1 – All opportunities were linked to DEN’s “flydenver.com” website page with a direct link that navigates to the advertising page on DEN’s website which is maintained for the Subcontracting opportunities with the CMGC on the Great Hall program. This included a direct link on the referenced webpage to navigate a firm to the “Building Connected” website that the CMGC maintains for all bid opportunities. Any firm has the ability to register on Building Connected and bid on the listed opportunities at the Great Hall. * Option 2 – All opportunities are linked directly to the CMGC’s website page. This link navigates to the section of the CMGC’s website that will allow any firm to register with Building Connected and view/bid on any solicitation opportunities part of the Great Hall Program. In addition to the above public solicitations both via the DEN Airport and the CMGC’s websites, the CMGC utilized a variety of strategies to maximize the number of companies interested in bidding. Examples of the additional efforts made by the CMGC include publishing opportunities and solicitations in advance of the Bid Package issuance through the DSBO website, DEN newsletter and the CMGC’s newsletter announcements, project specific outreach events, pre-bid meetings, pre-bid site walks, and direct phone calls to the trades.*

*Auditor finding (pg. 23): **LACK OF COMPETITIVE BIDDING** - In some cases, airport officials were also unaware that Hensel Phelps had waived the requirement to competitively bid subcontracted work. Although Hensel Phelps’ contract with the airport allows for this, airport officials must authorize this waiver with express written approval. We identified four*

instances when the airport had not given express written approval for the exceptions. In these cases, the subcontracts were for work that Hensel Phelps determined only one subcontractor could do or the subcontract went directly to an airport-preferred vendor.”

DEN response: DEN was aware of and reviewed these proposed scopes of work prior to the execution of the GMP. The Phase 2 Task Order Change Order (TOCO) which established the final GMP included the following scopes of work, which were not competitively bid at the direction of DEN.

- *TK Elevator – Scope: elevators and escalators. The products purchased and received (and transferred to DEN for installation) by the former developer were TKE elevators and escalators. Therefore it was most cost efficient to use the same provider and to not reprocur elevators and escalators and determine how to dispose of the ones previously received.*
- *Powers Products Co. - Scope: vertically folding partitions. This is specialty equipment for security of new checkpoint, and this is the only certified installer for this product in this region.*
- *Brock Solutions - Scope: Baggage Handling Systems (BHS) Controls and Startup. This contractor provides controls for DEN’s BHS systems and therefore was needed for continuity of services.*
- *Diamastone - Scope: Large Format Tile Supplier. Required for continuity of flooring materials to be installed throughout the Great Hall.*

The proposed final GMP from HP was reviewed in detail by DEN including the costs proposed for these four scopes of work. By signing and executing the TOCO, DEN provided written approval for these four subcontracts in accordance with SC-5.

*Auditor finding (pg. 23): “**SOME SUBCONTRACTS MAY NOT HAVE BEEN AWARDED TO THE LOWEST, MOST QUALIFIED BIDDER** - Not only does the airport’s construction contract with Hensel Phelps require subcontracted work to be based on competitive bids, it requires subcontracts to be awarded to the “lowest, responsive, and qualified bidder. But Hensel Phelps did not adhere to this requirement for all subcontracts. In six instances where Hensel Phelps did not select the lowest bid, the airport could not provide us with documentation justifying the reason for its choice.”*

DEN response: As discussed previously with the Auditor, each bid package was organized by an “Instructions to Bidders (ITB)” document that outlined the bidding process to include the scopes of work to be bid (in that particular package) and the

selection criteria for award. The outlined selection criteria for award for the more complex scopes (such as Steel, Mechanical, Electrical, Fire Protection, Demolition, Glass & Glazing, Drywall, etc.) included the following evaluation components: pricing, project approach & schedule, relevant project experience / project team, and MWBE participation. For the Phase 2 purchasing, all recommended, approved and awarded subcontracts/purchase agreements made to date have been to the lowest bidder except for a few of these complex scopes where the scoring criteria evaluation and review process outlined in the ITB resulted in award to a subcontractor with the best overall score and qualifications, but not necessarily the lowest price. This evaluation and review process utilized has greatly reduced risk and has increased the MWBE participation on the project. It should be noted that DEN reviews the CMGC's final recommendation, which is the CMGC's risk and responsibility. We acknowledge the documentation process needs to be strengthened in these instances, therefore, we will now provide documentation justifying the reasons for not simply awarding to the lowest bidder.

Auditor finding (pg. 24): **"SOME SUBCONTRACTS EXCEEDED BID PROPOSAL AMOUNTS** - We found the dollar amounts for three of the 34 phase two subcontracts were for more money than the vendor originally proposed. As shown in Table 1, this amounted to the airport paying over \$1 million more than originally proposed across three subcontracts."

DEN response: The statement that DEN was "paying...more than originally proposed" is incorrect. In a CMGC project, the Contractor is preparing a GMP price that includes all anticipated costs. In the process of interviewing the bidders, the Contractor may identify costs or scope that were not included in the bids because they were missed or the documents were unclear, yet that scope and cost needs to be covered. The Contractor adds those costs to the "original bid" in order to ensure the covered scope costs are as complete as possible. Thus, the final cost might be more than the original bid.

In the case of the building concrete, there were two elements of work that made-up the entire scope of "building concrete" - vertical concrete and horizontal concrete. The CMGC submitted a bid for the vertical concrete for \$1,115,407 as indicated in the report. No other bidder bid on the vertical scope. After analyzing the horizontal concrete bids, the CMGC added the lowest responsive bidder's horizontal concrete proposed amount of \$635,851 to result in a total "building concrete" cost of \$1,751,258 as shown in the Auditor's Table 1. In arriving at this overall price, the CMGC did not mark up the horizontal concrete bidder's proposal and combined both elements of building concrete in their subcontract recommendation to DEN. Had the

CMGC recommended to DEN that a subcontract be issued to them for \$1,115,407 and a separate subcontract be issued to the horizontal concrete subcontractor for \$635,851, the result would have been the same.

Drywall - The difference between “bid” and “subcontract” of \$25,574 is the cost of design services the Contractor was required to do for the cold-metal framing that was identified as part of the overall drywall scope, but not included in the initial bid. This was added to the bid amount prior to executing the subcontract to ensure the entire scope was covered. It was identified during the buyout process, to which, DEN was a party to the interview with that subcontractor.

Structural Steel- In regard to the discrepancy between the amount bid and the amount subcontracted, DEN sent the Auditor the Contractor’s recommendation letter, dated 7/26/21 which explains \$241,264 of the difference. The balance is indicated in the line items contained in the subcontract and account for small scope items found during buyout, but not covered in the initial bid. The Auditor’s Office has been sent all the documentation which supports the additional scope that was added post bid and all of it has been verified as fair and reasonable by DEN.

Auditor finding (pg. 24): “SUBCONTRACTS NOT SIGNED IN ADVANCE OF WORK PERFORMED - The construction contract between the airport and Hensel Phelps specifies that construction work must begin within 10 days of the airport issuing a task order to Hensel Phelps or its subcontractors. However, we found several subcontractors did not have signed contracts in place at the time the airport signed a task order for phases one and two of the current Great Hall project. Specifically, nine subcontracts were signed after the airport issued a task order, none of which were signed within 10 days. This indicates either that work did not begin within the required 10 days of the task order – which would violate the contract requirement – or that work began without a signed contract in place, which risks subcontractors working on-site without a signed agreement in place.”

DEN response: This statement is incorrect. Article III of the agreement between the DEN and CMGC reads, “the Contractor agrees to begin the performance of the work...within ten (10) days after receiving a Task Order Notice to proceed...”. The audit report uses the term “construction work” but the Contract states “performance of the work”. “Performance of the work” in a CM/GC contract includes both Preconstruction Services as well as Construction Services. Typically, the initial Task Order for a CMGC project is written to cover Preconstruction Services including due diligence and assisting with target pricing to keep the design within the budget. However, under the Contract, there

is only one NTP for each task order. Hence, when a Task Order NTP is issued, Contractor's commencement of "the performance of the work...within ten (10) days...", means that the Contractor must begin Preconstruction services. That does not mean that Construction services begins at the same time. Furthermore, it is to be expected that several subcontracts would have not been executed immediately following the issuance of the task order as the design would not have been completed, making subcontractor buyout impossible.

RECOMMENDATION 1.6

**AGENCY RESPONSE:
DISAGREE**

**SEE PAGE 63 FOR THE
AUDITOR'S ADDENDUM.**

Markups on multi-tiered subcontracted work on Change Orders, Allowances and Contingencies specific to the Great Hall Program were calculated correctly and consistently. DEN Special Projects applies Title 1104.2.E(2) of Denver's General Contract Conditions to all subcontracted work utilizing Allowances and Contingencies. Title 1104.2.E(2) of Denver's General Contract Conditions states that "A supervising Subcontractor (if any) shall be entitled to a three percent (3%) markup on the actual price charged to the Subcontractor by a Subcontractor of a lower tier". The term "actual price charged to the subcontractor" would be inclusive of the 12% markup allowed by Title 1104.2.E(1). As discussed elsewhere, "actual price" is interpreted to mean the invoice price rather than a price calculated as time and materials. While DEN Special Projects acknowledges that other City agencies could interpret this differently, this is DEN Special Projects' consistent interpretation. Therefore, the costs presented and paid for under the Great Hall Program were correct.

Regarding the Auditor's finding that "Hensel Phelps also exceeded the 15% markup limit by layering markups", we acknowledge this case may occur on limited basis when there are numerous tiers of subcontractors. At a 15% limit, the Denver General Contract Conditions would only allow for two tiers of subcontractors (12% for subcontractor performing the work + 3% for supervising subcontractor). However, on a large complex program such as the Great Hall, there are cases where there are more than two tiers of subcontractors, which would lead to the 15% being exceeded. Fortunately, the Denver General Contract Conditions allows for this situation in Title 1104.2.E(5) which states: "...Written justification and approval shall be required for any percentages exceeding a total of fifteen percent (15%)". In the cases where this occurs, the contractor's proposal details the multiple tiers of subcontractor costs and their markups. Once submitted, DEN reviews them to ensure they're fair and reasonable prior to final approval.

RECOMMENDATION 1.7

AGENCY RESPONSE:
DISAGREE

SEE PAGE 63 FOR THE
AUDITOR'S ADDENDUM.

DEN Special Projects performed a detailed review of the Contractor's proposed self-performed work packages. DEN Special Projects has seen no evidence that the CMGC structured the bidding for its self-performed work packages to its advantage and would have required the Contractor to re-do a package if this occurred.

As noted in the response to Recommendation 1.4, DEN will expand upon its current Program guidelines to document the Program's detailed policies and procedures already in place. These will include procedures for strengthening the documentation process for the subcontractors chosen to work on the Program. To illustrate the magnitude of the CMGC's self-performed work on Phases 1 & 2, both were 0.73% of the overall costs.

Regarding each specific Recommendation included within 1.7, DEN has the following responses:

Oversee contractors' awards for self-performed work

Denver International Airport's Special Projects Division should ensure its project managers are actively involved when any contractor awards itself subcontracted work to ensure the terms of the primary construction contract are adhered to with regard to awarding self-performed work.

Specifically, project managers should ensure the work is awarded in a fair and reasonable manner and, to the greatest extent possible, is based on open competition. At a minimum, project managers should:

- Obtain and review all bid packages submitted by prospective subcontractors to ensure at least three bids for each trade are received – and if not, that the contractor makes an effort to re-bid – and that the lowest, responsive, and qualified bidder is selected. **Disagree with this finding – As discussed above, the Contract does not require three bids for a bid process to be “fair and open competition, based upon competitive bids”. Further, to date, the Contractor has held 548 outreach events and ensured fair and open competition for each bid package.**
- Review all bid packages for reasonableness – such as ensuring a contractor does not bid on self-performed work that they will subsequently subcontract out. **Disagree with finding – also as discussed above, this finding relates to one bid package and there was nothing improper about it.**
- Approve all self-awarded work. **Agree – While DEN Special Projects does approve this, it will adopt a consistent documentation process.**
- Obtain and review all self-performed work agreements

*entered into by the contractor so that managers are familiar with the terms and conditions contained within them and can ensure all costs are reasonable. **Disagree with finding - DEN already performs this requirement.***

In addition, regarding the specific findings included with Recommendation 1.7, DEN has the following responses:

*Auditor finding (pg. 30): **“Airport officials were unaware subcontracts existed for Hensel Phelps’ self-performed work** - Airport officials may not have been actively involved with reviewing, managing, and procuring the contractor’s self-performed work. Specifically, they were not aware of the separate subcontracts that Hensel Phelps entered into that covered its self-performed work for both phase one and phase two of the current Great Hall project. Instead, officials incorrectly believed Hensel Phelps’ subcontracted work was included under the guaranteed maximum price listed in individual task orders. In fact, we found Hensel Phelps entered into a subcontract agreement with itself for both phases.”*

DEN response: This is incorrect; DEN was aware of, and reviewed in detail, these proposed scopes of self-performed work that became part the GMPs for both Phase 1 and Phase 2. The Task Order Change Orders (TOCO) which established the final GMP for both phases included all of the CMGC’s self-performed scopes of work.

For Phase 1, the CMGC’s self-performed work included doors, frames, and hardware (DFH) as well as rough carpentry. The CMGC’s proposal for the DFH scope was presented to DEN prior to the execution of the final GMP. DEN’s initial Task Order with the CMGC, executed on 3/5/2020, provided the initial \$77,879,000 in funding to allow the initial scopes of work to be developed and bought-out under subcontracts while the design and final GMP were being developed. At the submission of their final GMP proposal, the CMGC included these approved DFH costs in their summary and also submitted new proposed costs for their rough carpentry scope of work. When the final GMP was reviewed and approved by DEN through execution of the TOCO, these rough carpentry costs were approved as well. There was no “incorrect belief” about the cost of the self-performed work.

For Phase 2, the CMGC’s self-performed subcontracts included building concrete and doors, frames and hardware (DFH). Both of these scopes of work were reviewed by DEN, approved, and included in the final GMP submission.

*Auditor finding (pg. 30): **“Airport officials were unaware subcontracts existed for Hensel Phelps’ self-performed work** - As discussed on page 21, airport officials needed 33 days to provide us with project subcontracts for the current Great*

Hall project after we requested them. Copies of subcontracts should have been easily accessible, readily available, and already reviewed by airport officials. The extended time it took the airport to provide us with the subcontracts, coupled with our need to request subcontracts that were not initially provided, indicates airport managers may not have had copies of subcontracts. Not having copies of these documents in their possession further illustrates how airport staff overrelied on Hensel Phelps.”

DEN response: As stated in a previous comment, this assumption is incorrect. DEN had copies of all subcontracts. The Auditor's original request for project documentation included large volumes of documents made up of thousands of pages of back-up material. Given the time and personnel resources needed to compile these documents, while DEN was also fully engaged in moving 20 airlines within the Terminal, DEN developed a schedule to transmit the requested documents in stages over the course of several weeks. This schedule was shared with the auditor and the documents were transmitted on the scheduled dates. The referenced subcontracts were included in the last package of documents transmitted, which happened to be 33 days.

Auditor finding (pg. 30): “The airport paid Hensel Phelps nearly \$242,000 more than what was authorized for subcontracted work - Because the airport was not actively involved in how Hensel Phelps hired itself as a subcontractor, the airport paid Hensel Phelps \$241,565 more than the guaranteed maximum price authorized by a task order for phase one of the current Great Hall project. There also was no written approval for the excess work that Hensel Phelps self-performed nor was that work competitively bid out to ensure a fair procurement.”

DEN response: This is incorrect, DEN was actively involved with all subcontracting, including self-performed work by the Contractor. The Auditor was provided with a subcontract change order log indicating all of the additional costs proposed by the CMGC for their Phase 1 self-performed work, as well as DEN's review documents of those proposals. Each proposal was reviewed by DEN to ensure the costs were fair and reasonable and the CMGC was not overpaid. The majority of these requests were under \$10k, so competitively bidding such small miscellaneous scopes of work is unreasonable given the fast-track nature of this project and effort to bid such small scopes.

In regard to the statement made regarding “using unrelated allowances” to fund some of these small costs, the Auditor disagrees with DEN's use of available allowances. DEN's management of Allowances is consistent with the Contract language and general project accounting principles. The

Contract stipulates that “Whenever costs are more than or less than the allowances, overruns and underruns in allowances will first come from owner’s contingency and if insufficient owner’s contingency remains, the Task Order shall be adjusted accordingly by change order.” In these cases, DEN may reallocate allowances with underruns/overruns appropriately to other areas of work to avoid the need for a Task Order Change Order and to stay within the Project’s overall budget. This is a common risk-mitigation and budgeting technique in construction. Therefore, the Auditor’s statement of misuse of allowances is unfounded.

*Auditor finding (pg. 32): “**Subcontracted work Hensel Phelps awarded to itself was not procured in a fair and reasonable manner** – Managers of the Special Projects Division who are responsible for overseeing the Great Hall project did not ensure Hensel Phelps followed a fair and reasonable bidding process when awarding itself a subcontract for self-performed work.”*

DEN response: As stated previously, the CMGC has held 548 outreach events and ensured fair and open competition for each bid package, including self-performed work. The CMGC employed a wide-ranging solicitation program to promote not only fair and open competition, but one that maximized M/WBE participation for the entire project.

*Auditor finding (pg. 32): “**Hensel Phelps structured the bidding for concrete work to its advantage, potentially reducing submissions by other prospective subcontractors** – Leading practices in construction say project owners must be aware that contractors can use their inside knowledge to obtain self-performed work. For example, a contractor might do this by combining two types of subcontracted work into a single bid, knowing no subcontractor can perform both. One bid package for phase two of the Great Hall project solicited subcontractors for concrete work that included both specialized work with vertical concrete columns and routine work with horizontal concrete. Airport officials said Hensel Phelps intended to perform the vertical concrete work from the beginning because the company had a lot of experience with this skilled labor. Vertical concrete work is complex and high risk, while horizontal concrete work is what any concrete construction company is more accustomed to performing. Therefore, grouping together the horizontal and vertical portions of the work in a single bid package limited the competition, fairness, and transparency required by the contract.”*

DEN response: Thirty different subcontractors were solicited to bid on Phase 2’s concrete work. As discussed above, the CMGC received two bids, and both of those bids were only for the horizontal concrete portion of work. As stated in previous

comments, there were two elements of work that made-up the entire scope of “building concrete”: vertical concrete and horizontal concrete. The CMGC bid the vertical concrete the day for \$1,115,407. The CMGC then added the lowest responsive bidder’s horizontal concrete proposed amount of \$635,851, resulting in a total “building concrete” amount of \$1,751,258. The CMGC did not markup the horizontal concrete bidder’s proposal, and combined both elements of building concrete into their subcontract recommendation to DEN. The CMGC also could have recommended to DEN that a subcontract be issued to them for vertical concrete in the amount of \$1,115,407 and a separate subcontract be issued to the horizontal concrete subcontractor for \$635,851, but they did not. As they did not include any markup on the horizontal work, the result would have been exactly the same regardless of which contract approach the Contractor used. DEN Special Projects has seen no evidence that the CMGC structured the bidding for their self-performed work packages to its advantage and the amount of self-performed work is limited.

Auditor finding (pg. 33): “Airport managers allowed Hensel Phelps to self-award some work, which the company then subcontracted out to another subcontractor - Hensel Phelps was self-awarded the concrete work for phase two for \$1,751,258. Hensel Phelps’ bidding documents make clear the company intended to perform only the vertical portion of the work, although it was awarded both the horizontal and vertical concrete work. We learned from the contractor that Coloscapes Concrete was hired as a second-tier subcontractor, working to perform the horizontal concrete work that was originally awarded to Hensel Phelps. This goes against leading practices, which say a contractor should not bid on self-performing work and then subcontract that work out, because the contractor could increase costs this way.⁶⁰ Hensel Phelps staff told us they charged no markups as the supervising subcontractor — but neither Hensel Phelps nor the airport provided documentation to confirm that. Therefore, we cannot determine whether the airport was overcharged. The risk exists that this could happen on subsequent projects if airport officials do not provide more adequate oversight of subcontractor awards.”

DEN response: Restated again from a previous comment: In the case of building concrete, there were two elements of work that made-up the entire scope of “building concrete”; vertical concrete and horizontal concrete. The CMGC bid the vertical concrete the day before bids were due from other subcontractors. The CMGC’s vertical concrete bid was \$1,115,407 as indicated in the report. After analyzing the other bids, the CMGC added the lowest responsive bidder’s horizontal concrete proposed amount of \$635,851. This resulted in a total “building concrete” amount

of \$1,751,258. The CMGC did not markup the horizontal concrete bidder's proposal, and combined both elements of building concrete into their subcontract recommendation to DEN. Had the CMGC recommended to DEN that a subcontract be issued to them for vertical concrete in the amount of \$1,115,407 and a separate subcontract be issued to the horizontal concrete subcontractor for \$635,851, the result would have been exactly the same.

Auditor finding (pg. 34): "No evidence exists that Hensel Phelps' bid for subcontracted work was submitted before other bids for phase two - To ensure a fair and competitive bidding process, as required by the contract, Hensel Phelps' bids for subcontracted work should have been submitted before any other potential subcontractors' bids. Doing so would eliminate the opportunity for Hensel Phelps to adjust its bid after seeing the bids of potential competitors. However, we found that Hensel Phelps submitted its bid for door and hardware installation on the same day another prospective subcontractor — Metro Doors LLC — submitted its bid. Because both bids were submitted on the same day, Hensel Phelps' self-performed work for the door and hardware installation may not have been procured in a fair and reasonable manner that ensured open competition to the greatest extent possible."

DEN response: The Auditor references SC-5 in their statement "as required by contract". However, SC-5 does not state that the GC needs to provide their self-perform bid before a subcontractor's. In any case, the CMGC did provide their self-performed concrete bid the day before any other bids were due. In the case of the \$18,614 DFH bid, the CMGC provided it at the same time as the other bidder. This was irrelevant because the other bidder was deemed nonresponsive as they excluded certain work requirements from their bid.

Auditor finding (pg. 34): "The airport did not provide a written review of pricing for some self-performed work before Hensel Phelps awarded itself a subcontract - Lastly, airport managers failed to provide a written review of pricing for Hensel Phelps' door and hardware installation bid for phase two of the project, as they had done for the concrete work. When we asked airport officials about this, they said they did not perform the same level of review because the bid was for only \$18,614 in work — a significantly lower amount than for the \$1.7 million concrete bid."

DEN response: This is correct. The amount of the DFH proposal for Phase 2 was \$18,614 and given the minimal scope, it was reviewed in our weekly cost review meeting. After review and discussion, it was found to be fair and reasonable and approved. We acknowledge there could have been better documentation of the process in this instance, therefore, written documentation of

the reviews will be provided in the future.

RECOMMENDATION 1.8

AGENCY RESPONSE:
DISAGREE

SEE PAGE 63 FOR THE
AUDITOR'S ADDENDUM.

Contract Article IV.B.iv stipulates that “Whenever costs are more than or less than the allowances, overruns and underruns in allowances will first come from owner’s contingency and if insufficient owner’s contingency remains, the Task Order shall be adjusted accordingly by change order.” Therefore, per the contract, reallocation of allowances with overruns or underruns to other areas of work is allowed. DEN Special Projects is properly managing allowances, the Auditor’s recommendation is not practical and is contradictory to the Contract. Using allowances in this way allows the project to address unanticipated costs, items that were not fully known or designed, or a scope that was not fully known when the Contractor’s proposal was done. Moving funds to other allowances or to contingency allows an owner like DEN to manage overall project costs and risks within one overall budget.

DEN is diligent in actively managing allowances throughout all phases, including their initial development, tracking (and updating balances) at weekly cost meetings, and at the final reconciliation. DEN reviewed each request for allowance usage from the contractor, which included the appropriate supporting documentation, and ensured they were fair and reasonable.

Validate and reconcile project allowances:

Denver International Airport’s Special Projects Division should:

- Ensure division staff understand how construction allowances are defined by industry standards and that they understand how allowances should be tracked, reconciled, and used. **Disagree with finding - DEN Special Projects staff involved in managing Allowances understand what the Contract requires and how Allowances are to be managed.**
- Require contractors to track and reconcile actual costs incurred and compare them against the estimated allowance amount to ensure they do not overcharge the airport. **Disagree with this finding – the contract does not require the CMGC or DEN to expend allowance funds only on a time and material basis. Allowances can be expended through any method of pricing permitted by the contract, including time and material, lump sum, or any other basis as DEN deems appropriate.**
- Require contractors to submit supporting documentation, such as vendor invoices and time sheets, to allow the airport to verify actual costs incurred — that is, that the actual costs are accurate and allowable under the contract terms. **Disagree with this finding - the contract does not require the**

CMGC or DEN to expend allowance funds only on a time and material basis. Allowances can be expended through any method of pricing permitted by the contract, including time and material, lump sum, or any other basis as DEN deems appropriate.

In addition, regarding the specific findings included with Recommendation 1.8, DEN has the following responses:

Auditor finding (pg. 36): "...If the flooring cost more than the allowance, Hensel Phelps would adjust the construction contract and the airport would pay the difference. If the actual costs were less, Hensel Phelps would again adjust the contract..."

DEN response: This statement is in conflict with the Contract. Article IV.B.iv reads, "Whenever costs are more than or less than allowances, overruns and underruns in allowances will first come from owner's contingency and if insufficient owner's contingency remains, the Task Order shall be adjusted accordingly by change order." In a case such as the flooring example the Auditor uses, DEN may reallocate funds from allowances with underruns to cover the costs and avoid the need for a change order to amend to the task order's GMP.

Auditor finding (pg. 37): "However, we found airport staff...did not properly verify and use allowances for either phase one or phase two of the current Great Hall Project. Specifically:

- 1. Once the airport and Hensel Phelps established an allowance for a specific portion of the project- such as drywall, for example - airport staff did not later require Hensel Phelps to submit documentation that could be used to validate and reconcile the actual costs against the allowance to see what adjustment were needed. Rather, the airport over relied on Hensel Phelps by allowing the company to adjust allowance amounts without any verification.*
- 2. On numerous occasions, the airport moved allowance amounts that were established for one particular scope of work and transferred them to other areas of the project where an allowance was either not set up at all or where an allowance was set up but was too low to cover actual costs."*

DEN response: (1) The statement that "airport staff did not later require Hensel Phelps to submit documentation that could be used to validate and reconcile the actual costs against the allowance" is incorrect. Each request for allowance usage was submitted by the CMGC with a detailed proposal (PCO) which was then reviewed by DEN to determine if it was fair and reasonable. Approved PCO's were then logged and tracked in their appropriate Allowance Log. DEN provided the summary

Allowance Logs for P1 and P2 to the auditors on multiple occasions. These thoroughly document every individual PCO cost expending Allowance funds. These PCOs are the actual cost “documentation that was used to validate and reconcile actual cost against the allowance”. DEN was diligent throughout the project in actively managing Allowances through the following stages: their initial development for GMP, at weekly cost meetings where cost requests were assigned to appropriate funding sources such as Allowances, reallocation of allowances (as necessary), and final reconciliation of allowances.

The contract does not require the CMGC or DEN to expend allowance funds only on a time and material basis. The Auditor’s report is defining “Actual Costs” to be the actual time and material expended to complete the work. Allowances can be expended through any method of pricing permitted by the contract, including time and material, lump sum, or any other basis as DEN deems appropriate for the PCO. The “Actual Cost” is the cost paid by the CMGC based on the billing method determined by DEN. If a method other than time and material is chosen, DEN would not review the time and material costs for the work as that is not the basis for payment to the Contractor. The Allowance usage here was submitted and approved on a lump sum basis. Therefore, the actual costs incurred by the CMGC or its subcontractors are not reviewed on a time and material basis - DEN pays a lump sum for each unit or type of work specified in the approval regardless of the time and material cost paid by the CMGC.

DEN response: (2) Allowance funding sources were reconciled periodically throughout the project. IBT stands for “Internal Budget Transfers.” IBTs are designed to keep track of any movement between Allowance items. As the project progressed, DEN was able to reconcile Allowances and then to remove Allowances that were no longer necessary, were drawn down, or completely closed to simplify the overall Allowance and GMP reconciliations.

Auditor finding (pg. 37): “Airport staff misunderstand how project allowances are defined, should be tracked, and accounted for.”

DEN response: DEN staff are fully aware of the definition of Allowances and have shared the proper Contract reference with the Auditor to refer to. Defining Allowance usage by external reference to AIA documents or auditing manuals in lieu of the actual Contract is inappropriate. Note that the Contingency and Allowance Log that is being utilized for P1 and P2 is a very detailed spreadsheet that tracks individual cost entries as well as summarized all the individual accounts in separate tabs (Allowance, Construction Contingency, Owner Contingency, etc.).

Auditor finding (pg. 37): “When the airport and Hensel Phelps agree on an allowance estimate for a particular portion of work, the airport pays Hensel Phelps the entire allowance regardless of what the actual cost was.”

DEN response: This statement is incorrect. As described to the auditors and demonstrated by the individual Allowance logs submitted to them, each and every incremental allowance usage was charged with individual Potential Change Orders (PCOs) that represented actual costs. All PCO cost transactions were properly recorded in the appropriate log for each Allowance. In no case was an Allowance wholly paid as a lump sum or without proper cost documentation. All PCOs were reviewed by DEN to confirm pricing was fair and reasonable.

Auditor finding (pg. 37): “In addition to airport staff misunderstanding how allowances should work, there could be a failure with how the airport develops its initial allowance estimates. By moving allowance amounts...it indicates that the airport...may have overestimated an allowance in one area and under estimated it in another.”

DEN response: DEN has previously explained to the auditors how the original allowances are established; through a collaborative effort between the CMGC and DEN. Any member from the integrated team (DEN, Architect, or CMGC) may provide input regarding what scope items may be included as an allowance. Allowance amounts are typically established through a rough order of magnitude (ROM) budget amount using institutional knowledge of the airport and historical cost databases. The CMGC establishes an initial amount, which is then presented for DEN’s review. Ultimately, the DEN SVP approves all allowance amounts included in the GMP through execution of the task order.

Allowances are for “known unknowns” meaning that the items of work is known but the exact scope or cost is unknown. This is in comparison to contingency, which is designed to provide budget for “unknown unknowns” or unanticipated things that arise during construction. Given that most allowances are developed with very little or no detailed information with which to develop a more specific or accurate estimate, allowances will typically either be above, or below the initial value. Thus, it is unreasonable to say that this is a “failure with how the airport develops its initial allowance estimates” if those allowances are over or under those initial amounts. That is why they are allowances and not more specific estimates or actual costs for a scope of work or item.

Auditor finding (pg. 37): “Because of this, the airport exposes itself to overpaying...by: Not requiring Hensel Phelps to submit documentation that the airport could then use to validate

actual costs against the amount set aside.”

DEN response: This statement is incorrect. See above for responses for explanations regarding the submission of PCOs for each request, proper charging of same to individual Allowance accounts, and DEN’s review of each request to determine that it’s fair and reasonable.

RECOMMENDATION 1.9

**AGENCY RESPONSE:
DISAGREE**

**SEE PAGE 63 FOR THE
AUDITOR’S ADDENDUM.**

Allowances are a tool to mitigate risk and manage the budget for large complex infrastructure projects. Per the Contract, DEN Special Projects is properly managing Allowances. As stated in the response to Recommendation 1.8, DEN has appropriately used project allowances on the Great Hall Program. See the discussion above.

RECOMMENDATION 1.10

**AGENCY RESPONSE:
DISAGREE**

**SEE PAGE 63 FOR THE
AUDITOR’S ADDENDUM.**

Contract Article IV.G indicates that “The City and the Contractor agree that the wages and burden for the personnel shall be charged at stipulated fixed rates set forth which will be agreed to in the Task Order(s).”

During the procurement, proposers competed on price in addition to other factors. During the evaluation and selection phase of the project, DEN reviewed proposed billing rates from the three proposers and determined that the selected CMGC proposed the lowest rates for a majority of the DEN requested positions. DEN also reviewed the rates to determine if they were reasonable based on panel members’ knowledge of the Denver construction market and the costs of other contractors for the City. This was a factor in DEN determining that the CMGC’s staff billing rates were competitive, fair and reasonable.

The purpose of executing a task order or contract with set rates or percent general conditions costs is so that DEN does not have to take the significant amount of time required to validate those costs before contracting or to monitor those costs after contracting. Once the contract is executed, the rates or % are simply a specified cost within the contract. This is easier to manage and places the risk on the contractor that they can manage the general conditions within the amount specified in the contract. Further, having contractors propose on these costs allows for competition between them on rates, or in the event that DEN is limited by legal requirements, DEN can set a percent or rate and the proposers must accept the required rate.

AUDITOR'S ADDENDUMS

Auditor's Addendum to Agency Response for Recommendation 1.1

Although the airport agreed to implement this recommendation, aspects of the airport's response merit further clarification based on our audit findings.

- The airport's response says the Great Hall project's "overall health is excellent." However, as we discuss throughout the report, our audit identified several key areas where the airport is exposing itself to the risk of overpaying its contractor, Hensel Phelps Construction Co., for constructing the Great Hall project.
- Airport officials noted that phase one of the project was "more than \$25 million under budget." As we said on page 7, we found phase one came in \$8.8 million under the guaranteed maximum price.
- Airport officials said in their response that they conducted an analysis to determine the best project delivery method for the Great Hall project through "several meetings" but that this effort "was not documented."

As we discussed on pages 10-12 of the report: Because key individuals involved in selecting the current project delivery method are no longer with the airport and because those individuals did not document their decision-making process, we cannot validate whether the airport's selection process was truly optimal and followed leading practices. Thoroughly documenting the project delivery selection process would have provided better transparency of management decisions and verified that managers used key factors in their decision-making process.

- Airport officials said in their response that one of the leading practices we referenced is not "especially relevant." Yet, this leading practice emphasizes the importance of a structured approach to selecting the best project delivery method, including key considerations for the selection process. A structured assessment of the strengths and weaknesses for a project can maximize construction efficiency and minimize project risks. Therefore, this leading practice is indeed relevant.

The Colorado Department of Transportation's "Construction Manager/General Contractor Manual" was created by the state Innovative Contracting Advisory Committee. This committee comprises members from the American Council of Engineering Companies, the Colorado Contractors Association, the Colorado Department of Transportation, and the Federal Highway Administration, as well as a professor from the University of Colorado Boulder. The advisory committee's mission is to discuss delivery methods, contracting challenges, and innovative contracting methods for use on state transportation projects that use innovative deliveries, such as the construction manager/general contractor delivery method.

Given the composition and mission of the state's advisory committee as well as the purpose of the "Construction Manager/General Contractor Manual," this resource is absolutely relevant to Denver International Airport's construction practices.

Specifically, the state's manual says its purpose is to help contractors, consultants, and state transportation personnel "better understand the steps required to deliver a [construction manager/general contractor] project from initial project scoping to construction completion."⁷³ It further says that

⁷³ Colorado Department of Transportation, "Construction Manager/General Contractor Manual" (January 2015), accessed April 17, 2023, <https://www.codot.gov/business/alternativedelivery/assets/cmgc-manual.pdf>, § 1.1.

“each [construction manager/general contractor] project has different challenges, details, risks, and goals, but the overall steps are the same for each project.”

- Lastly, we realize that the Great Hall contract was executed in 2020, two years before our audit of the Peña Boulevard improvements construction contract, and that the airport selected a different delivery method after it terminated Great Hall Partners LLC. This information was included in the report to show that the airport had already identified the lack of a formalized project delivery selection process as an ongoing issue with past construction projects.

We are pleased the airport has begun to take action to address this concern, and we will review the new process guide during our follow-up activities.

Auditor’s Addendum to Agency Response for Recommendation 1.2

The airport says in its response that managers and staff “followed the requirements in the Charter, Denver Revised Municipal Code, and Executive Order 8 and as much of [the airport’s] procurement process as was practicable under the circumstances.”

We did not assert that the airport did not follow city requirements for the procurement process. As we discussed on pages 13-14 of the report, airport managers told us the airport did not develop or keep any supporting documentation for the steps they followed in their procurement procedures. For example, the airport’s response says, “The panel convened to discuss the proposals, interviews, and proposed costs.” However, the airport did not keep any record of such a decision-making process, such as through meeting minutes or score sheets.

The airport’s own procurement procedures say, “The evaluation panel will review the proposals and score the proposals based on the criteria set forth during the panel member training on the scoresheet template. All scores are collected and combined into a master scoresheet to determine the best proposer.” Further, the procurement procedures say, “The master score sheet is retained in our records and should follow the city’s electronic records retention policy.”

While we recognize this project had some unique circumstances, there is no excuse to not document the decision-making process. While airport officials say they followed as much of their procurement process as they deemed “practicable,” without verifiable documentation, we could not determine whether these steps occurred. As we said in the report: This diminishes transparency and hinders the airport’s ability to show its selection process was fair, reasonable, and competitive.

Airport officials also said in their response that they “are not aware of a directive from Airport Management at that time directing staff to minimize records due to the number of open records requests.” However, this statement was made to us during an interview with the airport’s senior vice president of special projects on Oct. 18, 2022, after we had asked, yet again, why documentation does not exist for several procurement steps.

Auditor’s Addendum to Agency Response for Recommendation 1.5

Because airport officials’ response to Recommendation 1.5 references each individual section of the finding, we provide a similar format in offering further clarification to correct the airport’s assertions.

DELAYS IN PROVIDING SUBCONTRACTS – In the airport’s response, officials dispute that they did not actively possess and have knowledge of all subcontracts.

However, as we discussed on page 21 of the report, we requested documentation through email multiple times – documentation that should have been readily available. It took an inordinate amount of time for the airport

to provide this, despite constant follow-up requests. As part of these repeated requests, we indicated our concern for the delay and told the airport that we believed this indicated managers and staff do not possess the subcontracts. As we said in this report, it took 33 days for the airport to provide the subcontracts. If these subcontracts were truly readily available and airport managers were consistent with their review of them, as officials claim in their response, it should not have taken over a month to provide them.

The airport had hired a third-party consultant to review areas of the Great Hall project that we looked at as part of this audit. On Feb. 16, 2023, airport officials met with the audit team to have this consultant discuss its findings. One of the items the airport's own consultant discussed was that the ability of a project owner — like the airport, in the case of the Great Hall project — to produce documentation sheds light on how controlled a project is. Specifically, the consultant said how quickly documents come to auditors speaks to how controlled a project is. We agree wholeheartedly with the airport's consultant on this matter. The airport's inability to provide documentation and fulfill audit requests in a timely manner indicates managers and staff did not have the subcontracts in hand and had to retrieve them from their contractor, Hensel Phelps.

Furthermore, throughout our audit fieldwork, we had to request missing contracts the airport had not provided. We discovered and requested the final missing subcontract on Dec. 19, 2022.

LACK OF KNOWLEDGE OF ALL SUBCONTRACTS – As we also discussed on [page 21](#), when we asked airport leaders whether Hensel Phelps entered into a subcontract agreement for its self-performed work, airport managers said no. Specifically, the senior vice president said in an email on Aug. 29, 2022: “There is not a separate lump-sum subcontract that Hensel Phelps entered into with the airport that covers the self-performed work.” Furthermore, the director of construction at the airport said in an interview that same day that, “It is a subcontract that is under the [guaranteed maximum price]. It is part of the task order with Hensel Phelps; there is no separate contract.”

The airport's delay in providing subcontracts and its officials not knowing that their general contractor had, in fact, entered into a subcontract agreement for self-performed work indicates an obvious lack of oversight for the subcontracting process. This lack of oversight runs the risk of the city overpaying for subcontracted work — the largest portion of a project's costs — or could result in the city receiving lesser-quality work.

NO WRITTEN APPROVAL FOR SOME SUBCONTRACTS – In their response, airport leaders said they approved all subcontractors via email or in weekly project-cost review meeting minutes. However, the airport gave us a project-cost review meeting agenda with no detailed summary of what was discussed. Additionally, there were no signatures to indicate managers had approved it.

Meeting agendas with inconsistent and minimal handwritten notes and that lack any signoff do not constitute written approval as required by the contract. Furthermore, there is no evidence to show when the handwritten notes on the meeting agendas were made and by whom.

Airport officials must document an adequate review of all subcontracted work to ensure they are receiving quality work and not overpaying for the work being performed.

LACK OF COMPETITIVE BIDDING – In their response, airport officials said “the contract does not require” them to receive three bids for each trade of construction work.

The audit report does not say this is a contractual requirement. As we discussed on [page 22](#) of the report, best practices published by The Institute of Internal Auditors recommend receiving a minimum of three bids.

Additionally, we do not say the airport did not make proper efforts for solicitation, as airport officials suggest in their response. In fact, our analysis determined otherwise. The issue is that the airport failed to provide documentation to justify why it did not receive three bids or why no attempts were made to re-bid, in line with best practices.

Furthermore, airport officials said in their response that staff reviewed and approved the scopes of work that we had found were not competitively bid. Nonetheless, the airport needs to adhere to its own contract and provide express written approvals for any and all exceptions. The execution of a task order does not satisfy this requirement.

Lastly, we found no evidence that Hensel Phelps received prior written approval from the senior vice president before awarding five of the six trades that bypassed the competitive bidding process, as required by the contract in the “Special Conditions” section. The signing of a task order is not equivalent to a detailed, documented review and approval.

SOME SUBCONTRACTS MAY HAVE NOT BEEN AWARDED TO THE LOWEST, MOST QUALIFIED BIDDER – Airport officials said in their response that they “acknowledge the documentation process needs to be strengthened [for the selection process], therefore, we will now provide documentation justifying the reasons for not simply awarding to the lowest bidder.”

This indicates airport officials do in fact agree with this audit finding. In the end, we could not conclude, in some cases, if subcontracts were awarded to the lowest, most qualified bidder because of the airport’s lack of documentation – specifically, the documentation needed to justify why some subcontractors were chosen over lower bidders. This is an important step of the review process to ensure proper oversight of a contractor and to promote a competitive, open, and fair bidding process.

SOME SUBCONTRACTS EXCEEDED BID PROPOSAL AMOUNTS – Airport officials said in their response that in a construction manager/ general contractor delivery method, it is acceptable to exceed the bid price for any anticipated scopes that were originally “missed” or “unclear.” However, according to the airport’s own contract, all work needs to be competitively bid out or alternatively approved in writing by the senior vice president.

We found these additional scopes were not competitively bid out nor approved in writing. Additionally, the contract says the work to be performed under the contract needs to be detailed in task orders.

SUBCONTRACTS NOT SIGNED IN ADVANCE OF WORK PERFORMED – Airport officials said in their response that, “Several subcontracts would have not been executed immediately following the issuance of the task order because the design would not have been completed, making subcontractor buyout impossible.”

We took those subcontractors noted in the airport’s response into account and we excluded them from our analysis, despite the airport suggesting otherwise.

Regardless, we still found 14 subcontracts across phases one and two that were signed after the task order was signed and initiated. This means that either 1) work did not begin within 10 days of the task order notice, as required by the contract or 2) work did begin without a signed contract in place, risking unnecessary liability for the airport.

Auditor’s Addendum to Agency Response for Recommendation 1.6

Airport staff’s justification for exceeding the 15% markup limit is that this is a complex project and that Denver’s “General Contract Conditions” allow for this situation.

However, neither the size nor the complexity of a construction project justifies noncompliance with a contract. We received no evidence that the airport followed the “General Contract Conditions” by providing justification and approvals for exceeding the 15% limit.

After sampling seven subcontractors, we concluded the total amount the airport could have been overcharged for all incorrect markups could be significant. Furthermore, a project owner’s inadequate oversight of the subcontracting process increases the potential for fraud.

Auditor's Addendum to Agency Response for Recommendation 1.7

In clarifying the claims made in the airport's response to Recommendation 1.7, our addendum for Recommendation 1.5 regarding the following topics remains relevant:

- Lack of competitive bidding.
- Lack of knowledge of all subcontracts.
- No written approval for some subcontracts.

Additionally, we must clarify several other assertions the airport made in response to our audit findings and Recommendation 1.7 specifically:

- Airport officials say in their response that staff were actively involved with all subcontracting, including self-performed work by Hensel Phelps. They further said these charges were approved through the execution of the task order.

However, the execution of a task order does not satisfy the terms of the contract. As the project owner, the airport has a responsibility to provide the same level of review to all subcontracted work regardless of cost to ensure accuracy and proper oversight of the general contractor. These \$10,000 "small projects" Hensel Phelps was awarded add up to more than \$240,000 worth of work. Furthermore, the work that Hensel Phelps did was not competitively bid nor approved in writing, as required by the contract.

Airport officials assert that competitively bidding small, miscellaneous scopes of work is "unreasonable given the fast-track nature of this project."

In fact, contracts should be adhered to regardless of the size and cost of a project. If airport staff wanted to bypass the competitive bidding process for these smaller jobs, the contract allows for this — if there is prior written approval by the senior vice president. The airport did not provide written documentation that this occurred, despite our multiple follow-up requests.

Various times throughout our audit, airport staff said they were seeking to fast-track this project. This devotion to rush the project has caused clear lapses in oversight.

- In response to our conclusion that subcontracted work Hensel Phelps awarded to itself was not procured in a fair and reasonable manner: Officials emphasized that Hensel Phelps has held over 500 outreach events that maximized efforts to solicit businesses owned by people of color and women.

As we noted previously in our addendums, we agree the solicitation efforts airport staff made have been sufficient. However, that is irrelevant to this subfinding. The issue is that airport officials bypassed the competitive bidding process and awarded work to Hensel Phelps without prior written approval as required by the contract. We discuss this issue of the lack of competitive bidding in our addendum to the airport's response to Recommendation 1.5.

- In response to our conclusion that Hensel Phelps structured the bidding for concrete work to its advantage: Airport officials said that because Hensel Phelps "did not include any markup on the horizontal [concrete] work, the result [of the bidding process] would have been exactly the same regardless of which contract approach the Contractor used."

We disagree with this claim. Vertical concrete work is a complex, high-risk job. If Hensel Phelps was intending to perform this work from the beginning, then grouping together the horizontal and vertical portions of the work indicates a bidding process that was not entirely competitive, fair, or open.

Smaller concrete construction firms that are qualified to complete horizontal work but not vertical work could have been discouraged to bid for the subcontract, even though they were qualified to complete the horizontal portion. Likewise, construction companies that did bid were deemed unresponsive for not including all portions of the scope in their bids, even though Hensel Phelps itself excluded the horizontal

portion of the work from its bid.

Therefore, Coloscapes Concrete’s partnership with Hensel Phelps to complete the concrete work together was likely due to these two bids being grouped together. Results, bid proposals, and prices could have varied if the work had not been combined. In addition, the work was neither re-bid nor negotiated to ensure the airport received the best price for the work being completed.

Furthermore, airport officials accepted Hensel Phelps’ bid at \$143,000 over the estimated cost. This work, too, was neither re-bid nor negotiated to ensure the airport received the best price.

Lastly, we could not actually verify that markups were not applied as airport officials assert in their response. Airport managers and staff failed to provide proper documentation to review markups, despite our multiple requests.

- Regarding our conclusion that airport managers allowed Hensel Phelps to self-award some work that it then subcontracted out to another subcontractor: Airport officials said in their response that had Hensel Phelps recommended to the airport that a subcontract be issued to them for vertical concrete and a separate subcontract be issued to the horizontal concrete subcontractor, “the result would have been exactly the same.”

Regardless of this belief, their response does not address the issue at hand. As we explained on [page 33](#) of the report, best practices say a contractor should not bid on self-performed work and then subcontract that work out, because the contractor could easily increase costs this way.

There is simply no way to know whether the results would have been the same, because airport officials did not provide the documentation needed to ensure Hensel Phelps applied no extra markups or fees. Additionally, the risk remains that the airport could overpay on future contracts if a contractor subcontracts out their awarded work and applies markup fees.

- The airport asserts that our conclusion about Hensel Phelps’ submitting its bid for subcontracted work before others is “irrelevant because the other bidder was [ultimately] deemed nonresponsive.”

A competitor’s bid being nonresponsive does not change or diminish the risk of this issue. It also remains a risk on future projects.

Best practices from the Construction Audit and Cost Control Institute Inc. say a project owner should be aware of potential bid manipulation, where a contractor obtains bids from interested subcontractors and then manipulates the bidding documents to award themselves the subcontract even though they were not the apparent low bidder.⁷⁴

Because of Hensel Phelps submitting its bid the same day as its competitor, there is no way for the airport to ensure Hensel Phelps did not manipulate its bid or use inside knowledge for its own advantage.

- Lastly, airport officials agreed with our conclusion that they did not provide a written review for the doors-and-hardware work awarded to Hensel Phelps.

The airport should adhere to its contract — as well as industry standards — and provide a written review of pricing for all self-performed work. We further discuss this issue of the lack of written approval for some subcontracts in our addendum to the airport’s response to [Recommendation 1.5](#).

⁷⁴ Construction Audit and Cost Control Institute Inc., “Self-Performed Work by Construction Managers,” 1-4.

Auditor’s Addendum to Agency Response for Recommendation 1.8

Airport officials’ claim that they are spending allowances in accordance with the terms of the contract is incorrect.

The provision of the contract they cite — Article IV, Section B(iv) — uses the term “actual costs.” Specifically, it reads:

“Whenever costs are more than or less than the allowances, overruns and underruns in allowances will first come from owner’s contingency and if insufficient owner’s contingency remains, the task order shall be adjusted accordingly by change order. The amounts of the change orders shall reflect the difference between actual costs and the allowances.”

This contract language explicitly comes from language recommended by the American Institute of Architects. The institute is a professional organization that offers standardized templates including contract language that can be adopted for use by members of the construction industry.

The airport specifically adopted language from one of the institute’s guidance documents — namely, Section 3.8 of document A201-2017 — and airport officials used this precise wording in their Great Hall construction contract with Hensel Phelps. Article IV sections B(i) through B(iv) of the airport’s contract with Hensel Phelps are pulled directly from the American Institute of Architects’ guidance.

In particular, Section 3.8 of the American Institute of Architects’ contract template expounds on the term “actual costs,” which appears in the contract between the airport and Hensel Phelps. Section 3.8.2.3 of the institute’s contract template says: “The contractor’s actual cost incurred will be compared to the allowance amount. If there is a difference between actual cost incurred by the contractor and the allowance amount, an adjustment to the contract sum will be made.”

In other words, the allowance is a placeholder for amounts included in the contract sum until the contractor incurs actual costs. “Actual costs” means just that: the actual costs incurred by the contractor or its subcontractor to physically perform the construction work. Proposals, estimates, and approximations are not equivalent to actual costs, and treating those as actual costs to compare against an allowance amount violates the contract between the airport and Hensel Phelps.

By not requiring Hensel Phelps to submit documentation of its actual costs, such as time sheets and invoices, for comparison against the initial allowance estimate, the airport risks overpaying for work budgeted for through project allowances.

Auditor’s Addendum to Agency Response for Recommendation 1.9

In the airport’s response, officials say, “Allowances are a tool to mitigate risk.” However, as we define on [page 31](#) of the report, an allowance is an estimated sum that covers the cost of construction when the exact character, final cost, or level of quality cannot be specified at the time of bidding and therefore cannot be accurately bid.

Based on that definition, allowances are not risk mitigators. Rather, they are ways to allow construction to continue or for construction to be fast-tracked and not be delayed until uncertainties are determined. This is because allowances enable contractors to bid work when the design is incomplete but the project must begin nonetheless.

Airport officials’ claim that they are “properly managing” allowances is incorrect. Both Article IV Section B(iv) of the contract with Hensel Phelps as well as the task orders for phases one and two say that, “Whenever costs

are more than or less than the allowances, overruns and underruns in allowances will first come from owner's contingency and if insufficient owner's contingency remains, the task order shall be adjusted accordingly by change order."

The airport is violating both the contract terms and its task orders by shifting allowances from one scope of work to another. Doing so increases the risk that the airport is overpaying or could overpay for work budgeted for through project allowances.

Auditor's Addendum to Agency Response for Recommendation 1.10

Airport officials say in their response that when procuring the Great Hall contractor, the three proposers that bid on the project "competed on price in addition to other factors." However, the senior vice president of the airport's Special Projects Division told us cost played only a minimal role in selecting Hensel Phelps.

Hensel Phelps' proposal had a total bid \$9.1 million. The other two proposers bid \$8.9 million and \$5.9 million, respectively. The fact that Hensel Phelps was chosen when it had the highest cost of the three proposers supports the senior vice president's statement.

Furthermore, we reviewed all three submitted proposals, and there were zero details about the markup (i.e., the 145%) on labor rates to cover general conditions costs. As a result, the airport would have had no knowledge of what percentage Hensel Phelps was estimating it would apply to each hour of labor to cover general conditions costs. The airport's assertion that it reviewed staff rates per labor hour is not the same as reviewing the markup on each labor hour that is then taken by Hensel Phelps and multiplied by 145% to cover general conditions costs.

While reviewing staff labor rates is important, the airport's review did not resolve the risk that the airport could be overpaying for general conditions.

Here's an example: Assume a Hensel Phelps project superintendent earns a pay rate of \$100 per hour. Hensel Phelps would bill the airport \$100 for each hour the superintendent works on the project plus an additional 145% of that \$100 rate for general conditions costs. The total billed would then be \$245. The airport's review of just the labor rate is, therefore, only half the equation and leaves the airport unable to know what is baked into the 145% markup.

Furthermore, Article IV Section G of the contract between Hensel Phelps and the airport says, "The contractor's general conditions will be negotiated on a task order basis." Sections G(i) through G(vi) go on to explicitly include the categories of costs that are allowable to be billed as general conditions.

These provisions of the contract are relevant to Recommendation 1.10 for two reasons.

- First, the word "negotiated" indicates the airport has the ability to obtain details on what the 145% markup for general conditions includes and Hensel Phelps should be willing to provide that for transparency. These details would allow the airport to review the reasonableness of the amounts baked into the 145% mark-up rate.
- Secondly, because the contract explicitly stipulates the categories of costs that can be billed under general conditions, the airport should review the breakdown that makes up the 145% to ensure Hensel Phelps is not including other categories of costs not allowed by the contract.

By not asking for and reviewing the breakdown of Hensel Phelps' 145% markup for general conditions, the airport could be overpaying for these costs.

OBJECTIVE

To determine whether Denver International Airport’s Special Projects Division is adequately managing and overseeing the current Great Hall construction project to ensure the airport procured its new contractor in a fair, open, and competitive manner and that the airport is not being overcharged for construction costs on the Great Hall project.

SCOPE

We reviewed the airport’s management and oversight of phases one and two of the current Great Hall project, from August 2019 through August 2022.

We focused on how the airport procured its construction contract with Hensel Phelps Construction Co., the factors the airport used in its decision to choose the construction manager/general contractor project delivery method, and construction costs and contract compliance.

METHODOLOGY

We used several methodologies to gather and analyze information related to the audit objectives. The methodologies included but were not limited to:

- Interviewing staff members from:
 - The airport’s Special Projects Division.
 - The City Attorney’s Office.
 - The airport’s Internal Audit Division.
 - The Department of Transportation & Infrastructure.
 - PCL Construction Services Inc.
- Surveying and analyzing other comparable U.S. airports with capital improvement projects, as discussed in the [appendix](#).
- Reviewing documentation for a sample of other construction projects performed by the airport and the Department of Transportation & Infrastructure.

- Reviewing and analyzing:
 - Bids from Hensel Phelps Construction Co., Turner-Flatiron Joint Venture, and PCL Construction Services Inc. to determine compliance with city ordinance and the Denver charter.
 - The airport's supporting documentation for its contract procurement process to determine compliance with internal policies and procedures.
 - Subcontractor bid packages from Hensel Phelps, including those relating to work it subcontracted to itself.
 - Subcontractors' logs and approvals.
 - Subcontracts for phases one and two of the current Great Hall project.
 - Subcontract solicitation lists and proposal summaries for phase two of the current Great Hall project.
 - The risk registers for phases one and two of the current Great Hall project.
 - Hensel Phelps' pay applications and supporting documentation submitted for phases one and two of the current Great Hall project to determine the contractor's compliance with contract requirements and leading practices related to markup costs, unallowable costs, general condition costs, owner-controlled insurance programs, and cost savings.
 - Contingency and allowance logs maintained by the airport and Hensel Phelps.
 - Change orders for phases one and two of the current Great Hall project.
 - The job cost detail report for phase one of the current project.

APPENDIX

Comparing procurement processes

To analyze the airport’s process for procuring Hensel Phelps Construction Co. as the new contractor for the Great Hall project, we looked for comparisons in two places:

- Other major U.S. airports that, like Denver International Airport, are among the top 25 busiest international airports in the country.
- Other construction projects in the City and County of Denver that used an alternate project delivery method.

OTHER AIRPORTS’ PROCUREMENT PROCESSES – We reached out to procurement specialists at the top 25 busiest international airports in the United States based on annual passenger traffic.⁷⁵ Each airport had recent, current, or future plans for multi-million-dollar and multi-billion-dollar construction projects since 2020. Additionally, we reached out to airport internal auditors through the Association of Airport Internal Auditors’ members-only digital forum.⁷⁶

Seven airports responded to our survey:

- Charlotte Douglas International Airport in North Carolina.
- Dallas/Fort Worth International Airport in Texas.
- Chicago O’Hare International Airport in Illinois.
- Phoenix Sky Harbor International Airport in Arizona.
- Seattle-Tacoma International Airport in Washington.
- San Francisco International Airport in California.
- Salt Lake City International Airport in Utah.

Figure 6 on the next page lays out the survey responses we received from these airports compared to Denver International Airport’s practices for the Great Hall project.

⁷⁵ “Passengers Boarded at the Top 50 U.S. Airports,” National Transportation Statistics, U.S. Bureau of Transportation Statistics, accessed Oct. 6, 2022, <https://www.bts.gov/content/passengers-boarded-top-50-us-airports>.

⁷⁶ “The Association of Airport Internal Auditors,” accessed Nov. 14, 2022, <https://airport-auditors.com>.

FIGURE 6. Survey responses from other top U.S. airports vs. the current Great Hall construction project

SURVEY QUESTIONS	INTERNATIONAL AIRPORT							
	Denver	Charlotte Douglas	Dallas/ Ft. Worth	Chicago O'Hare	Phoenix Sky Harbor	Seattle-Tacoma	San Francisco	Salt Lake City
Does your airport use qualifications-based selection for construction projects?	✓	✓	✓	✓	✓	✓	✓	✓
Do you ever deviate from policies and procedures in emergency situations?	✓	✗	✓	✗	✗	✓	✗	✓
Do you have separate policies and procedures in place for time-sensitive procurements?	✗	✓	✓	✓	✓	✓	✓	✓
Are the results of the selection process documented and retained (i.e., do you use and keep score sheets)?	✗	✓	✓	✓	✓	✓	✓	✓

Note: The table contains four of the six survey questions we asked the other airports. We added information on the Great Hall project for comparison.

Source: Auditor's Office analysis of survey responses received from airport procurement specialists at seven of the busiest international U.S. airports based on passenger traffic.

OTHER SIMILAR CITY PROJECTS – We also reviewed documentation from a judgmental sample of construction projects recently completed at Denver International Airport and by the Department of Transportation & Infrastructure – the only other agency authorized to perform construction within the City and County of Denver.

Our sample was focused on projects that used an “alternative delivery” method – meaning projects procured like the Great Hall’s construction manager/general contractor delivery method that based contractor selection on qualifications, not cost alone.

Figure 7 on the next page illustrates the results of our comparative analysis related to whether city staff kept three key pieces of documentation related to the procurement process:

- The score sheets used to evaluate prospective contractors’ bids.
- The recommendation memo that detailed the selection process and the results of scoring.
- Any other documentation that would justify the choice of a contractor.

FIGURE 7. Other City and County of Denver projects’ documentation practices

PROJECT	DOCUMENTATION REQUESTED		
	Score sheets showing evaluation of prospective contractors’ bids and any evaluation or scoring of contractor interviews	Selection recommendation memo detailing selection process and results of scoring outcome	Any other documentation that justifies or supports the rationale for contractor selection
DEPARTMENT OF TRANSPORTATION & INFRASTRUCTURE			
Denver Public Library	✓	✓	✓
Wastewater Building	✓	✓	✓
Swansea Recreation Center	✓	✓	✓
DENVER INTERNATIONAL AIRPORT			
Bus Canopy Repair	✓	✓	✗
Peña Boulevard Improvements	✓	✓	✗
CCA Bridge Security Podium Improvements	✓	✓	✗
Aircraft De-icing System Modernization	✓	✓	✗

Source: Auditor’s Office analysis of documents provided by the Department of Transportation & Infrastructure and the airport.

Office of the Auditor

The **Auditor** of the City and County of Denver is independently elected by the residents of Denver. He is responsible for examining and evaluating the operations of city agencies and contractors for the purpose of ensuring the proper and efficient use of city resources. He also provides other audit services and information to City Council, the mayor, and the public to improve all aspects of Denver's government.

The **Audit Committee** is chaired by the Auditor and consists of seven members. The Audit Committee assists the Auditor in his oversight responsibilities regarding the integrity of the city's finances and operations, including the reliability of the city's financial statements. The Audit Committee is structured in a manner that ensures the independent oversight of city operations, thereby enhancing residents' confidence and avoiding any appearance of a conflict of interest.



201 West Colfax Avenue, #705

Denver, CO 80202

(720) 913-5000

www.DenverAuditor.org

Our Mission

We deliver independent, transparent, and professional oversight in order to safeguard and improve the public's investment in the City and County of Denver. Our work is performed on behalf of everyone who cares about the city, including its residents, workers, and decision-makers.
