

**GAO**

Testimony

Before the Subcommittee on the  
Legislative Branch, Committee on  
Appropriations, U.S. Senate

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# CAPITOL VISITOR CENTER

## Status of Schedule, Fire Protection, Cost, and Related Issues

Statement of Bernard L. Ungar, Director  
Terrell Dorn, Assistant Director  
Physical Infrastructure Issues



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Mr. Chairman and Members of the Subcommittee:

We are pleased to be here today to assist the Subcommittee in monitoring progress on the Capitol Visitor Center (CVC) project. Our remarks will focus on (1) the Architect of the Capitol's (AOC) progress in managing the project's schedule since the Subcommittee's September 15 hearing on the project, (2) issues associated with the CVC's fire protection system, and (3) the project's costs and funding.<sup>1</sup> Our ability to fully address these issues is limited by two important factors. First, AOC's sequence 2 construction contractor's—Manhattan Construction Company—September 2005 schedule reflects a number of significant changes, and AOC has not yet had the opportunity to fully evaluate these changes. Second, neither AOC nor its construction management contractor—Gilbane Building Company—has completed the evaluation of elements of the project schedule that we recommended during the Subcommittee's September 15 hearing. Thus, while we will discuss the schedule's status today, we will not be able to provide specific estimated completion dates until AOC and its construction management contractor complete their assessments and we have the opportunity to evaluate them. Similarly, while we will discuss the status of the project's costs and funding today, we will wait until the project schedule is fully reviewed and stabilized and we have had an opportunity to evaluate AOC's consultant's, McDonough Bolyard Peck (MBP), cost-estimation work before we comprehensively update our November 2004 estimate of the cost to complete the project.

Our remarks today are based on our review of schedules and financial reports for the CVC project and related records maintained by AOC and its construction management contractor; our observations on the progress of work at the CVC construction site; and our discussions with CVC project staff (including AOC, its major CVC contractors, and representatives of MBP), AOC's Chief Fire Marshal, United States Capitol Police (USCP) representatives, and officials responsible for managing the Capitol Power Plant (CPP). We did not perform an audit; rather, we performed our work to assist Congress in conducting its oversight activities.

In summary, AOC and its construction contractors have made progress in managing the schedule and accomplishing work since the Subcommittee's September 15 CVC hearing, but additional delays have been encountered.

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<sup>1</sup>See GAO, *Capitol Visitor Center: Schedule Delays Continue; Reassessment Underway*, [GAO-05-1037T](#) (Washington, D.C.: September 15, 2005).

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Work on all interior levels of the CVC, various sections of the House and Senate expansion spaces, the plaza, and the utility tunnel has continued. However, additional delays have occurred in a number of areas. For example, despite an increase in the number of stone masons working on the project in September, the project lost about 2 weeks on interior stone work installation and a similar amount of time on the utility tunnel.

Moreover, some revisions have been made to project activities and schedules, but these revisions have not been fully evaluated. The sequence 2 contractor revised the manner in which the HVAC and fire protection systems' commissioning work and acceptance testing would be done, which changed this contractor's scheduled completion date for the base project to December 11, 2006, from a completion date of February 26, 2007, in the contractor's August schedule. However, neither AOC nor its construction management contractor has had time to fully evaluate these revisions. In addition, AOC's construction management contractor has now integrated into the project's September 2005 schedule a number of recently prepared component schedules, including schedules for preparing for CVC operations and House and Senate expansion space construction. This integrated project schedule shows the base project as being ready for opening to the public by mid December 2006 and a completion date of February 26, 2007, for the House and Senate expansion spaces.<sup>2</sup> However, neither AOC nor its construction management contractor has fully evaluated the activity durations or adequacy of resource levels shown in the base project's schedule as we recommended in our September 15 statement. Also, the September 2005 schedule does not yet fully reflect input from AOC's Chief Fire Marshal on commissioning or testing and inspection activities. Thus, we are not now in a position to estimate a specific completion date, and our views should be regarded as preliminary at this time. With this qualification in mind, we have not seen recent evidence that would change our preliminary view that a base project completion date in 2006 will be difficult to achieve and that construction

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<sup>2</sup>AOC set September 15, 2006, as the contractual date for completing the base project's construction and for opening the CVC facility to the public. The House and Senate expansion spaces were scheduled to be completed after that date. AOC set the September contract completion date in November 2004, when it reached agreement with the contractor on a new date for starting sequence 2 that reflected the delays experienced on sequence 1. On September 6, 2005, AOC informed Capitol Preservation Commission representatives that it still expected the base project's construction to be substantially complete on September 15, 2006, but was postponing the date for opening the facility to the public to December 15, 2006, so that it could complete system tests, minor punch-list work, and preparations for operations.

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completion in early to mid 2007 is more likely unless AOC and its contractors take extraordinary action or change the project's scope, which could result in additional costs to the Government. Our view is based on the schedule slippages that have already occurred, the views of project personnel that several activities (such as interior wall stone installation and interior finish work) are likely to take longer than shown in the schedule, the large number of activities that the current project schedule shows as being at risk of causing the project's completion date to slip, and the risks and uncertainties that continue to face the project. While we view the increased number of stone masons as quite positive, it is not clear whether the contractor will be able to maintain a sufficiently high number of masons on the site or whether sufficient stone supplies will be available on time given the problems that have been experienced in this regard. AOC and its construction manager expect to have their evaluations of the sequence 2 contractor's schedule changes, scheduled activity durations, and proposed resource levels done by the end of this year. We will re-evaluate the project schedule and inform the Subcommittee of our results after AOC and its construction management contractor have what they consider to be a reasonably stable integrated schedule.

The design of the CVC's fire protection system has undergone a number of changes—largely to reconcile conflicts between security and life and fire safety requirements—and in a number of instances has been the focus of considerable debate among stakeholders (e.g. CVC project team members, AOC's Chief Fire Marshal and AOC fire protection engineers, and USCP representatives). Changes to the system's design and scope have resulted in about \$900,000 in cost increases so far and could result in additional increased costs of about \$4.4 million based on anticipated changes as of September 30, 2005. The bulk of the potential \$5.3 million cost increase stems from two factors—a change in the manner smoke will be kept from egress stairwells that was requested by AOC's Chief Fire Marshal and agreed to by the stakeholders and which resolves a conflict between security and life and fire safety requirements, and a disagreement between AOC and a contractor over contract requirements for certain detection devices. The increased cost figure could change significantly, however, because some CVC project team members believe that the estimated costs for these changes are too high, costs for all proposed or anticipated changes have not yet been fully evaluated, and negotiations relative to the estimated \$4.4 million in anticipated changes have not been completed. We have discussed the costs associated with the stairwell change with AOC, and it has agreed to fully evaluate the situation before it executes any additional contract modifications for this change. Based on our discussions with the CVC project team, AOC's Chief Fire Marshal, and

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USCP representatives, it appears that the fire protection system design is now essentially complete and agreed to by all the stakeholders. Finally, coordination problems have existed between the CVC project team and AOC's Chief Fire Marshall in arranging for inspections of completed work, but steps are being taken to resolve the problems.

We have not updated our interim estimate of a cost of between \$525.6 million and about \$559 million to complete the project, which we reported at the Subcommittee's September 15 CVC hearing, because AOC's consultant just completed its updated cost estimate and we have not yet had the opportunity to evaluate it, and because the project schedule has not yet stabilized. As soon as we evaluate MBP's report and the project schedule stabilizes, we will begin our work to reassess the reasonableness of project completion dates and comprehensively update our cost-to-complete estimate. No additional funding beyond the \$527.9 million for CVC construction and the \$7.8 million that remained available for CVC operations or construction that we reported at the Subcommittee's last CVC hearing has been provided for the CVC.

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## Project Schedules Have Been Revised but Not Fully Evaluated

While work in several areas has moved forward since the Subcommittee's September 15 CVC hearing, additional delays have been encountered, and project schedules have been revised but not fully reviewed or evaluated. Construction work has continued on the CVC, the East Front, the plaza, the House and Senate expansion spaces, and the utility tunnel since the Subcommittee's September 15 hearing. For example, wall stone installation work has continued in the great hall, the orientation theaters, and the auditorium, and the number of stone masons working in the interior of the CVC has increased since mid August. Some stone masons worked on weekends between mid August and mid September. In addition, excavation, concrete, and piping work in the utility tunnel has been proceeding, as has mechanical, electrical, and plumbing work in the CVC.

On the other hand, between the Subcommittee's September 15 hearing and October 12, the sequence 2 contractor completed work on only 3 of the 11 activities we and AOC have been tracking for the Subcommittee. None of these activities had been completed by the target dates shown in the contractor's April 2005 baseline schedule, although one was completed by the date shown in the contractor's June 2005 schedule. (See app. I.) Furthermore, additional delays have occurred on interior and exterior stonework installation, the East Front, the utility tunnel, and the House connector tunnel. For example, according to AOC's construction

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management contractor, during September, the sequence 2 contractor gained only 12 workdays on critical interior stonework and 10 workdays on the utility tunnel out of a possible 21 days of work. According to the construction management contractor, stonework has been delayed due a shortage of stone masons, a lack of critical pieces of stone, the need to do remedial concrete work in the orientation theaters and along the exterior concrete walls and interior concrete floors of the auditorium, and delays in getting shop drawings for stonework on the East Front. According to AOC's construction management contractor, excavation work on First Street for the utility tunnel has been delayed due to unforeseen conditions and the need to stop work for the former Chief Justice's funeral at the Supreme Court, and unforeseen conditions have also delayed work on the House connector tunnel.

During September, the sequence 2 contractor changed the manner in which the HVAC and Fire Protection system's commissioning work and acceptance testing would be done, with the potential result of a time savings. The changes largely involved re-sequencing work and doing work concurrently that the August schedule showed would be done sequentially. According to the contractor's revised schedule, these changes will result in an improvement of over 60 workdays and bring the scheduled completion date for this work to December 11, 2006, compared to the February 26, 2007, date shown in the August schedule. However, these changes have not yet been fully evaluated. AOC and its construction management contractor are reviewing the changes, as is AOC's Chief Fire Marshal. AOC and its construction management contractor believe it will take about 30 to 60 days to complete their assessments, and AOC's Chief Fire Marshal believes that he may have his evaluation done before the end of October.

Altogether, the construction management contractor has identified a total of 11 critical activity paths in the September schedule that will extend the base project's completion date beyond AOC's September 15, 2006, target date if expected lost time cannot be recovered or further delays cannot be prevented. In addition to the critical paths related to the HVAC system and the fire alarm system that are discussed above, examples of other base project critical path activities included in the contractor's September schedule are utility tunnel and piping, stonework in the East Front, interior wall stone in such areas as the orientation theaters and atria, stonework in the auditorium and exhibit gallery, millwork and casework installation in the orientation theaters and atria, fabrication and installation of bronze doors, and penthouse mechanical work. Of the 11 critical activity paths in the September schedule, completion dates for 4

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paths improved compared to the August schedule, but completion dates for the other 7 paths, including all of the stonework paths, slipped. For example, according to the construction management contractor, the September schedule shows all of the work associated with the fire alarm testing critical path being completed by November 22, 2006, an improvement over the August schedule's date of February 26, 2007; the September schedule also shows all of the work associated with the interior auditorium wall stone critical path being completed by December 12, 2005, more than a month later than the August schedule's date of November 2, 2005. The sequence 2 contractor's September 2005 schedule indicates that construction work on the base CVC will be essentially complete by September 15, 2006, and that remaining work between that date and December 11, 2006, will largely consist of testing, balancing, and commissioning the HVAC system; testing and inspecting the fire protection system; punch-list work; and preparing for operations.

Most of the activities discussed above are among the activities we previously identified as likely having optimistic durations, suggesting that it could take even longer to complete them than shown in the project schedule. These activities served as the basis for the recommendation we made to AOC during the Subcommittee's September 15 hearing that AOC rigorously evaluate the durations for the activities shown in the project schedule. According to AOC, it has not yet completed this evaluation. Moreover, we continue to believe that having such a large number of critical activity paths complicates project management and makes on-time completion more difficult.

AOC's construction management contractor has continued to integrate various component schedules into the CVC construction and summary schedules as they have been completed, and the integrated schedule contains about 6,500 activities. Consequently, AOC now has a summary schedule that integrates the completion of CVC and House and Senate expansion space construction with preparations necessary for opening the CVC to the public. This integrated summary schedule shows CVC construction as well as the activities necessary for opening the CVC to the public being completed by mid December 2006, the time AOC proposed last month for opening the CVC to the public. That is, AOC expects construction work on the base CVC project to be substantially completed by September 15, 2006, but expects such work as HVAC commissioning, fire protection system testing and inspection, punch-list work, and operations preparations work to be ongoing until December 15, 2006. According to AOC's sequence 2 and construction management contractors, it is not yet clear whether expansion space construction will

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have progressed to the point where temporary work for fire safety once believed to be necessary to open the CVC to the public will no longer have to be done. They said that they are still analyzing the work associated with those areas where the base project interfaces with the expansion spaces and whether and how the need for temporary work for fire safety can be minimized or eliminated.

Although the sequence 2 contractor has taken, plans to take, and is considering various actions<sup>3</sup> to recover lost time and prevent or mitigate further delays, we continue to believe that the contractor will have difficulty completing construction before early to mid 2007. Our reasons for concern include the uncertainty associated with the September changes in the HVAC commissioning and fire protection system schedules that have not yet been fully reviewed, the schedule slippages to date, optimistic durations for a number of activities based on the views of CVC team members, the large number of activity paths that are critical, and risks and uncertainties that continue to face the project. AOC's construction management contractor also points out that further delays could result from congressional requests to stop work due to high noise levels in the East Front and delays in completing CVC ceiling work necessary for the HVAC and fire protection systems, although the CVC team is considering ways to mitigate these risks. We also note that the Chief Fire Marshal has not yet approved the construction drawings for the fire protection system or the schedule for the system's commissioning and testing.

In addition to our views on the project's September schedule changes and progress, we would also like to briefly discuss several schedule-related issues about which we have previously raised questions or issues or made recommendations to AOC.

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<sup>3</sup>In September, the sequence 2 contractor increased the number of stone masons working on the project. For example, AOC's construction management contractor reported that an average of 22 stone masons worked on the project each work day for the work week ending October 14, compared to an average of 14 each work day for the work week ending August 26. Stone masons also worked on several weekends, and the contractor plans to further increase the number of stonemasons during October and to re-sequence stonework to help mitigate a delay in the exhibit gallery. The contractor has hired an additional subcontractor to help construct the utility tunnel and is considering working longer hours or additional weekends to recover time. The contractor also plans to continue to evaluate the schedule to see what changes can be made to save time in a variety of areas.



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- We have been recommending for some time that AOC improve schedule management and analyze and document delays and the reasons and responsibilities for them on an ongoing basis—at least monthly. We have noted considerable improvements in the CVC team’s schedule analysis and management since the arrival of the construction management contractor’s project control engineer several months ago. Shortly after his arrival, the scope and depth of schedule analysis and management improved significantly, and AOC’s construction management contractor modified its monitoring process to capture information on delays. However, we continue to be concerned about AOC’s not having adequate information systematically compiled and analyzed to fully evaluate the causes and potential responsibilities for delays on an ongoing basis. In our view, not having this type of information on an ongoing basis is likely to create problems later on should disputes arise and knowledgeable staff leave. Also, in this regard, we have previously expressed concerns about the need for the project schedule to show resources to be applied to meet schedule dates. While the sequence 2 contractor has shown proposed resource levels for many activities, proposed resource levels have not been included for many of the new activities added to the project schedule. The lack of such information can complicate the analysis of delays, including their causes and costs. AOC agreed that these issues are important and said it would discuss them with its construction management contractor.
  - We have previously recommended that AOC develop risk mitigation plans to address risks and uncertainties facing the project. In July, AOC asked one of its consultants—MBP—to assist it in identifying risks and developing plans to address those risks. AOC has identified over 50 risks facing the project and established a process for addressing them. AOC has begun to develop and implement plans for managing these risks. As of October 11, AOC had developed plans for addressing 12 risks, such as unforeseen conditions associated with constructing the House connector tunnel, and fabrication and installation of custom bronze doors and windows. AOC said that it will continue to develop plans for the remaining risks. It also plans to discuss the risks at a weekly meeting and add new risks to its list and develop mitigation plans for them as they are identified.
  - The September schedule shows utility tunnel construction being completed in February 2006 and CVC’s air handlers beginning to operate at that time, assuming that they can get steam and chilled water from the Capitol Power Plant. During our September 15 testimony, we noted several problems associated with CPP that could adversely affect the CVC as well as other congressional buildings if not corrected or addressed. These problems included, for example, potential delays in completing the

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West Refrigeration Plant Expansion Project, which is necessary to provide chilled water to the CVC; the removal from service of two chillers in the East Refrigeration Plant because of refrigerant gas leaks; fire damage to a steam boiler; and staffing and training issues associated with operating the new plant and the absence of a CPP director. Since the Subcommittee's September 15 CVC hearing, the fire damage to the boiler has been repaired, and the two coal-burning boilers that were taken off line for maintenance had been put back on line; however, another maintenance problem occurred with one of the boilers and it had to be turned off for repairs, which AOC expects to have completed by the end of this week. Also, over the Columbus Day weekend, heavy rains caused damage to electrical equipment that resulted in a power outage affecting the entire plant. Power was restored within a few hours; however, because of damage to the electrical equipment, power is not available at certain locations within the plant. In particular, one of the chillers in the East Plant is inoperable because power cannot be provided to it. This incident prompted AOC to make a change that affects the West Refrigeration Plant Expansion Project. Specifically, AOC has decided to reconfigure the chilled water piping system to allow the West Plant to operate in isolation of West Plant Expansion. This change, which could result in an increase to the contract cost, will decrease CPP's reliance on the older East Plant and will enhance its capacity to reliably provide chilled water to the CVC and other congressional buildings. Finally, AOC recently advertised the vacant director's position. At this time, GAO has an active engagement to assess certain CPP issues, such as staffing and training for, and the estimated cost to complete, the West Refrigeration Plant Expansion Project. This engagement is being conducted as part of a separate review for the Subcommittee.

- Although AOC determined that the sequence 1 work was substantially complete in November 2004, the sequence 1 contractor has continued to work on punch-list items. Since the Subcommittee's September 15 CVC hearing, AOC's construction management contractor added about 15 additional work items to this list, such as chipping concrete interfering with wall stone installation and repairing drains. According to AOC's construction management contractor, the sequence 1 contractor has been making satisfactory progress in completing the punch-list work.

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## Fire Protection System Issues Are in the Process of Being Resolved

The CVC's fire protection system is complicated, interfaces with security and other building systems, and encompasses a variety of subsystems and components, such as smoke and heat detectors, an alarm system, a sprinkler system, a smoke evacuation system, door locks that will open in the event of a fire, monitoring and control systems, emergency signage, lighting, communication, and a system for preventing smoke from entering stairwells—referred to as stair pressurization—to allow occupants to get out of the building. We have identified three issues related to the fire protection system, each of which we would like to briefly discuss.

1. **Evolving design:** The CVC's fire protection system has undergone a number of design changes and has been the subject of debate among relevant stakeholders for a number of reasons, largely due to conflicts between security and life and fire safety requirements. According to AOC, the building codes governing the design of the CVC often conflict with security requirements, do not recognize the unique security needs of the Capitol, and are particularly silent when it comes to the integration of new air filtration technologies. In addition, AOC said that security requirements and the decision to add state-of-the-art air filtration technology to the project when the construction documents were almost complete forced the project team to redesign all of the air handling systems in a compressed timeframe in order to maintain the overall schedule. It also forced the project team to devise a complex design solution with AOC's Chief Fire Marshal and USCP while sequence 2 was out for bid as well as after the contract had been awarded. On October 5, we attended meetings of representatives from the CVC project team, AOC's Fire Marshal Division, and USCP where issues surrounding the CVC's fire protection system were discussed. Based on those discussions and information subsequently provided by AOC and USCP, it appears to us that the design of the CVC's fire protection system is now essentially complete and agreed to by all of the relevant stakeholders. The CVC project team and the Chief Fire Marshal note, however, that not all of the shop drawings related to the fire protection system have been submitted or approved, and some issues could arise during the review process.
2. **Increased cost:** As of September 30, executed contract modifications and anticipated changes related to CVC's fire protection system totaled about \$5.3 million, with most of this amount, about \$4.4 million, being estimated costs for anticipated changes that have not been fully evaluated or approved. Changes to the system's design and scope already made have resulted in about \$900,000 in cost increases. Costs for changes that have been made or that are anticipated have increased or are expected to increase for several reasons, but the bulk of the

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increases stems largely from two factors—changes requested by AOC’s Chief Fire Marshal aimed at ensuring that the system meets fire safety standards based on his interpretation of code requirements (an area where conflict existed between fire safety and security requirements) and a disagreement between AOC and a contractor on contract requirements regarding certain detection devices. The most costly change involving the security/fire safety conflict that the CVC team has agreed to relates to the manner in which fresh air will be brought into the building to pressurize stairwells to prevent smoke infiltration in the event of a fire. The estimated costs for this change (including the expansion space) amount to about \$2.2 million, or over 40 percent of the estimated increased costs for the fire protection system. Differences of opinion among CVC team members exist on the magnitude of the estimated costs for this change. We have discussed this issue with AOC, and it has agreed to fully evaluate the cost before it executes additional contract modifications relating to stair pressurization. The final costs for the stair pressurization and detection devices in question as well as the other anticipated changes could change significantly from the estimated amounts once any open issues regarding costs are resolved. It is also possible that some of the proposed change orders include work items that are not related to the CVC’s fire protection system, and to the extent this situation exists, costs for such work items would not be attributable to the fire protection system.

3. **Coordination problems:** The CVC project team and AOC’s Fire Marshal Division have been experiencing difficulties arranging for timely inspections of completed work due to coordination problems involving the amount of notice and documentation needed before inspections can occur. To improve coordination, the CVC project team has been working with its construction management contractor and the Chief Fire Marshal to develop a systematic process for arranging for and documenting fire safety inspections and is considering hiring a consultant to help facilitate the coordination process. The Chief Fire Marshal has increased staffing devoted to the CVC and is planning to obtain contract support to help perform CVC inspections. The Chief Fire Marshal is also reviewing the sequence 2 contractor’s September 2005 schedule to determine whether the sequencing of work and the time allotted for fire safety and occupancy inspections are acceptable.

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## Our Project Cost Estimate Update Awaits Assessment of Consultant Estimate and Schedule Stabilization; Funding Provided Has Not Changed Since September 2005

AOC's consultant—MBP—finished its work last week to update the estimated cost to complete the project. We have not yet had time to evaluate MBP's report. Also, as we said during the Subcommittee's September 15 CVC hearing, we are waiting for the project schedule to stabilize before we begin our work to comprehensively update our November 2004 estimate of the cost to complete the project. Thus, we are not revising our interim updated estimated cost to complete the project of between \$525.6 million and about \$559 million that we discussed at the Subcommittee's September 15 CVC hearing. As soon as we evaluate MBP's report and the project schedule stabilizes, we will begin our work to assess the reasonableness of the scheduled completion dates for the CVC and the House and Senate expansion spaces and comprehensively update our estimate of the cost to complete the project.

No additional funding beyond the \$527.9 million for construction and the \$7.8 million that was available for CVC construction or operations has been provided for the project since the Subcommittee's September 15 hearing.<sup>4</sup> As you may recall, Mr. Chairman, at your last CVC hearing, we expressed concern about possible duplication of work and costs in areas where the responsibilities of AOC's CVC construction and operations contractors overlap, such as in designing wayfinding signage and the gift shops. AOC agreed to work with its operations planning contractor to clarify the contractor's scope of work, eliminate any duplication, and adjust the operations contract's funding accordingly. AOC told us that it has discussed these issues with its contractor and concluded that while no duplication of work or funding exists, it needs to clarify the contract's scope of work on wayfinding signage because it included more work than the contractor would actually do.

Mr. Chairman, this concludes our statement. We would be pleased to answer any questions that you or Members of the Subcommittee may have.

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<sup>4</sup>AOC had planned to use \$100,000 of its fiscal year 2006 appropriation for CVC construction to move a fire alarm control panel in the Capitol building related to CVC construction but outside the CVC work area. AOC has decided to pay for this move with other funds, thus making the \$100,000 available for other CVC construction purposes subject to approval of the House and Senate Committees on Appropriations. As we reported in September, AOC had also used about \$805,000 in CVC operations funds for certain construction work that had been funded by the fiscal year 2006 construction appropriation. These funds also could be used for other CVC work subject to the Committees' approval.

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## Contacts and Acknowledgments

For further information about this testimony, please contact Bernard Ungar at (202) 512-4232 or Terrell Dorn at (202) 512-6923. Other key contributors to this testimony include Shirley Abel, Michael Armes, John Craig, George Depaoli, Maria Edelstein, Brett Fallavollita, Jeanette Franzel, Jackie Hamilton, Bradley James, Scott Riback, Kris Trueblood, and Alwynne Wilbur.

# Appendix I: Capitol Visitor Center Critical Construction Target Dates September 16 – October 18, 2005

Activity	Location	April 2005 Scheduled Finish Date	June 2005 Scheduled Finish Date	Actual Finish Date
Drill/Set Soldier Piles Sta. 0:00-1:00	Utility Tunnel	6/08/05	8/23/05	9/21/05
Wall Stone Area 9 Base	Great Hall	7/15/05	11/03/05	9/14/05
10" South Fire Line	Site	7/19/05	1/09/06	
Excavate and Shore Sta. 0:00-1:00	Utility Tunnel	7/21/05	10/05/05	
Concrete Working Slab Sta. 0:00-1:00	Utility Tunnel	7/26/05	10/10/05	
Waterproof Working Slab Sta. 0:00-1:00	Utility Tunnel	7/29/05	10/13/05	
Wall Stone Area 1	Congressional Auditorium	8/08/05	7/22/05	
Wall Stone Area 2	Congressional Auditorium	8/22/05	8/05/05	
Wall Stone Area 3	Congressional Auditorium	9/06/05	8/19/05	
Wall Stone Area 5* Base	Orientation Theater		9/13/05	9/28/05
Perimeter CMU Walls	Orientation Lobby	9/20/05	9/16/05	

Source: AOC's April and June 2005 CVC sequence 2 construction schedules for the scheduled completion dates and AOC and its construction management contractor for the actual completion dates.

Note: Actual completion information was obtained on October 12, 2005.

\*This activity was not noted listed in the April schedule. All other activities were critical in the April schedule or became critical in subsequent schedules.

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