



Testimony

Before the Subcommittee on Legislative,
Committee on Appropriations, House of
Representatives

For Release on Delivery
Expected at 1:30 p.m. EDT
Tuesday, July 15, 2003

CAPITOL VISITOR CENTER

Current Status of Schedule and Estimated Cost

Statement of David M. Walker,
Comptroller General of the United States



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Highlights

Highlights of [GAO-03-1014T](#), a testimony before the Subcommittee on Legislative, Committee on Appropriations, House of Representatives.

Why GAO Did This Study

GAO has been providing ongoing assistance to the Capitol Preservation Commission and the Senate and House Appropriations Committees in their monitoring and oversight of the Capitol Visitor Center construction project. Given the current decisions facing the Congress, this testimony covers (1) management of the project, (2) the estimated cost for the project, (3) the status of the project's schedule, and (4) actions that Congress and the AOC should consider taking to address funding gaps and other current project issues and risks.

What GAO Recommends

We propose that the Architect of the Capitol and Congress consider taking actions to

- address the gap between the \$303.5 million current funding for the "base project" and the updated estimates;
- consider how best to address costs associated with risks and uncertainties not included in updated "base cost" estimates;
- continue to resolve scope, requirements, estimated costs, and funding sources for unresolved items;
- implement controls for the approval of changes and use of contingency funds;
- continue to resolve contingency tracking and reporting issues; and
- expeditiously develop a comprehensive, integrated master project schedule.

www.gao.gov/cgi-bin/getrpt?GAO-03-1014T.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Jeanette Franzel (202) 512-9471 or franzelj@gao.gov or Bernard L. Ungar at (202) 512-4232.

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What GAO Found

Recognizing the need for a new facility to provide greater security for all persons working in or visiting the United States Capitol and to enhance the educational experience of visitors who have come to learn about Congress and the Capitol building, Congress authorized the Architect of the Capitol (AOC) to build a new Capitol Visitor Center. The three-story, underground facility, located on the East side of the Capitol, is designed to be a seamless addition to the Capitol complex when completed without detracting from the appearance of the Capitol or its historic landscaping.

Earlier this spring, GAO and the AOC determined that the estimated budget amount of \$303.5 million for the Capitol Visitor Center (CVC) "base project" was no longer current. Based on GAO's recommendation, the AOC hired a contractor to help analyze and update the cost estimate for completion of the base project. GAO's review of the contractor's "base cost" estimate analysis identified \$7 million in adjustments, therefore increasing the contractor's \$344.3 million estimate to \$351.3 million. GAO also conducted a supplemental analysis to identify potential future costs due to additional risks and uncertainties not included in the updated estimates. The result of this supplemental analysis disclosed that these risks and uncertainties could raise the estimated cost to between \$380 million and \$395 million. These potential additional costs do not need to be added to the base project budget now; however, a number of actions need to be taken to mitigate known risks.

The AOC's May 2003 status report indicates the project is on schedule for substantial completion of the plaza deck in January 2005, substantial completion of the CVC in September 2005, and final completion and opening to the public in December 2005. However, the project is currently experiencing delays and until the AOC compiles a fully integrated schedule, there will not be adequate information to determine whether the estimated completion dates are likely to be met.



Source: The Architect of the Capitol.

Mr. Chairman and Members of the Subcommittee:

Recognizing the need for a new facility to provide greater security for all persons working in or visiting the United States Capitol and to enhance the educational experience of visitors who have come to learn about Congress and the Capitol building, Congress authorized the Architect of the Capitol (AOC) to build a new visitor center for the Capitol. The three-story, underground facility, located on the East side of the Capitol, is designed to be a seamless addition to the Capitol complex when completed without detracting from the appearance of the Capitol or its historic landscaping. It is the largest project on the Capitol grounds in over 140 years. According to current plans, when complete it will include theaters, an auditorium, exhibit space, a service tunnel for truck loading and deliveries, storage, and space for use by the House and Senate.

In response to requests from members of the Capitol Preservation Commission (CPC) and the conference report to the Omnibus Consolidated and Emergency Appropriations Act, 1999 (House Conference Report 105-825), GAO has been providing ongoing assistance to the CPC and the Senate and House appropriations committees in their monitoring and oversight of the Capitol Visitor Center (CVC) project. While we have provided a wide range of assistance as the project has evolved, today, given the current decisions facing the Congress, I will focus on (1) management of the project, (2) the estimated cost for the project, (3) the status of the project's schedule, and (4) actions that Congress and the AOC should consider taking to address funding gaps and other current project issues and risks.

Management of the Project

Shortly after we began to monitor progress on the CVC project, we made a number of suggestions to the AOC aimed at ensuring effective management of the project based on our previous work reviewing construction projects in all three branches of government. AOC generally agreed with our suggestions and took the following actions.

The AOC hired a construction management firm, Gilbane, for day-to-day detailed management of the project. Gilbane has provided project management, including supervision of contractors' work, schedule and cost monitoring, procurement of general conditions construction work, and monitoring and protection of the Capitol building from potential impact of construction. Recently, Gilbane has been working to implement a cost tracking system that conforms to the AOC's approved budget line items for the CVC.

Recognizing the impact that construction of the CVC would have on day-to-day congressional operations, AOC established a communication/outreach effort specifically dedicated to meeting the ongoing need of providing Congress with information regarding the project's impact on congressional operations, as well as progress toward completion of the CVC.

To supplement its in-house capability, AOC also entered into an agreement with the General Services Administration (GSA) to provide services related to management of the

Sequence 1 and 2 procurements. Under the agreement, GSA managed the procurement process, while the AOC (the source selection authority) awarded and now administers the contracts.

While these positive steps have been taken, there are a number of other actions needed to strengthen project management that are outlined in the following sections, including developing risk mitigation strategies and improving tracking and reporting.

Estimated Cost for the Project

Earlier this spring, we and the AOC determined that the estimated budget amount of \$303.5 million for the CVC “base project”¹ was no longer current. The estimate was limited due to uncertainties related to the preliminary nature of the design work, unknown scope of pre-construction requirements, and security adjustments to the design after the events of September 11, 2001. In addition, it was already evident that the expected cost of a number of line items in the estimate, such as utility relocation, tree preservation, temporary visitor screening facilities, and historic preservation, would be exceeded.

Based on GAO’s recommendation, the AOC and Gilbane updated the project cost estimates as of March 20, 2003. The AOC then contracted with Tishman Construction Corporation (Tishman) to review the March 20, 2003 estimate and perform a cost analysis based on information currently available. We reviewed the methodology, assumptions, and support for the analysis, dated May 16, 2003, including contingencies, scope items not included in the estimates, and risks and uncertainties.² We also conducted a supplemental analysis to identify potential future costs due to additional risks and uncertainties not included in the updated estimates.

While we identified limitations to Tishman’s analysis, our review found that Tishman’s analysis was generally reasonable given the scope and assumptions provided by the AOC to Tishman. However, based on information available to us as of June 16, 2003, we identified cost adjustments to Tishman’s analysis of the base project, totaling \$7 million, that we believe need to be made. These adjustments would increase Tishman’s estimated cost at completion for the base project from \$344.3 million to \$351.3 million.

Due to the nature of the uncertainties still surrounding the project’s estimated cost to complete and the limitations of information available at this time, there will likely be events occurring in the future that could further materially affect the project’s cost at completion. For example, additional risks and uncertainties, which cannot be predicted with certainty at this time, were not priced as part of Tishman’s analysis or as part of our

¹ The base project includes a finished visitor center shell and core, an extended loading dock service tunnel, exterior finishes, improvements to the East Plaza, construction of unfinished House and Senate expansion space, exhibits, technical security systems, and a connecting tunnel to the Library of Congress. The base project does not include other items funded by other sources, such as finishing the House and Senate expansion space and certain security-related enhancements.

² Although we performed procedures to review the methodology, assumptions, and support behind the latest cost analysis for the CVC project, we did not conduct an audit.

adjusted figure. The result of this supplemental analysis disclosed that these additional risks and uncertainties could potentially raise the estimated cost at completion of the base project to between \$380 million and \$395 million. (See the list of additional risks and uncertainties below.) These potential additional costs of between \$30 million and \$45 million do not need to be added to the base project budget at this time; however, a number of actions need to be taken to mitigate known risks.

Additional Risks and Uncertainties That Could Affect Project Cost or Utilization

- Unforeseen conditions, including potential underground complications
- Potential for scope creep due to lack of a finalized and approved design program in some areas
- Cost overruns on “design-to-budget” scope, e.g., exhibitions and technical security
- Cost and schedule impacts due to contractor coordination issues
- Project delays and subsequent contractor claims
- Delays due to unique situations—e.g., government functions, terrorist alerts, state funerals
- Unanticipated client requests
- Inaugural support
- Unknown operator requirements (gift shop, kitchen, theater, exhibitions)
- Capitol Building settlement or other damage
- Impact of cost allocations to the House and Senate expansion space on the CVC base budget

In order to arrive at the potential estimated cost of \$380 million to \$395 million, which includes the additional risks and uncertainties, we used the CVC project team’s lowest, most likely, and highest cost estimates for 37 project elements (e.g., structure/site, East Front structure, Library of Congress tunnel) and a simulation analysis to calculate different combinations of the project team’s estimates that factored in risks and uncertainties. Some of the larger risks and uncertainties include unforeseen conditions (including potential underground obstructions); building settlement; contractor coordination issues, especially as they relate to any delays experienced; and the lack of an approved design program in some areas.

While it is not possible to eliminate all risks and uncertainties, certain steps can and should be taken to lessen their potential impact on the final cost of the project. Research by the Construction Industry Institute (CII) shows project scope is the major

determinant of the cost of a project.³ Tishman noted that the reasonableness of AOC's and Gilbane's March 20, 2003, estimate could not be determined for several items because detailed requirements for those items have not been fully determined or approved by the CPC. CII research also shows that the lack of scope definition is the root cause of cost overruns, late completion dates, excessive rework, unnecessary disputes among project participants, and other problems associated with construction projects.⁴ While we did not identify any scope or quality changes to date that have not been brought to the CPC's attention, we are concerned that allowances for the "design to budget" items (for example, the exhibition space and technical security) may not be sufficient to cover the expected scope and quality. We believe there is a continual need for the AOC to align customer expectations with the project's scope, quality, and cost considerations. The Tishman analysis noted that the percentage of pending changes to date compared to the Sequence 1 contract cost is already above industry norms and that there is the potential for scope creep. As a result, it will be important for the AOC to implement controls for the advance and formal approval of any scope changes.

It is general practice when performing budget estimates for construction projects to carry a contingency allowance to cover such issues as unforeseen field conditions and design and price changes. The Tishman analysis evaluated the adequacy of the estimated contingency amounts and increased the amounts in several areas. Based on the information we gathered, we also increased the estimates for contingencies in certain areas. As the project moves forward, it is important that the AOC implement controls for using these contingency funds. Furthermore, we understand that the method to be used for tracking and reporting on contingency balances remains unresolved.

There are also items not in the base project that need to be resolved. For example, the requirements, estimated costs, and funding sources for wayfinding signage,⁵ additional furniture, fixtures, and equipment, and artwork have not been fully determined. In addition, the method for operating and maintaining the CVC has not yet been determined. Consequently, neither the updated estimates nor our supplemental analysis include provisions for these items.

Although not considered part of the base project, the \$70 million already appropriated for the House and Senate expansion space may not be sufficient to make the space fully functional. Our review noted that substantial funds have already been allocated from the House and Senate expansion space budgets. Also, substantial risk exists because the design for the House and Senate expansion space is not complete, and it is assumed that the expansion space will be "designed to budget." However, to the extent that the future design and requirements exceed the remaining budget amounts, additional funds may be needed.

³Construction Industry Institute, *Project Change Management*, Special Publication 43-1 (Austin, Tex.: November 1994).

⁴Construction Industry Institute, *Improving Early Estimates*, Implementation Resource 131-2 (Austin, Tex.: September 1998).

⁵Code-required signage is included in the estimated cost of the base project.

Status of the Project's Schedule

To expedite the project schedule and maintain the option for use of some portion of the CVC for the inaugural events of January 20, 2005, the AOC divided the project into the following stages, rather than bid the total project after completion of all design work:

Pre-construction (largely complete)

- Pre-construction work includes utility relocations, historic preservation efforts, tree care, and temporary visitor facilities. These efforts were conducted in advance of building construction to expedite the start of the construction contractor work. The work is basically completed, with the exception of ongoing tree preservation.

Construction (in process)

- The construction contract for structural/foundation work, referred to as Sequence 1, was awarded to Centex Construction in June 2002 and, assuming no delays, is scheduled to be substantially complete in Spring 2004. As discussed below, the Sequence 1 contractor has experienced delays and the AOC is working with the contractor to determine the impact of these delays to the project.
- The construction contract for the project interface with the East Front of the Capitol, known as Sequence 1C, was awarded on July 11, 2003. Assuming no delays, this work is scheduled to be complete in Summer 2004.
- The construction contract for mechanical, electrical, plumbing and interior finishes work, referred to as Sequence 2, was awarded on April 18, 2003 to Manhattan Construction. Assuming no delays, completion of the construction work is scheduled for December 2005. However, as discussed below, current delays in Sequence 1 could impact the Sequence 2 schedule.

Senate and House Expansion Space (in design phase)

- The design of these spaces is scheduled to be completed late in 2003. The construction of these spaces is scheduled to begin in the summer of 2004, with completion in 2006.

Exhibits (in design phase)

- The final phase of the project will involve the fabrication and installation of the exhibits. Because installation involves climate requirements only available in completed space, this contract is scheduled to be awarded and begin in late 2003, with projected completion in December 2005.

The AOC's May 2003 status report indicates the project is on schedule for substantial completion of the plaza deck in January 2005, substantial completion of the CVC in September 2005, and final completion and opening to the public in December 2005. The project, however, is currently experiencing delays and the AOC is working with Gilbane to develop a fully integrated schedule. Until the AOC develops a fully integrated schedule, it will be difficult to determine whether the estimated completion dates are likely to be met. A fully integrated schedule would combine schedules for all of the

interrelated CVC projects, activities, and long-lead-time procurements (e.g. Sequence 1, Sequence 2, East Front interface, west refrigeration plant expansion, 2005 inauguration) into one coordinated schedule. (The Sequence 2 full schedule is currently not available but is due from Manhattan in August.) According to Gilbane's June 5, 2003, report, the Sequence 1 contractor's May update shows a 134-workday⁶ delay to the completion of Sequence 1. The AOC and contractor are negotiating the potential impact of any delays on the project schedule and budget. The AOC has indicated that current Sequence 1 delays have possibly led to a 40 workday overlap between the Sequence 1 and Sequence 2 schedules. Although Gilbane and the AOC are working with Centex and Manhattan to mitigate the impact of the 40 workday overlap to the schedule, it is currently unclear what the total effect of the current Sequence 1 delays will be to the final project completion date or costs. Because the project is still in the early stages of construction, there is risk of additional delays. We included an additional \$2 million in contingency in our adjustments to the Tishman estimated cost-to-complete for possible delay and acceleration costs.

Matters for AOC and Congressional Consideration

Although the AOC has already initiated some actions to address some issues, we identified the following specific matters for the AOC's and your consideration:

- Expediently address the current funding gap between the \$303.5 million provided for the base project and the updated estimates.
- Consider how best to address the potential costs associated with the risks and uncertainties not specifically included in the updated estimates for the base project.
- Ask the AOC to develop a plan to mitigate risk factors, to the extent practicable, and implement recommendations made by Tishman in the May 16, 2003, report including, but not limited to:
 - revalidate the program of requirements for each cost element,
 - identify, contract for, and begin coordination of all operator requirements with existing design and construction efforts,
 - identify and involve the exhibit and audio visual equipment operators as soon as possible, and
 - institute a proactive schedule management and tracking system related to potential contractor delay claims.
- Determine whether to establish and fund a reserve account for any additional amounts above the current estimates to cover future costs due to risks and uncertainties that cannot be priced or estimated at the current time and establish procedures for timely release of the funds to the CVC project.

⁶ The current contractor schedule indicates a 5 day workweek. Therefore, 134 workdays is equivalent to 187 calendar days, or approximately 6 months.

- Continue to resolve the scope, requirements, estimated costs, and funding sources for unresolved items in the base project, such as fitout of the CVC administration, guide service, first aid and gift shop spaces.
- Continue to resolve the scope, requirements, estimated costs, and funding sources for the items **not** in the base project, including the House and Senate expansion space.
- Implement controls for the approval of changes and AOC's use of contingency funds.
- Continue to resolve contingency tracking and reporting issues to achieve a single and standardized budget and reporting format.
- Expeditiously develop a comprehensive, integrated master project schedule.

We will continue our monitoring efforts throughout construction. I will be happy to answer any questions at this time.

For further information regarding this testimony, please contact Jeanette M. Franzel at (202) 512-9471 or Bernard L. Ungar at (202) 512-4232.

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