

September 2007

SMITHSONIAN  
INSTITUTION

Funding Challenges  
Affect Facilities'  
Conditions and  
Security, Endangering  
Collections



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# Highlights

Highlights of [GAO-07-1127](#), a report to congressional requesters

## Why GAO Did This Study

The Smithsonian Institution (Smithsonian) is the world's largest museum complex and research organization. Its annual operating and capital program revenues come from its own private trust fund assets and federal appropriations, with the majority of funds for facilities coming from federal appropriations. In 2005, GAO reported that the Smithsonian's current funding would not be sufficient to cover its estimated \$2.3 billion in facilities projects through 2013 and recommended that the Smithsonian Board of Regents, its governing body, develop and implement a funding plan. As requested, GAO described changes in the condition of the Smithsonian's facilities and estimate for project costs since 2005, analyzed the Smithsonian's steps taken and challenges regarding protecting and managing its real property portfolio, and assessed the Smithsonian's efforts to develop and implement strategies to fund its facilities' projects. GAO reviewed relevant documents and interviewed officials from the Smithsonian and other organizations.

## What GAO Recommends

GAO recommends that the Smithsonian (1) increase awareness of security issues; (2) include privately funded projects in its capital plan, and (3) comprehensively analyze funding options and report to Congress and the Office of Management and Budget on a funding strategy. The Smithsonian concurred with the report's recommendations.

To view the full product, including the scope and methodology, click on [GAO-07-1127](#). For more information, contact Mark L. Goldstein at (202) 512-2834 or [goldsteinm@gao.gov](mailto:goldsteinm@gao.gov).

## SMITHSONIAN INSTITUTION

### Funding Challenges Affect Facilities' Conditions and Security, Endangering Collections

#### What GAO Found

The Smithsonian has made some facilities improvements since our 2005 report, but the continued deterioration of many facilities has caused further access restrictions and has threatened collections. The Smithsonian's cost estimate for facilities projects has increased to \$2.5 billion from \$2.3 billion in April 2005. For example, a lack of temperature and humidity control at National Air and Space Museum storage facilities has caused corrosion to historic airplanes and increased the cost of restoring these items for exhibit.

While the Smithsonian follows key security practices to protect its assets, it faces challenges related to ensuring that museum and facility directors are aware of security information and related to funding constraints. Some directors' lack of awareness of security information limits their ability to respond to changes in the security of their facilities. Also, some museum and facility directors stated that in the absence of more security guards, some cases of vandalism and theft have occurred. In addition, the Smithsonian has made significant strides in improving its real property portfolio management, such as improving its real property data and using performance metrics. However, the Smithsonian has omitted privately funded projects from its capital plan, making it challenging for the Smithsonian and stakeholders to comprehensively assess the funding and scope of projects.

To address GAO's April 2005 recommendation regarding implementing a funding plan for its facilities projects, the Board of Regents created an ad-hoc committee, which, after reviewing nine options, requested increased federal funding. We found that some of the Smithsonian's evaluations of the nine funding options were limited in that they did not always provide complete analysis, fully explain specific assumptions, or benchmark with other organizations. Also, some options were dismissed because independently they would not generate enough revenue, but the evaluations do not consider combining options to increase revenues.

#### Facilities Problems Include Leaks in the National Zoological Park's Sea Lion Pool and the Roof of the National Museum of African Art



Sources (left to right): GAO and Smithsonian Institution.

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# Contents

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<b>Letter</b>		<b>1</b>
	Results in Brief	5
	Background	9
	Despite Some Improvements, Deteriorating Facilities Have Caused Further Problems, and Cost Estimate for Facilities Projects Has Increased	18
	The Smithsonian Follows Many Key Security Practices to Protect Its Assets but Faces Communication and Funding Challenges	31
	The Smithsonian Has Taken Steps to Improve Real Property Portfolio Management but Faces Challenges Related to Funding Constraints and Its Capital Plan	38
	The Smithsonian Has Taken Some Steps to Develop and Implement Funding Strategies, but Its Evaluation of Proposed Alternatives Has Been Limited	52
	Conclusions	62
	Recommendations for Executive Action	63
	Agency Comments and Our Evaluation	64
<b>Appendix I</b>	<b>Scope and Methodology</b>	<b>67</b>
<b>Appendix II</b>	<b>Smithsonian's Efforts to Implement Key Security Practices</b>	<b>71</b>
<b>Appendix III</b>	<b>Comments from the Smithsonian Institution</b>	<b>74</b>
	GAO Comments	81
<b>Appendix IV</b>	<b>GAO Contact and Staff Acknowledgments</b>	<b>83</b>
<b>Tables</b>		
	Table 1: Buildings Disposed of by the Smithsonian Since 2005, Including Elements of Decision and Proceeds, as Described by Smithsonian Officials	42
	Table 2: Smithsonian Facilities Capital and Maintenance Appropriations, Fiscal Years 2002-2007	47

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Table 3: Funding and Total Cost of Smithsonian Capital Projects That Have Received Private Funds for Capital Costs, Fiscal Years 2002-2007	50
Table 4: Nine Funding Options Evaluated by the Ad-Hoc Committee on Facilities Revitalization	53

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## Figures

Figure 1: Location of Smithsonian Institution Owned and Leased Facilities	11
Figure 2: Growth in Major Facilities Owned by the Smithsonian Institution, in Square Feet	13
Figure 3: Key Security Practices in Facility Protection	14
Figure 4: Smithsonian Operating Revenue, Fiscal Year 2006	16
Figure 5: Obsolete Electrical Systems at the National Air and Space Museum	20
Figure 6: Plastic Sheeting Covers Native American Boats at the Cultural Resources Center to Prevent Water Damage	21
Figure 7: Plastic Sheeting Put Up to Protect Collection Items from Water Damage in a Storage Area of the Quadrangle Complex	23
Figure 8: The National Zoo's Invertebrate House, Located at the Back of the Reptile Discovery Center	24
Figure 9: Ape House Exhibit at the National Zoo	26
Figure 10: Sea Lion Pool at the National Zoo	27
Figure 11: Leaking Skylight over the Museum of African Art	28
Figure 12: Security Officer Levels at Smithsonian Museums and Facilities, 2003 Compared with 2007	35
Figure 13: Timeline of the Ad-Hoc Committee on Facilities Revitalization Key Events	55
Figure 14: Closing All Smithsonian Museums on the National Mall for 3 Days a Week	57

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## Abbreviations

Air and Space Museum	National Air and Space Museum
American Art Museum	Smithsonian American Art Museum
Board of Regents	Smithsonian Board of Regents
CCTV	closed circuit television cameras
Cooper-Hewitt Museum	Cooper-Hewitt National Design Museum
FEMA	Federal Emergency Management Agency
Forest Service	Department of Agriculture's Forest Service
Freer Gallery	Freer Gallery of Art
FRPC	Federal Real Property Council
IRC	Independent Review Committee
ISC	Interagency Security Committee
MOMA	Museum of Modern Art
Museum of African American History and Culture	National Museum of African American History and Culture
Museum of African Art	National Museum of African Art
Museum of American History	National Museum of American History Kenneth E. Behring Center
Museum of Natural History	National Museum of Natural History
Museum of the American Indian	National Museum of the American Indian
NAPA	National Academy of Public Administration
National Zoo	National Zoological Park
NHPA	National Historic Preservation Act
NJTTF	National Joint Terrorism Task Force
NPS	National Park Service
OFEO	Office of Facilities Engineering and Operations
OMB	Office of Management and Budget
OPS	Office of Protection Services
Portrait Gallery	National Portrait Gallery
RCM	reliability centered maintenance
Reynolds Center	Donald W. Reynolds Center for American Art and Portraiture
Sackler Gallery	Arthur M. Sackler Gallery

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Smithsonian  
Udvar-Hazy Center

Smithsonian Institution  
National Air and Space Museum  
Steven F. Udvar-Hazy Center

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United States Government Accountability Office  
Washington, DC 20548

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September 28, 2007

The Honorable Dianne Feinstein  
Chairman  
Committee on Rules and Administration  
United States Senate

The Honorable Norman Dicks  
Chairman  
The Honorable Todd Tiahrt  
Ranking Minority Member  
Subcommittee on Interior, Environment,  
and Related Agencies  
Committee on Appropriations  
House of Representatives

The Smithsonian Institution (Smithsonian) has been referred to as America's museum, as its museums hold and provide access to irreplaceable national collections in American and natural history, art, and other areas. The act establishing the Smithsonian in 1846 provided, among other things, that the business of the Smithsonian be conducted by a board of regents. Since its beginning, the Smithsonian has evolved into the world's largest museum complex and research organization; two of its museums on the National Mall in Washington, D.C., are the most visited in the world. The Smithsonian has 19 museums and galleries, 9 science centers, a zoological park, and various other facilities it uses to accomplish its mission: "the increase and diffusion of knowledge among men." In recent years, the National Academy of Public Administration (NAPA), the Smithsonian, and we have reported on the deterioration of the Smithsonian's facilities and the threat posed by this deterioration to the Smithsonian's collections. For example, in April 2005, we reported that the failing condition and closure of the Smithsonian's 1881 Arts and Industries building on the National Mall was the most significant example of a broad decline in the condition of the Smithsonian's facility portfolio.<sup>1</sup> Moreover, we reported that structural deterioration and failing systems in Smithsonian museums and other facilities presented serious long-term

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<sup>1</sup>GAO, *Smithsonian Institution: Facilities Management Reorganization Is Progressing, but Funding Remains a Challenge*, [GAO-05-369](#) (Washington, D.C.: Apr. 25, 2005).

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risks to the Smithsonian's collections. A 2001 report by NAPA found that prior to 2000, the Smithsonian had underestimated its revitalization needs, which were significantly larger than were identified in its budget requests.

The Smithsonian's annual operating and capital program revenues come from its own private trust fund assets and federal appropriations; however, the majority of funds for facilities come from the Smithsonian's federal appropriations. Six percent of the Smithsonian's annual operating revenue—about \$58.2 million in fiscal year 2006—comes from unrestricted private funds, and the Smithsonian's Board of Regents has the authority to spend these unrestricted private funds for various purposes, including facilities.<sup>2</sup> We reported in April 2005 that the Smithsonian's trust fund assets and federal appropriations at current levels would not be sufficient to cover the Smithsonian's estimated \$2.3 billion in revitalization, construction, and maintenance projects—which include security-related projects—from 2005 through 2013. Given this significant funding challenge, we recommended that the Smithsonian Board of Regents (Board of Regents) develop and implement a strategic funding plan to address the Smithsonian's facilities projects. In April 2007, we testified that based on preliminary findings, the Smithsonian's estimated costs for facilities projects had increased.<sup>3</sup> A June 2007 report commissioned by the Board of Regents concluded that the Smithsonian had become more dependent on federal funds from January 2000 through March 2007. As the Smithsonian's chief decision-making body, the Board of Regents is responsible for the long-term stewardship of the Smithsonian's mission, which includes maintaining the Smithsonian's facilities and collections, as well as ensuring that the Smithsonian has a funding strategy that provides sufficient funds to support these activities.

The Smithsonian is not the only entity receiving federal funds that faces challenges related to real property. We have found over the years that many federal agencies face long-standing challenges involving deteriorating facilities and protecting assets in the post-September 11 environment, among other things. These findings have led to our inclusion of real property management on our high-risk list of federal programs

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<sup>2</sup>The Smithsonian's private trust funds are divided into two categories: restricted and unrestricted. Restricted trust funds must be used for specified purposes. Unrestricted trust funds can be used to support any Smithsonian activity.

<sup>3</sup>GAO, *Smithsonian Institution: Funding for Real Property Needs Remains a Challenge*, [GAO-07-725T](#) (Washington, D.C.: Apr. 11, 2007).



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since January 2003.<sup>4</sup> To address the problems we identified related to our high-risk designation, the administration added a real property initiative to the President's Management Agenda, and the president issued Executive Order 13327, which implements the real property initiative by outlining several requirements intended to help agencies accurately account for, maintain, and manage their real property assets. These requirements include, among other things, systematizing agency procedures and actions related to asset management through the development of an asset management plan and developing and using a complete and accurate real property data inventory and performance metrics. Although the Smithsonian is not covered by the executive order, the administration has encouraged all agencies and federal entities to use the executive order and related asset management principles as guidance.

In light of ongoing concerns over the Smithsonian's particular challenges in these areas, to address your request, we answered the following questions: (1) How has the condition of the Smithsonian's facilities and cost estimate for facilities projects changed since our 2005 report? (2) What steps has the Smithsonian taken to protect its assets, and what challenges has it experienced in doing so? (3) What steps has the Smithsonian taken to improve the management of its real property portfolio, and what challenges has it experienced in doing so? And (4) to what extent has the Smithsonian developed and implemented strategies to fund its revitalization, construction, and maintenance projects?

To obtain information on how the condition of the Smithsonian's facilities has changed since our 2005 report, we interviewed the museum and facility directors<sup>5</sup> of 14 Smithsonian facilities. To obtain information on new facilities projects, problems with facilities, and adverse effects, if any on collections, we toured 8 facilities identified by the Smithsonian as having major revitalization projects or additional facilities-related problems since our April 2005 report. To determine how the Smithsonian's cost estimate for facilities projects has changed since our 2005 report, we reviewed the Smithsonian's revised cost estimate for major revitalization,

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<sup>4</sup>GAO, *High-Risk Series: Federal Real Property*, [GAO-03-122](#) (Washington, D.C.: January 2003); and *Federal Real Property: Progress Made toward Addressing Problems, but Underlying Obstacles Continue to Hamper Reform*, [GAO-07-349](#) (Washington, D.C.: Apr. 13, 2007).

<sup>5</sup>For this report, the term museum and facility directors refers to directors of museums, directors of nonmuseum facilities, such as research and storage centers, and key facilities and security managers of these museums and facilities.

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construction, and maintenance projects from fiscal year 2005 through fiscal year 2013. To obtain information on the steps the Smithsonian has taken to protect its assets and the challenges it has experienced, we reviewed documents such as the Smithsonian's 2005 *All Hazards Risk Assessment Report* and 2002 *Disaster Management Program Master Plan*, and the federal government's Interagency Security Committee's (ISC) key security practices. To obtain information on the steps the Smithsonian has taken to improve the management of its real property portfolio, we reviewed our prior work on this issue as well as Smithsonian documents related to asset management, capital planning, and master planning. To determine the extent to which the Smithsonian developed and implemented strategies to fund its revitalization, construction, and maintenance projects, we reviewed documents used by the Board of Regents to select a funding strategy and interviewed members of the Board of Regents.

To address all of the above objectives, we also interviewed appropriate Smithsonian officials and conducted site visits at organizations in California and New York with characteristics similar to those of the Smithsonian, where we reviewed relevant documents, toured facilities, and interviewed officials. We visited the following organizations with characteristics similar to those of the Smithsonian: in California, the California Academy of Sciences, the California State University Office of the Chancellor, San Jose State University, San Francisco State University, the University of California Office of the President, the University of California at Berkeley, the University of California at San Francisco, and the Zoological Society of San Diego, including the Wild Animal Park; in New York, the American Museum of Natural History and the Museum of Modern Art. We selected California because several facilities' management experts recommended that a university system with old buildings and geographically dispersed campuses would have characteristics similar to those of the Smithsonian, and in California we could efficiently visit the University of California system and the California State University system, both of which meet these criteria, as well as a large and highly visited zoo and a science academy undergoing a major capital construction project. We selected New York so that we could efficiently go to two large and highly visited museums with characteristics similar to those of some Smithsonian museums. We conducted our work from September 2006 to September 2007 in accordance with generally accepted government auditing standards. See appendix I for a more detailed explanation of our scope and methodology.

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## Results in Brief

The Smithsonian has made a number of facilities improvements since our 2005 report, but the continued deterioration of many facilities has caused further access restrictions and has threatened collections, and the Smithsonian's cost estimate for facilities projects has increased. The Smithsonian improved the condition of a number of facilities since our 2005 report. For example, the Smithsonian completed its revitalization of the Donald W. Reynolds Center for American Art and Portraiture (Reynolds Center), which houses the Smithsonian American Art Museum (American Art Museum) and the National Portrait Gallery (Portrait Gallery). The Smithsonian also completed the construction of Pod 5, a fire-code-compliant space built to store alcohol-preserved specimens of the National Museum of Natural History (Museum of Natural History). Many of these specimens are currently stored within the museum building on the National Mall in Washington, D.C., in spaces that do not meet fire-code standards. Collections are scheduled to be moved to Pod 5 over the next 2 years. At the same time, problems with the Smithsonian's facilities have resulted in additional access restrictions and damage and have continued to threaten collections and cause other problems, according to museum and facility directors:

- At the National Air and Space Museum (Air and Space Museum), power capacity issues caused by inadequate electrical systems have forced the museum to occasionally close galleries to visitors.
- A lack of temperature and humidity control at storage facilities belonging to the Air and Space Museum has caused corrosion to historic airplanes and increased the cost of restoring these items for exhibit.
- Problems with the condensate system that provides humidification to the building housing the Arthur M. Sackler Gallery (Sackler Gallery) and National Museum of African Art (Museum of African Art) have caused unpredictable leaks throughout the complex, threatening collections.
- Leaks in the National Zoo's sea lion and seal pools as of July 2007 were causing an average daily water loss of 110,000 gallons, with a replacement cost of \$297,000 annually.

According to Smithsonian officials, repairs to some of these problems are scheduled to take place over the next several years. In light of such problems, the Smithsonian's cost estimate for facilities projects from fiscal year 2005 through fiscal year 2013 for which it expects to receive federal funds has increased since April 2005 from about \$2.3 billion to about

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\$2.5 billion for the same time period. According to Smithsonian officials, this estimate could increase further.

The Smithsonian follows key security practices to protect its assets, but it faces challenges related to ensuring that museum and facility directors are aware of important security information and related to funding constraints. The Smithsonian follows key security practices we have identified in prior work,<sup>6</sup> such as allocating resources to manage risk by developing a risk assessment report and leveraging security technology. In its risk assessment report, the Smithsonian identified the primary risks to over 30 of its facilities and made key risk reduction and mitigation recommendations. Despite these efforts, we found that nine museum and facility directors we spoke with were unaware of the contents of the Smithsonian's risk assessment report, and many stated that on any given day, they do not know how many security officers will show up at their facility. The Smithsonian's Office of Protection Services (OPS) is responsible for operating programs for security management at Smithsonian facilities. However, some museum and facility directors' lack of awareness of the risk assessment report limits their ability to work with OPS to identify, monitor, and respond to changes in the security of their facilities. Furthermore, some museum and facility directors cited an insufficient number of security officers to protect assets due to funding constraints. Smithsonian obligations for security have increased since September 11, 2001, from \$37 million in 2001 to a high of \$67 million in 2006, but certain needs have gone unaddressed. In addition, due to funding constraints, the Smithsonian's two most visited museums have experienced a 31 percent decrease in security officers since 2003, and the overall number of security officers has decreased at a time when the Smithsonian's square footage has increased. Some of the Smithsonian's museum and facility directors said that in the absence of more security officers, some cases of vandalism and theft have occurred. In addition, two museum directors stated that it has become more difficult for them to acquire collections on loan because lenders have expressed concern with the lack of protection.

Faced with deteriorating facilities and an increased cost estimate for facilities projects, the Smithsonian has taken steps to improve the

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<sup>6</sup>GAO, *Homeland Security: Further Actions Needed to Coordinate Federal Agencies' Facility Protection Efforts and Promote Key Practices*, GAO-05-49 (Washington, D.C.: Nov. 30, 2004).

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management of its real property portfolio but faces challenges related to funding constraints and its capital plan. Several factors affect the Smithsonian's efforts to manage its real property portfolio, including historical preservation requirements. The Smithsonian's centralized office for real property management, known as the Office of Facilities Engineering and Operations (OFEO), has made significant strides in several areas related to real property portfolio management, including improving real property data and developing performance metrics on, for example, maintenance and customer satisfaction. Many of these steps incorporate the administration's real property guidance. In addition, the Smithsonian has refined its capital planning process to improve its real property portfolio management. At the same time, however, funding constraints have presented considerable challenges to OFEO's efforts. For example, while a majority of museum and facility directors stated that OFEO does a good job of prioritizing and addressing problems with the amount of funds available, several museum and facility directors expressed frustration that projects at their facilities had been delayed, and OFEO officials stated that a lack of sufficient funds for maintenance has limited their ability to optimally maintain equipment, leading to more expensive failures later on. OFEO has worked to justify an increase in federal funds for facilities. However, although private funds made up 39 percent of the Smithsonian's capital funds for facilities projects for fiscal years 2002 through 2007, the Smithsonian has omitted privately funded projects from its capital plan and its estimate of \$2.5 billion for facilities projects through 2013, making it challenging for the Smithsonian and other stakeholders to comprehensively assess the funding and scope of facilities projects. Smithsonian officials noted that the majority of these private funds were donated for the construction of new facilities—namely, the National Museum of the American Indian (Museum of the American Indian) and the National Air and Space Museum Steven F. Udvar-Hazy Center (Udvar-Hazy Center)—and there is no assurance that private funds would make up 39 percent of the Smithsonian's funds for capital projects in future years. Other organizations we visited include both private and public investments in their capital plans to inform their stakeholders about the scope of projects and the extent of such partnerships used to fund capital needs.

Funding constraints are clearly a common denominator with regard to the Smithsonian's security and real property management, but the Smithsonian Board of Regents' efforts to develop and implement strategies to fund its facilities revitalization, construction, and maintenance needs have been limited. The Board of Regents has taken some steps to address our 2005 recommendation regarding a strategic funding plan for facilities

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projects. After reviewing materials prepared by Smithsonian management that identified and evaluated nine options to address facilities projects—such as establishing a special exhibition fee and issuing a facilities revitalization bond—an ad-hoc committee established by the Board of Regents decided to request an additional \$100 million annually in federal funds for facilities over its current appropriation for 10 years, starting in 2008, for a total of an additional \$1 billion. To implement this recommendation, in September 2006, several members of the Board of Regents and the Secretary of the Smithsonian met with the President to discuss the issue of increased federal funding for the Smithsonian’s facilities. According to two members of the Board of Regents, this option was selected because the Board of Regents believed that the revitalization, construction, and maintenance of Smithsonian facilities are federal responsibilities. According to Smithsonian officials, it is the position of the Smithsonian, based on an historical understanding, that the maintenance and revitalization of facilities are federal responsibilities. Smithsonian officials pointed out that as early as the 1850s, the federal government has provided appropriations to the Smithsonian for the care and presentation of objects belonging to the United States. The President’s fiscal year 2008 budget proposal included an increase of about \$44 million over the Smithsonian’s fiscal year 2007 appropriation, far short of what the Smithsonian requested, and it is not clear how much of this proposed increase would be used to support facilities. Our analysis of the Smithsonian’s evaluations of the eight other funding options, including the potential benefits and drawbacks of each, showed that the evaluations were limited in that they did not always include a complete analysis, fully explain specific assumptions, or benchmark with other organizations, items crucial to determining each option’s potential viability. For example, the Smithsonian’s analysis of a general admission fee option included an adjustment of annual net gains to account for losses in revenue at restaurants and stores. However, the Smithsonian’s materials did not discuss whether other museums had experienced such losses after establishing admission fees. We spoke with six other museums and a zoological park that stated that instituting or increasing admission fees did not decrease the amount of money visitors spent in restaurants and stores. In addition, although several of the nine options are dismissed because independently the options would not generate the amount of revenue required to address the Smithsonian’s facilities projects, the evaluation did not consider the potential of combining options to generate more revenue.

Clearly, the Smithsonian is at a crossroads, with significant security and facilities projects and funding constraints that have limited its ability to complete these projects in a timely manner. The Smithsonian also faces

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communication challenges regarding security, and its omission of private funds from its capital plan and cost estimate has reduced the ability of the Smithsonian and other stakeholders to comprehensively assess the funding and scope of facilities projects. We are therefore making recommendations designed to improve communication and information about security and to improve the comprehensiveness of the Smithsonian's capital plan and cost estimate. Moreover, if the Smithsonian does not develop a viable strategy to address its growing cost estimate for facilities projects, its facilities and collections face increased risk, and the ability of the Smithsonian to meet its mission will likely decline. We are therefore recommending that the Smithsonian Board of Regents perform a more comprehensive analysis of alternative funding strategies beyond principally using federal funds to support facilities and submit a report to Congress and the Office of Management and Budget (OMB) describing a funding strategy for current and future facilities needs. According to two members of the Board of Regents, the board recognizes that it may need to undertake further analysis of the funding options presented and consider additional funding options; and in June 2007, the Board voted to turn the ad-hoc committee into a standing committee on facilities revitalization. These members of the Board of Regents also stated they recognized the need to work closely with Congress on this issue in the future. However, these regents told us that in light of other priorities, the board has not yet had time to fully reconsider funding strategies. In commenting on a draft of this report, the Smithsonian concurred with our recommendations and provided additional information, which we have incorporated where appropriate. The Smithsonian also expressed concerns about several issues in the report. A summary of these concerns and our responses to them can be found in Agency Comments and Our Evaluation. The Smithsonian's full comments and our more detailed response can be found in Appendix III.

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## Background

Congress established the Smithsonian in 1846 to administer a large bequest left to the United States by James Smithson, an English scientist, for the purpose of establishing, in Washington, D.C., an institution "for the increase and diffusion of knowledge among men." In accepting Smithson's bequest on behalf of the nation, Congress pledged the "faith of the United States" to carry out the purpose of the trust.<sup>7</sup> To that end, the act

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<sup>7</sup>A trust is a fiduciary relationship involving a right of property held by the trustee for the benefit of another.

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establishing the Smithsonian provided for the administration of the trust, independent of the government itself, by a Board of Regents and a Secretary, who were given broad discretion in the use of the trust funds. The Board of Regents currently consists of nine private citizens as well as members of all three branches of the federal government, including the Chief Justice of the United States, the Vice President, three senators, and three representatives.<sup>8</sup> As the Smithsonian's chief decision-making body, the Board of Regents is responsible for ensuring the maintenance of the facilities and collections of the Smithsonian Institution. This includes ensuring that the Smithsonian has sufficient funds, from either public or private sources, to support these activities.

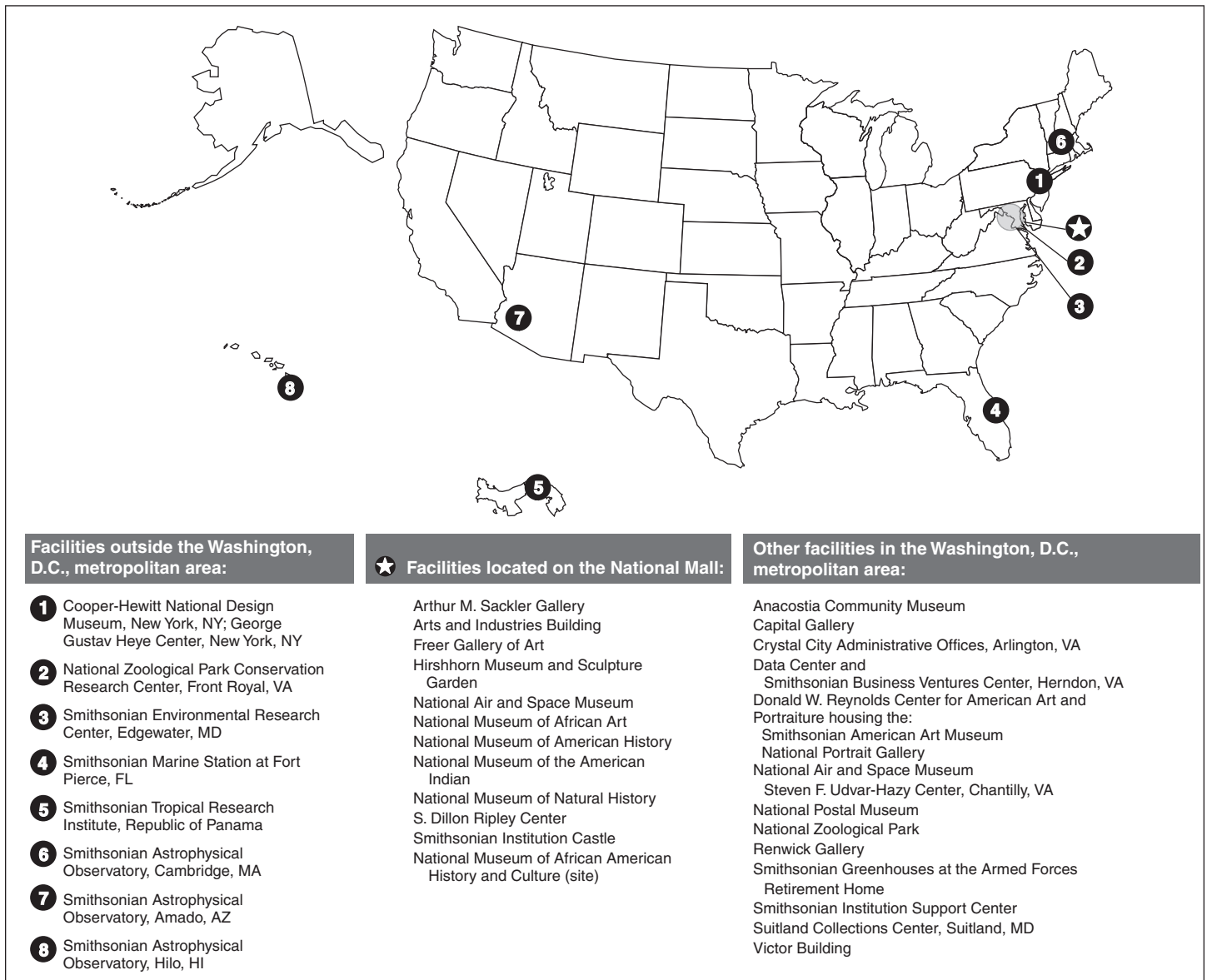
Over the last 160 years, the Smithsonian's facilities inventory has expanded to include 19 museums and galleries, 9 research centers, a zoo, and other facilities—most located in or near Washington, D.C. These facilities include more than 700 buildings and structures, owned and leased, ranging from major museum buildings to storage buildings and storage sheds (see fig. 1).

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<sup>8</sup>The three senators are appointed by the President of the Senate, the three representatives are appointed by the Speaker of the House, and nine citizens are appointed by joint resolution of Congress—two from the District of Columbia and seven from the states.



**Figure 1: Location of Smithsonian Institution Owned and Leased Facilities**



Source: Smithsonian Institution.

Note: Facilities under 50,000 square feet are not represented.

The major buildings owned by the Smithsonian range in age from about 160 years old to less than 1 year old, with most of the facilities' growth occurring since the 1960s (see fig. 2). The Smithsonian's growth will

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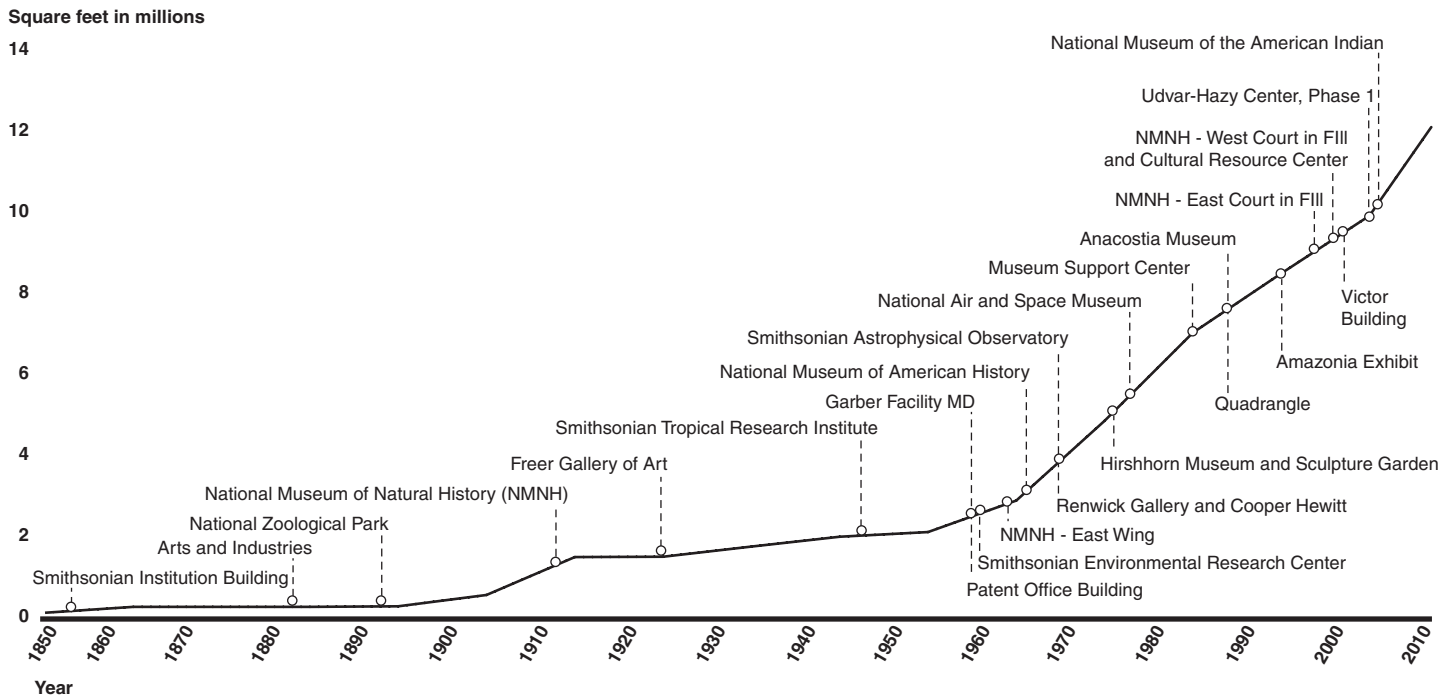
continue, with the construction of an aircraft restoration area—phase II of the Udvar-Hazy Center<sup>9</sup>—and the design and construction of a National Museum of African American History and Culture (Museum of African American History and Culture), authorized by Congress in 2003. Beyond this, some members in both houses of Congress have expressed interest in developing a National Museum of the American Latino.<sup>10</sup>

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<sup>9</sup>The Udvar-Hazy Center near Washington Dulles International Airport is the companion facility to the Air and Space Museum on the National Mall and is being built in two phases. Phase I opened in December 2003 and provides enough space for the Smithsonian to display thousands of aviation and space artifacts. Phase II will include a restoration hangar, archives, collections processing unit, conservation laboratory, and collections storage facility.

<sup>10</sup>Several bills have been introduced in the 110th Congress to study the potential creation of a National Museum of the American Latino and whether the museum should be located within the Smithsonian. See S. 500, 110th Cong. (2007); and H.R. 512, 110th Cong. (2007).

**Figure 2: Growth in Major Facilities Owned by the Smithsonian Institution, in Square Feet**



Source: Smithsonian Institution.

Note: This figure tracks the square footage for all owned and leased buildings as they were added to the inventory over time. Only the major facilities are named in the figure, although the square footage of smaller buildings is included. Also, in November 2005, the Smithsonian Institution sold the Victor Building.

The physical security of federal facilities, including those on the National Mall, has been a more urgent governmentwide concern after the terrorist attacks of September 11, 2001. We have issued several reports, including our November 2004 report, related to improving the physical security of federal facilities.<sup>11</sup> In that report, we assessed the actions of the ISC in coordinating federal facility protection efforts and delineated a set of six key practices that had emerged from the collective practices of federal

<sup>11</sup>GAO-05-49.

agencies to provide a framework for guiding agencies' facility protection efforts.<sup>12</sup> These key practices are briefly described in figure 3.

**Figure 3: Key Security Practices in Facility Protection**

<p><b>Allocating resources using risk management</b></p> <p>Identify threats, assess vulnerabilities, and determine critical assets to protect and use information on these and other elements to allocate resources as conditions change.</p>	<p><b>Leveraging technology</b></p> <p>Leverage technologies to enhance facility security through methods like access control, detection, and surveillance systems.</p>	<p><b>Information sharing and coordination</b></p> <p>Establish means of coordinating and sharing security and threat information with other government entities and the private sector.</p>
<p><b>Performance measurement and testing</b></p> <p>Use metrics to ensure accountability for achieving program goals and improved security at facilities.</p>	<p><b>Aligning assets to mission</b></p> <p>Align assets to mission and relocate staff to reduce vulnerabilities, to the extent agencies have excess and/or underutilized facilities.</p>	<p><b>Strategic management of human capital</b></p> <p>Strategically manage human capital to maximize government performance and ensure accountability in facility protection.</p>

Source: GAO.

The Smithsonian significantly altered its facilities management approach in the wake of a 2001 report by NAPA. NAPA's report highlighted the need for major changes in the Smithsonian's facilities management practices to help address problems with its facilities, and the report included a number of recommendations. In March 2001, before NAPA issued its report, the Smithsonian had hired a new director to lead the reorganization of the facilities program. With the leadership of this director, in fiscal year 2004 the Smithsonian reorganized and centralized its facilities program under the OFEO, a new, flatter facilities management organization. OFEO assumed responsibility for all facility-related programs and budgets for the

<sup>12</sup>In October 1995, the President signed Executive Order 12977 to establish ISC, which is chaired by the Department of Homeland Security and has representation from all of the major federal real property holding agencies. ISC has three primary security responsibilities for nonmilitary activities: (1) establish policies for security in and protection of federal facilities; (2) develop and evaluate security standards for federal facilities, develop a strategy for ensuring compliance with such standards, and oversee the implementation of appropriate security measures in federal facilities; and (3) take such actions as may be necessary to enhance the quality and effectiveness of security and protection of federal facilities.

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Smithsonian. OFEO consists of six offices responsible for different areas of facilities management.<sup>13</sup> One of these, OPS, is responsible for operating programs for security management at Smithsonian facilities. All OFEO offices report directly to the OFEO director and are funded through one budget. OFEO received its first realigned budget in fiscal year 2004.<sup>14</sup> In our 2005 report, we found that the Smithsonian had implemented the majority of NAPA's recommendations.

Although the Smithsonian is a trust instrumentality with a private endowment, it is largely funded by federal appropriations. In fiscal year 2006, the Smithsonian's operating revenues were about \$947 million, of which about 65 percent were from federal appropriations. As shown in figure 4, the Smithsonian's federal appropriations are divided into two categories, both of which include some facilities-related funds. The facilities capital appropriation, which was about \$98.5 million in fiscal year 2006, provides funds for construction and revitalization projects. The salaries and expenses appropriation, which was about \$516.6 million in fiscal year 2006, includes funding for the program activities of each museum and research center; rents; utilities; and facilities' operations, maintenance, and security costs.

The remaining 29 percent of the Smithsonian's operating revenues in fiscal year 2006 was from its private trust funds (private funds), which are also divided into two categories: restricted and unrestricted. Restricted trust funds include such items as gifts from individuals and corporations that specify the purpose of the funds. Generally, restricted funds support a particular exhibit or program, or are used to manage the collections or support research projects. Restricted funds have also been provided for some facilities' construction and enhancements related to revitalization projects. Unrestricted trust funds include income from investment earnings and net proceeds from business activities, and can be used to

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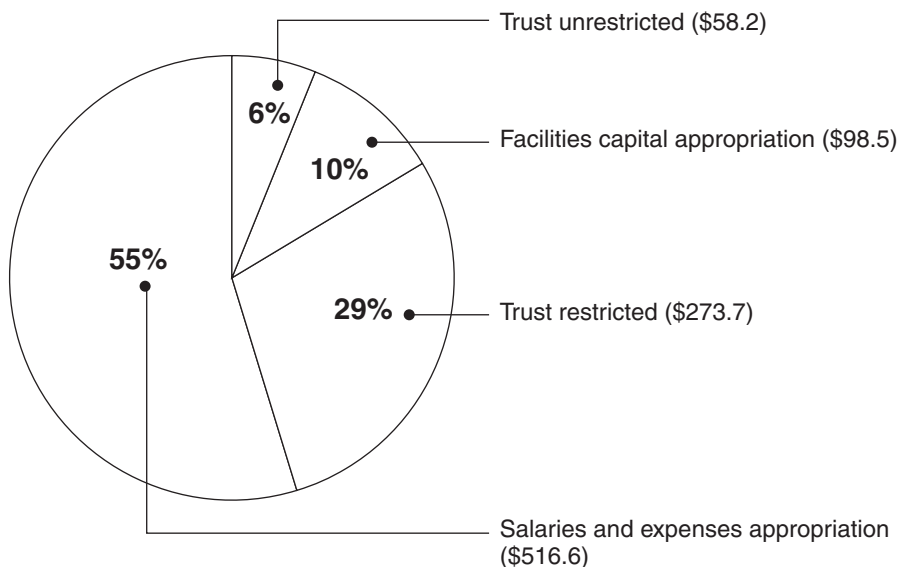
<sup>13</sup>The Office of Facilities Engineering and Operations (OFEO) consists of six offices, including Planning and Project Management; Engineering, Design, and Construction; Facilities Management and Reliability; Protection Services; Safety, Health and Environmental Management; and Smithsonian Tropical Research Institute Facilities Operations.

<sup>14</sup>According to Smithsonian officials, for fiscal year 2004, the Smithsonian's budget justification to Congress was realigned to accommodate facilities integration from the museums, other facilities, and the National Zoo, as well as to reorganize the resources into the categories of facilities maintenance, facilities operations, security and support, and facilities capital.

support any Smithsonian activity. The Smithsonian typically has used unrestricted trust funds, which in 2006 represented 6 percent of the Smithsonian's total operating income, for fundraising, some salary costs, and central administration costs. Although the Smithsonian can use unrestricted trust funds for any purpose consistent with the Smithsonian Trust and therefore could use them for facilities revitalization and maintenance, it has not done so. Smithsonian officials stated that the unrestricted trust fund budget is small and that if these salary and central administration costs were not paid for with unrestricted trust funds, the Smithsonian would have to use federal funds or eliminate positions or programs to cover these expenses.

**Figure 4: Smithsonian Institution Operating Revenue, Fiscal Year 2006**

Dollars in millions



Source: GAO analysis of Smithsonian Institution data.

In June 2007, at the request of the Board of Regents, a committee called the Independent Review Committee (IRC) issued a report of its examination of the former Smithsonian secretary's compensation and expenses and related board governance. The report found that private funds raised annually from donors declined over the former secretary's tenure, from January 2000 through March 2007. In addition, the IRC found that business revenue also dropped during the former secretary's tenure, while funds from federal appropriations and governmental grants

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increased more than 60 percent. As a result, the IRC concluded that the Smithsonian became more dependent on federal funds during the former secretary's tenure.<sup>15</sup> Also in June 2007, the Board of Regents' Governance Committee issued a report and recommendations to strengthen the Board of Regents' oversight of the Smithsonian. One of several recommendations to the Board of Regents was that its ad-hoc Committee on Facilities Revitalization should become a standing committee in order to underscore the Board of Regents' commitment to resolving the Smithsonian's April 2005 estimate of \$2.3 billion for facilities projects.

While Congress has authorized major new museums and facilities, Congress has moved away from fully funding the construction of these facilities beginning in 1982. At that time, Congress authorized \$36.5 million for the construction of the Museum of African Art and a Center for Eastern Art<sup>16</sup> and required that the Smithsonian pay for the balance of the project with other funds. In 1989, Congress required that not more than two-thirds of the total cost of the Museum of the American Indian come from federal appropriations. More recently, in 2003, Congress also required that 50 percent of the cost to construct the Museum of African American History and Culture come from nonfederal sources and the other 50 percent from federal appropriations.

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<sup>15</sup>According to Smithsonian officials, the Smithsonian disputes the IRC report's finding that overall private fund-raising declined during the former secretary's tenure.

<sup>16</sup>The legislation authorizing the construction of the National Museum of African Art referred to a center for Eastern art or studies. See 20 U.S.C. § 50 note. The Smithsonian Quadrangle complex houses the National Museum of African Art, the Arthur M. Sackler Gallery, S. Dillon Ripley Center, an auditorium, offices, and the Enid A. Haupt Garden. On July 28, 1982, the Smithsonian entered into an agreement to name the western half of the Quadrangle complex the Arthur M. Sackler Gallery, which was to be dedicated to Eastern Art.

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## Despite Some Improvements, Deteriorating Facilities Have Caused Further Problems, and Cost Estimate for Facilities Projects Has Increased

The Smithsonian has improved the condition of a number of facilities since our 2005 report, such as the revitalization of the Reynolds Center and parts of the National Zoo. However, problems with the Smithsonian's facilities since 2005 have continued to cause access restrictions and damage, and continue to threaten collections. Moreover, many long-term facilities problems remain. According to Smithsonian officials, repairs to some of these problems are scheduled over the next several years. At the same time, the Smithsonian's cost estimate for facilities projects through fiscal year 2013 has increased since April 2005, from \$2.3 billion to \$2.5 billion for the same time period.

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## The Smithsonian Improved the Condition of a Number of Facilities Since 2005

Since our 2005 report, the Smithsonian has improved the condition of a number of its facilities through revitalization, construction, and repair efforts. For example, it completed a \$238 million revitalization of the Reynolds Center, which houses the American Art Museum and the Portrait Gallery. These museums were reopened to the public in July 2006. The revitalization included upgrading the building's systems, such as heating, ventilation, and air conditioning, electrical, and plumbing, and adding life and safety upgrades. It also included a historical renovation of the building. As part of this renovation, for example, ruined encausted tiles on one floor were replaced with new tiles matching the original tiles, and a skylight that had been covered over for many years was opened up and restored. The renovation, which, according to Smithsonian officials, made 60,000 square feet of building space previously used for storage or staff functions available for public use, also included several upgrades to the building's original space—such as a conservation center and an auditorium—that were paid for with private funds. In addition, the Smithsonian completed the revitalization of one section of the National Zoo (the Fujifilm Giant Panda Habitat and Asia Trail) in October 2006 and is in the process of further revitalizations at the National Zoo as well as major revitalizations at the National Museum of American History Kenneth E. Behring Center (Museum of American History), which is currently closed for revitalization, and the Museum of Natural History.

In addition, the Smithsonian completed construction of a new storage facility known as Pod 5, which is located at the Museum Support Center at the Suitland, Maryland, campus. Pod 5 was built to provide a fire-code-compliant space to store and conduct research on alcohol-preserved specimens of the Museum of Natural History, many of which are currently stored within the museum building on the National Mall in Washington,



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D.C., in spaces that do not meet fire-code standards. Construction was completed in April 2007, and according to Smithsonian officials, collections are scheduled to be moved to Pod 5 over the next 2 years.

The Smithsonian also made some improvements to facilities since 2005 through repairs. For example, according to the director of the Freer Gallery of Art and Arthur M. Sackler Gallery (Freer and Sackler Galleries), some external leaks along the perimeter of the Sackler Gallery have been eliminated by the installation of copper flashing.

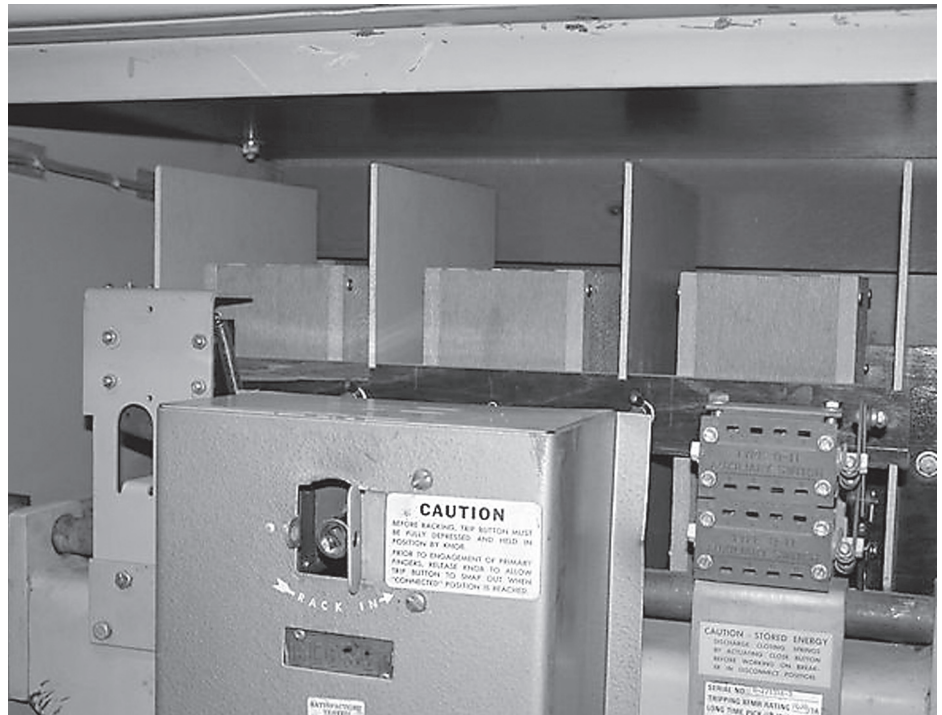
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### Problems with the Smithsonian's Facilities Since 2005 Have Caused Access Restrictions and Damage, and Continue to Threaten Collections

Despite the progress the Smithsonian has made in improving a number of its facilities since our 2005 report, the continued deterioration of many facilities has caused further access restrictions and damage, and continues to seriously threaten collections. According to Smithsonian officials, repairs to some of the following problems are scheduled to take place over the next several years. For example, the electrical systems at the Air and Space Museum are scheduled to be replaced in fiscal years 2007 through 2010. Access restrictions and damage caused by facilities' conditions include the following:

- Power capacity issues caused by inadequate electrical systems have forced the Air and Space Museum to occasionally close galleries to visitors, according to the museum's director. The electrical systems at the Air and Space museum were installed in 1975 and are obsolete and at the end of their useful life. Complete replacement is needed to avoid outages from equipment failure (see fig. 5).

**Figure 5: Obsolete Electrical Systems at the National Air and Space Museum**



Source: Smithsonian Institution.

- Recurring leaks in a Museum of African Art gallery that held an exhibit called Art of the Personal Object forced the museum to temporarily close the gallery several times from 2004 through 2006 and take down part of the exhibit's collections until the leaks were repaired, according to the museum's director. Smithsonian officials noted that addressing such leaks is a regular maintenance issue.
- Chronic leaks in the roof of the Cultural Resources Center at Suitland, Maryland, which was completed in 1998 and opened in 1999 to hold collections of the Museum of the American Indian, have forced staff to place plastic over several shelving units used to store collections, such as a set of wooden boats that includes an Eskimo kayak from Greenland and a rare Yahgan dugout canoe from Tierra del Fuego, according to officials at this facility (see fig. 6).<sup>17</sup> The plastic sheeting limits visitors' visual

<sup>17</sup>In addition to significant collections from the United States, the Museum of the American Indian's collection also contains items from throughout the Western Hemisphere.

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access to the boats during open houses, which provide Native Americans and other groups with access to the collections. One museum official stated that it was also an embarrassment during open houses to have to explain that a roof leak threatens collections. According to Smithsonian officials, the building's roof is a spiral shape constructed with copper plate and compositional panels soldered together. However, the soldered joints on this complex roof design were not constructed well by the subcontractor responsible for building the roof. According to a Smithsonian official, the Smithsonian has worked with the company identified by the roofing manufacturer to assume the warranty for the roof to make repairs. While some of the costs to repair the roof were covered by warranty, others were not and were paid for by the Smithsonian.

**Figure 6: Plastic Sheeting Covering Native American Boats to Prevent Water Damage at the Smithsonian Institution's Cultural Resources Center**



Source: Smithsonian Institution.

- A lack of temperature and humidity control at the Museum of Air and Space's collection storage facilities in Suitland, Maryland, which have large doors that do not seal and let in rain, has caused corrosion to historic airplanes and other collections and increased the cost of restoring these items for exhibit, according to museum officials.

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In addition, two museum and facility directors told us of alarming “near misses”—events related to inadequate facilities that could have been catastrophic to collections had they occurred at different times. According to Sackler Gallery officials, in October 2006, a major leak unexpectedly occurred in a holding area used by the museum to store exhibits on loan three weeks before \$500 million worth of art arrived to be held there. If the leak had occurred while the art was being stored in this space, the art could have been destroyed. The leak was caused by ongoing problems with the steam system used to provide humidification to the Quadrangle complex, known as the condensate system. Problems with this system—which the gallery shares with the other facilities that make up the Quadrangle, including the Museum of African Art—have caused unpredictable leaks throughout the complex since 1993, continually threatening collections.<sup>18</sup> Museum officials stated that staff must routinely spend time each morning searching for new leaks in order to move or cover collections to keep them safe—time that could be used for programmatic efforts—and several officials emphasized they have been lucky to avoid major damage to the collections thus far. (See fig. 7.)

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<sup>18</sup>In this condensate system, steam is piped to humidifiers located throughout the Quadrangle complex, which inject the steam into the air flow to provide humidification. However, when these pipes periodically clog up with metallic sediment, the steam turns into water and leaks through pipe joints.

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**Figure 7: Plastic Sheeting Protecting Collection Items from Water Damage in a Storage Area of the Smithsonian Institution's Quadrangle Complex**



Source: Smithsonian Institution.

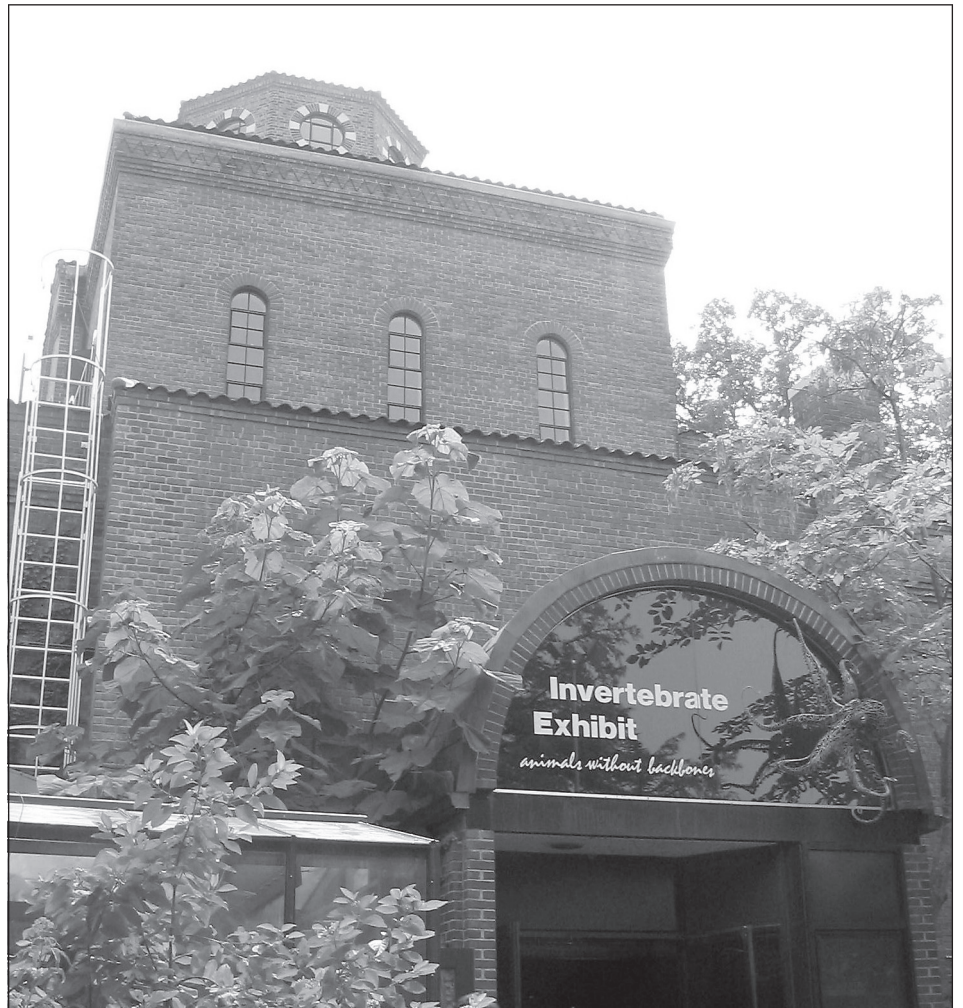
In addition, the director of the National Zoo stated that because of inadequate fire protection in the zoo's invertebrate house, a fire in this building in 2006 did not set off a smoke alarm and could have burned down the entire building—which also includes the reptile discovery center. (See fig. 8.) The fire occurred during work hours and was quickly put out by staff, but the director stated that the incident alerted him to the potentially disastrous consequences of a fire at the National Zoo to facilities and the animals living in them. Moreover, the director stated that inadequate fire protection systems throughout much of the National Zoo threaten the zoo's collections overall. For example, most buildings do not have sprinklers, some fire hydrants do not have enough water pressure for sprinkler systems that are in place, and the zoo has no smoke evacuation systems designed to remove smoke from a building in the case of a fire to prevent the death of people or animals from smoke inhalation. The director stated that until the zoo's fire protection systems are upgraded,



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there is the potential that a fire could cause devastation similar to a 1995 fire at the Philadelphia Zoo's primate house, which destroyed the building and killed 23 animals.

**Figure 8: The National Zoo's Invertebrate House, Located at the Back of the Reptile Discovery Center**



Source: GAO.

Similar problems at other Smithsonian facilities also threaten staff and collections. For example, the director of the Freer and Sackler Galleries stated that the Freer Gallery has also had leaks caused by problems with its condensate system. In addition, according to the Director of the Smithsonian Environmental Research Center, temporary trailers that have

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been in place at the center for 3 to 35 years are degrading and do not have fire suppression systems for life safety. At one point, the floor fell out of a trailer due to decay, and the collections landed on the ground; in other trailers, hallway floors have fallen through.

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### Many Long-Term Facilities Problems Remain

Other long-term facilities issues have caused additional problems for the Smithsonian since 2005, including increasing the Smithsonian's energy consumption and reducing its ability to carry out its mission. Ongoing problems with facilities' conditions that museum directors described to us include the following:

- The Hirshhorn Museum and Sculpture Garden's building is not well insulated and is the Smithsonian's largest (on a per-square-foot basis) consumer of energy; in addition, its façade is leaking in places.
- The National Zoo is currently unable to provide many of its animals with the state-of-the-art habitats required to meet the zoo's goal of providing the highest quality animal care. Many of the zoo's animal areas and facilities are in relatively poor condition. For example, some of the zoo's facilities, including the bird house, small mammals house, and the reptile house, were built in the 1920s, while others, including the lion and tiger area and the ape house, were built in the 1960s. Many of these facilities do not meet current code requirements (buildings are brought up to code at the time they are renovated) and have many failing systems. (See fig. 9.)

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**Figure 9: Ape House Exhibit at the National Zoo**



Source: Smithsonian Institution.

- In addition, according to officials at the National Zoo, the zoo's sea lion and seal pools have major leaks the zoo has not been able to fix without overhauling these exhibits. In January 2007, average daily water loss from these two pools was 140,000 gallons, and the lost water flowed into the Washington, D.C., sewer system. According to these officials, preliminary site investigation of the pool indicated that while the structures themselves appeared sound, the source of most of the water loss was a result of the old underground supply and return piping. Temporary supply lines were installed, and it appeared that the amount of water loss in the seal pool was greatly decreased, reducing the average daily water loss from the two pools to 110,000 gallons as of July 2007, with a replacement cost of approximately \$297,000. A camera scoping system was being used to identify where to make temporary repairs to the sea lion pool. (See fig 10.)



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**Figure 10: Sea Lion Pool at the National Zoo**



Source: GAO.

- The Director of the Museum of African Art stated that leaks in a skylight since 2005 have at times forced the museum to cover the skylight with plastic to protect the building and its collections (see fig. 11). The Director stated that the skylights have leaked for many years, were repaired in 2004, and started leaking again in 2005. In addition, according to the Director, in 2006, leaks in the roof membrane of the pavilion by the main visitor entrance forced the museum to put up plastic around the entrance and remove art objects from the area, reducing the visual appeal of the museum's entrance.

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**Figure 11: Leaking Skylight over the Museum of African Art**



Source: Smithsonian Institution.

The Smithsonian's collections storage, conservation, and research facilities located in Suitland, Maryland, have many significant long-term problems. These facilities not only hold collections but also are actively used by Smithsonian staff and outside researchers for conservation and research. For example, according to the Director of the Museum Conservation Institute, which is the Smithsonian's center for advanced scientific study of the care of museum collections, the institute's facility has leaks, an inadequate electrical supply, inadequate air handling, and a general lack of office and lab space that makes it more difficult for the institute to carry out its research and conservation work. The Museum Support Center, which contains storage pods, research labs, and administrative space, has inadequate air handlers for the pods that need replacing, and some of the labs lack necessary equipment. For example, a lab that belongs to the Museum of American History was temporarily turned over to the American Art Museum while the Reynolds Center was being revitalized. This museum stripped out existing exhaust hoods because it did not need that type of equipment for the conservation work it was doing in the lab. The lab has now been turned back over to the Museum of American History, but funds are lacking to reinstall the

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exhaust hoods, limiting the lab's usefulness as staff prepare new exhibits for the museum's reopening after its current revitalization. Furthermore, a greenhouse at Suitland that is used for botany research is no longer fully enclosed, as several large glass panes have slipped from their frames, leaving open spaces that allow conditioned air to escape, increasing energy costs, and reducing the Smithsonian's ability to maintain the optimal environment for the plants being studied.

According to Smithsonian officials, repairs to some of the major problems with its facilities are scheduled to take place over the next several years. For example, the electrical systems at the Air and Space Museum are scheduled to be replaced in fiscal years 2007 through 2010, a contract was recently awarded to address the problems with the condensate system at the Quadrangle complex, and the Smithsonian's capital plan includes projects intended to address the fire protection problems at the National Zoo in fiscal years 2008 through 2010 and to design and renew systems at the seal and sea lion exhibit in fiscal years 2008 and 2009.

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### The Smithsonian's Estimated Cost for Facilities Projects through Fiscal Year 2013 Has Increased Since 2005

As of March 2007, the Smithsonian estimates it will need about \$2.5 billion for revitalization, construction, and maintenance projects identified from fiscal year 2005 through fiscal year 2013, an increase of about \$200 million from its April 2005 estimate of about \$2.3 billion for the same time period. The Smithsonian's estimated revitalization and new construction costs are driven in part by the need to modernize or add systems, such as fire detection and alarm and security systems, and to comply with newer life safety code requirements, such as those for handicapped accessibility to buildings and restrooms. Maintenance costs include staff costs, minor repair and maintenance projects, and other contracts, supplies, materials, and equipment for Smithsonian's maintenance program. Smithsonian officials stated that to update its 2005 estimate, they identified changes that had occurred to the project cost figures used in the 2005 estimate and then subtracted from the new total the appropriations the Smithsonian had received for facilities revitalization, construction, and maintenance projects for fiscal years 2005 through 2007.

According to Smithsonian officials, this estimate includes only costs for which the Smithsonian expects to receive federal funds. Projects that have been or are expected to be funded through the Smithsonian's private trust funds were not included, although the Smithsonian has used trust funds to

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support some facilities projects. For example, the construction of Udvar-Hazy Center Phase I was funded through trust funds.<sup>19</sup> According to Smithsonian officials, maintenance projects are not generally funded through trust funds.<sup>20</sup>

The increase in the Smithsonian's cost estimate for revitalization, construction, and maintenance projects through fiscal year 2013 from about \$2.3 billion in our April 2005 report to about \$2.5 billion as of March 2007 was due to several factors, according to Smithsonian officials. For example, Smithsonian officials said that major increases had occurred in projects for the National Zoo and the Museum of American History because the two facilities had recently developed master plans that identified additional requirements.<sup>21</sup> In addition, according to Smithsonian officials, estimates for antiterrorism projects had increased due to adjustments for higher costs for security-related projects at the Air and Space Museum. According to Smithsonian officials, the increase also reflects the effect of delaying corrective work in terms of additional damage and escalation in construction costs.

According to Smithsonian officials, the Smithsonian's March 2007 estimate of about \$2.5 billion could also increase, as the April 2005 estimate of about \$2.3 billion was largely based on preliminary assessments, and therefore, as Smithsonian completes more master plans, more items will be identified that need to be done. Moreover, this estimate does not

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<sup>19</sup>The law that authorized the National Air and Space Museum Stephen F Udvar-Hazy Center provided that no appropriated funds could be used to pay for construction expenses. See 20 U.S.C. § 77 note.

<sup>20</sup>According to Smithsonian officials, a small amount of unrestricted trust funds have been used towards the salaries of some facilities' maintenance managers. According to Smithsonian officials, restricted trust funds have not been available for maintenance, as donors are not interested in giving money towards facilities' maintenance and do not donate funds for this purpose. The Smithsonian recently commissioned a benchmarking survey on fund-raising for facilities; all 12 respondents to the survey reported that efforts to secure support for deferred maintenance have been unsuccessful, except when embedded in programmatic improvements.

<sup>21</sup>A master plan is a proposal of a comprehensive renovation or expansion of a complex that aligns the physical plant with the organization's strategic goals. It includes proposals to make the complex conform to current codes and meet technology and security requirements. This process can also involve upgrading and replacing major building systems, including the electrical, plumbing, fire suppression, and heating and air conditioning systems; reinforcing the complex's structural integrity; and removing asbestos. Master plans also identify changes in building use and expansion requirements to meet mission needs.

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include the estimated cost of constructing the Museum of African American History and Culture, which was authorized by Congress in 2003 and which the Smithsonian notionally estimates may cost about \$500 million—half of which is to be funded by federal appropriations.

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## The Smithsonian Follows Many Key Security Practices to Protect Its Assets but Faces Communication and Funding Challenges

The Smithsonian follows key security practices to protect its assets but faces significant challenges ensuring that museum and facility directors are aware of important security information. Moreover, due to funding constraints, Smithsonian officials and some museum and facility directors cited an insufficient number of security officers to protect assets.

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### The Smithsonian Follows Key Security Practices

We found that the Smithsonian follows key security practices we have defined in prior work. For example, in order to allocate resources more effectively to manage risk, in 2004, the Smithsonian contracted for an all-hazards risk assessment report. This report, which includes individual assessments for over 30 Smithsonian facilities, was completed in 2005.<sup>22</sup> These assessments identify the primary risks to each facility and also describe the key observed vulnerabilities and risks, as well as the key risk reduction and mitigation recommendations proposed for each facility in order to help the Smithsonian effectively prioritize security projects. As a supplement to this report, in the spring of 2006, the contractor completed a strategy that included specific recommendations on how to use the Smithsonian's capital and maintenance funds to implement future security projects and operational changes aimed at reducing the risk for Smithsonian facilities.

In another example, the Smithsonian leverages security technology to protect its assets by using technologies such as perimeter vehicle barriers, closed circuit television cameras (CCTV), emergency voice systems, window blast film, and electronic screening of visitors and mail. According

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<sup>22</sup>According to Smithsonian officials, OPS consulted with the Federal Emergency Management Agency (FEMA) on the methodologies and consultants to use for the 2005 all-hazards risk assessment report. For a methodology, FEMA recommended its Risk Management Series Publication 452. For consultants, FEMA recommended the entity used to create the FEMA 452 Publication.

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to a Smithsonian official, the technologies used for its physical security plan—which primarily consists of two separate programs for mitigating the risks to the Smithsonian’s staff, visitors, collection and facilities—allows OPS to extend the capabilities of security staff and to improve facility security. For more information on the Smithsonian’s following of key security practices, see appendix II.

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### The Smithsonian Faces Challenges in Ensuring That Museum and Facility Directors Are Aware of Important Security Information

Although the Smithsonian follows many key security practices, many museum and facility directors we spoke to stated that they lacked information on key security measures. For example, although OPS sent a notification letter with the relevant section of the all-hazards risk assessment report to museum and facility directors in late 2006, nine museum and facility directors we spoke with told us they were unaware of the results of this report for their facility and had not seen or been briefed on this report. In contrast, five museum and facility directors stated that they were aware of this report. OPS is responsible for security at the Smithsonian’s museums and facilities. However, the lack of awareness of some museum and facility directors about the all-hazards risk assessment report limits their ability to work with OPS to identify, monitor, and respond to changes in the security environment of their facilities.

In addition, many museum and facility directors stated that they did not always receive useful information from OPS regarding security officer staffing levels and other security decisions. For example, although security officer staffing levels at museums and facilities can vary on a daily basis due to attrition, absences, and OPS temporarily moving security officers from one facility to another to address needs with available staff, many museum and facility directors stated that on any given day, they do not know how many security officers will show up at their facility—information needed to oversee mitigation efforts and manage security. These museum and facility directors stated that knowing the security staff level at their museums is important for several reasons, such as knowing which galleries do not have sufficient protection from vandalism and limiting response time to emergencies. For example, one director stated he once went to report an emergency to a security officer at an established post. However, when he got to the post, the security officer was absent, and the director had to search for an alternate security officer. The director stated that had he known that security officer levels were down that day, he could have directly reported this emergency to a post where he knew an officer was on duty, which would have reduced the emergency response time.

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Also, some museum and facility directors stated that they do not know when security upgrades are being installed at their facilities. According to one museum director, about 1 year ago, contractors working for OPS arrived at the museum without any prior communication with the museum staff—including the museum’s director or the assistant director of protection services—to begin work installing a key card access system. Staff were not supplied with key cards or trained in the use of the new system; as a result, once the system was installed, they were denied access to critical areas of the building, such as offices and collection storage areas.

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**Due to Funding Constraints, Some Museum and Facility Directors Cite Insufficient Number of Security Staff to Protect Assets**

Funding constraints have also been a challenge to the Smithsonian’s security efforts, according to museum and facility directors, some of whom stated that, in the absence of more security officers, some cases of vandalism and theft have occurred. According to OPS, 35 cases of vandalism were reported from January 2005 through August 2007. OPS officials stated that funding constraints have affected its ability to retain and recruit security officers. Following September 11, 2001, the Smithsonian’s security costs significantly increased as a result of the mitigation recommendations of the 2002 Composite Risk Assessment.

The Smithsonian’s security efforts are funded entirely through federal funds.<sup>23</sup> Smithsonian obligations for security have increased since September 11, 2001—from \$37 million in 2001 to a high of \$67 million in 2006—but certain needs have gone unaddressed. For example, since 1999, the Smithsonian has identified \$31.3 million in projects for its security system modernization program—which involves upgrading and integrating security capabilities across the organization—and thus far has received \$17.6 million to complete security upgrades, such as CCTV and key card access systems. As a result, the Smithsonian has implemented some of these security systems upgrades at some facilities, but other facilities have not yet received the necessary funds to do so. Furthermore, the Smithsonian is still working on implementing blast and perimeter security projects, which were mitigation recommendations from its all-hazards risk assessment report. Completion of these projects depends on the

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<sup>23</sup>According to Smithsonian officials, it is the position of the Smithsonian that the security of facilities is a federal responsibility, based on an historical understanding as well as accepted practice among federal entities. While Congress does appropriate funds every year for security expenses, the Smithsonian could raise additional revenue or use unrestricted trust funds for its security expenses.

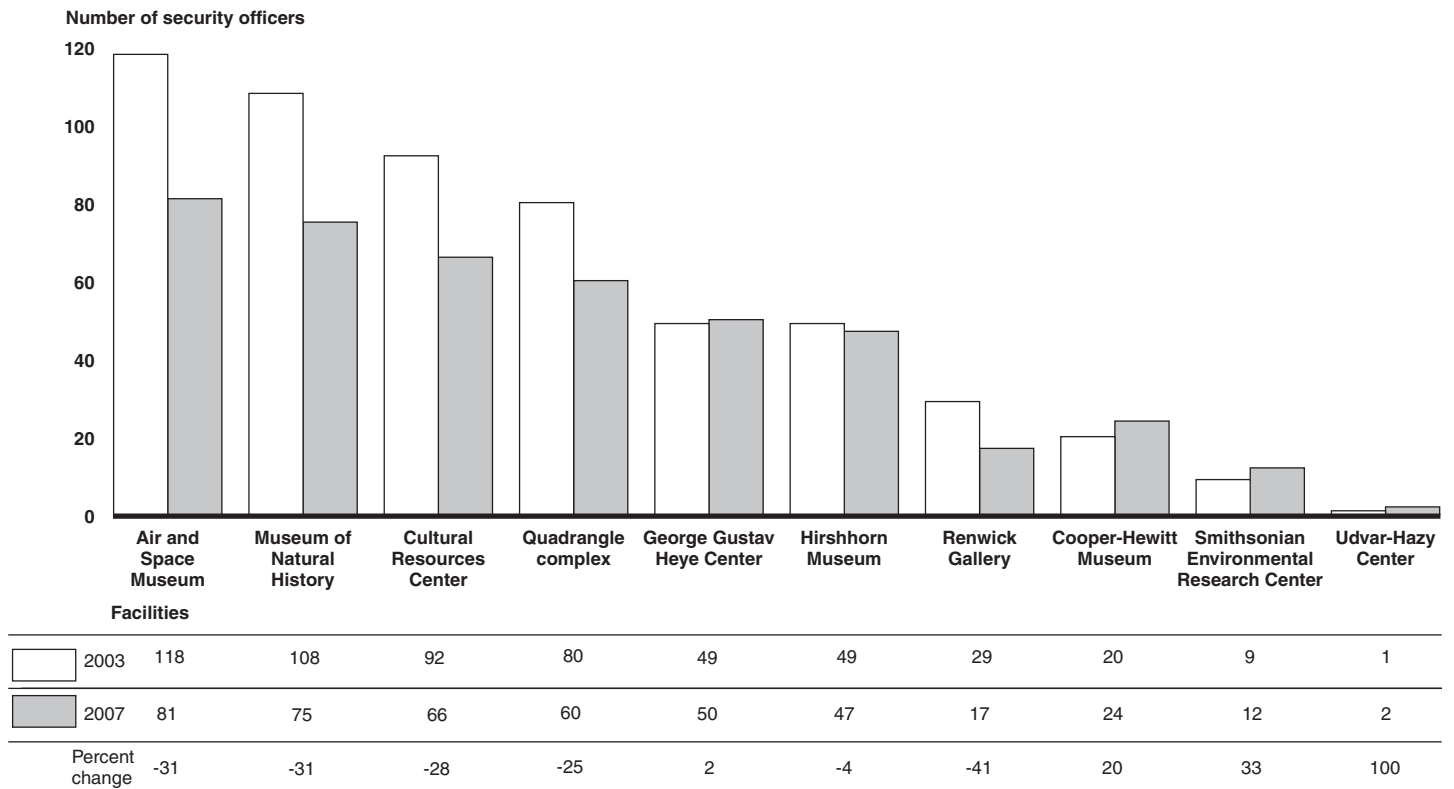
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availability of funds. Smithsonian officials noted that security projects compete with maintenance needs for facilities' funds. Therefore, the limited overall funds for these issues force a balancing of priorities in both areas, sometimes against one another.

In addition, the number of Smithsonian security officers has been reduced steadily since May 2003, even as the Smithsonian's square footage has increased due to new museums being opened. As a result, there have been fewer officers and other security staff to cover more space. For example, from May 2003 to May 2007, 6 out of 10 museums and facilities for which the Smithsonian provided data experienced a reduction in the number of security officers assigned to the facility; the reductions ranged from 4 percent to 41 percent (see fig. 12). Smithsonian officials noted that some museums experienced a decrease in visitation during some of these years, and that OPS increased the use of technological security equipment, such as alarms and cameras, during this time.



**Figure 12: Security Officer Levels at Smithsonian Institution Museums and Facilities, 2003 Compared with 2007**



Source: GAO analysis of Smithsonian Institution data.

Note: Based on the data provided by the Smithsonian, we could compare 2003 levels to 2007 levels only for these 10 museums because some museums were closed or opened between 2003 and 2007. For example, the Museum of American History was closed for renovation in 2006 and will reopen in the summer of 2008; therefore, its security staff was reduced from 2003 levels. The Museum of the American Indian opened to the public in 2004. In addition, the National Air and Space Museum Stephen F. Udvar-Hazy Center Phase I has contract security officers overseen by two OPS officers.

Five of the 10 Smithsonian facilities shown in figure 12 experienced security officer reductions of 25 percent or more. For example, the Smithsonian American Art Museum’s Renwick Gallery experienced a 41 percent reduction in security officers since 2003. In addition, the security officer levels decreased significantly at both the Smithsonian Quadrangle (25 percent) and the Cultural Resources Center (28 percent). Some of the Smithsonian’s most visited and largest facilities have experienced the greatest reductions in security officers. The Air and Space Museum, which contains 663,170 square feet, and the Museum of Natural

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History, which contains 1.98 million square feet, both experienced a 31 percent reduction in security officers in 2007 compared with 2003.

Additionally, attendance has increased recently at many of the museums, intensifying the demands on the reduced security staff. Moreover, these reductions in the numbers of security staff at museums and facilities occurred even though the Smithsonian had one or more facilities closed for renovations during this time, and OPS assigned some security officers from the closed facility to other facilities. In the future, when the Smithsonian has all of its facilities open, the need for security officers will increase. For example, the Museum of American History currently is closed to the public; as a result, 28 of its security officers are temporarily reassigned to various museums. Smithsonian officials stated that when the Museum of American History reopens, those 28 officers will return to the Museum of American History, leading to vacancies at the Museum of the American Indian and the Portrait Gallery.

All museum and facility directors we spoke with stated that the security officer levels at their facilities are inadequate. Some museum and facility directors stated that some of the galleries that used to have several security officers have been reduced to sharing one security officer with other galleries, resulting in too much square footage having to be protected by one officer. Another facility director stated that security alarms go off frequently and that a security officer is not available to check the validity of the alarm because the facility does not have an adequate amount of security officers. Moreover, one museum did not have enough security officers for 2 days to staff the museum's main entrance, resulting in the main entrance being closed. The museum was still open to the public through the lower-level staff entrance; however, the director of this facility stated that the closed main entrance deterred many people from entering. Also, museum and facility directors at other facilities stated they have strongly considered temporarily closing galleries due to an inadequate level of security officers needed to properly protect collections. Lastly, two museum directors stated that it has become more difficult for them to acquire collections on loan because lenders have expressed concern with the lack of protection.

Some of the Smithsonian's museum directors stated that insufficient numbers of security officers contributed to some cases of vandalism and theft. For example, one museum director stated that on or before November 2006, several mammalian fossils were stolen from an exhibit, and damage to dinosaur exhibits has periodically occurred from visitors throwing water bottles and other objects at them. Three other museum

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directors stated that their museums have experienced increased rates of vandalism due to the lack of security officers patrolling the galleries. At one museum, for example, an object that resembles a telephone booth was continually vandalized by visitors who would write on the exhibit. The vandalism stopped when the museum convinced OPS to install a camera near the object. In the same museum, visitors have in some instances spit on or kissed a few pieces of artwork in the building. According to an OPS official, the Smithsonian started a new program in the summer of 2007, in which college students were hired as gallery attendants. The program places gallery attendants in exhibits that cannot be manned by security guards. The gallery attendants do not wear uniforms or fulfill any security officer duties; however, they wear uniform polo shirts so they are easily recognizable by the public and serve as additional eyes and ears for the security officers.

In addition to having insufficient numbers of security officers, according to a Smithsonian official, funding constraints have affected the Smithsonian's ability to recruit and retain security officers, who are able to find higher paying jobs at other federal agencies. According to Smithsonian officials, officer attrition has increased every year since 2003. Smithsonian officials stated that after they invest in the training of their security officers, many of them leave for federal agencies, such as the Department of Defense, that can hire officers at a higher pay grade. The Smithsonian's experience is not unique: as we reported in 2003, more than 300 federal law enforcement officers in the Washington, D.C., area left their jobs to join the Transportation Security Administration during fiscal 2002, which was able to offer air marshal recruits higher compensation and more flexible benefit packages than many other federal police forces.<sup>24</sup> After September 11, 2001, the Smithsonian attempted to address this problem by increasing its entry level security officer pay grade from a General Schedule-4 to General Schedule-5. However, according to Smithsonian officials, this pay grade increase has been insufficient to compete with other agencies and localities. OPS submitted a request through its budget process to upgrade all entry level security officers to a General Schedule-6 pay grade starting in fiscal year 2004, but the request was denied by Smithsonian management due to inadequate funds in the Smithsonian budget and higher internal budget priorities.

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<sup>24</sup>GAO, *Federal Law Enforcement: Selected Issues in Human Capital Management*, [GAO-03-1034T](#) (Washington D.C.: July 23, 2003).

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## The Smithsonian Has Taken Steps to Improve Real Property Portfolio Management but Faces Challenges Related to Funding Constraints and Its Capital Plan

Faced with deteriorating facilities and an increased cost estimate for facilities projects, the Smithsonian has taken steps to improve the management of its real property portfolio but faces challenges related to funding constraints and its capital plan. Several factors, such as historic preservation requirements, affect the Smithsonian's efforts to manage its real property portfolio within funding constraints. The Smithsonian has taken steps to improve its real property portfolio management that incorporate the administration's real property guidance. These include improving real property data and developing performance measures on, for example, facility condition and customer satisfaction. In addition, the Smithsonian has taken steps to improve its capital planning process, which is also an important part of real property portfolio management. However, funding constraints have presented considerable challenges, and, while OFEO has worked to justify an increase in federal funding for facilities, the Smithsonian's capital plan omits privately funded projects. Although information on the scope and funding of privately funded projects is provided to stakeholders in other documents, the lack of this information in the capital plan has limited the ability of the Smithsonian and other stakeholders to comprehensively assess the funding and scope of facilities projects.

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## Several Factors Affect the Smithsonian's Real Property Management Efforts

Several factors affect the Smithsonian's efforts to manage its real property portfolio within funding constraints. As previously discussed, the condition of many of the Smithsonian's facilities is deteriorating. In addition, according to Smithsonian officials, many of the Smithsonian's buildings are either historic or signature buildings, which can increase the cost of revitalization or construction projects. Smithsonian officials stated that, by law, the Smithsonian is required to comply with historical preservation requirements and that preserving the historical character of its facilities is in the interest of the public and Congress. Smithsonian officials stated that the National Capital Planning Commission closely monitors the Smithsonian's compliance with historical preservation

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guidance.<sup>25</sup> As such, the Smithsonian's revitalization of historic buildings has included restoring historical elements that have increased the costs of these projects. For example, according to Smithsonian officials, the Reynolds Center revitalization included replacing windows with historically appropriate glass and replacing a ruined tile floor with matching tile that had to be imported from England. OFEO officials stated that they do not consider these decisions to be choices given the legal requirements necessitated by historic preservation laws and regulations.

In addition, according to OFEO officials, when the Smithsonian is mandated by Congress to build new museums, particularly when they are on the National Mall or other prominent locations, the buildings, such as the Museum of the American Indian, are considered signature or landmark buildings and often have architectural elements that require innovative, creative, and sometimes expensive architectural and engineering techniques. This can increase not only the costs and difficulty of constructing these buildings but also the cost and difficulty of maintaining them after construction. However, OFEO officials stated that the Smithsonian strives to fulfill the architect's vision since stakeholders, including Congress and the public, expect these buildings to be landmarks.

Another factor that affects the Smithsonian's efforts to manage its real property portfolio within funding constraints is the number of its facilities. Although the Smithsonian has disposed of a few facilities in recent years, as discussed below, OFEO officials stated that the Smithsonian considers its remaining facilities, in particular its museums and research centers, as central to its mission and, therefore, worthy of care and protection. According to OFEO officials, many Smithsonian units were created by statute or restricted gift, and the Smithsonian is legally limited in the kinds of decisions it can make about some of its facilities. In April 2001, the Smithsonian proposed closing the National Zoo's Conservation and Research Center in Front Royal, Virginia, but this proposal generated

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<sup>25</sup>The National Historic Preservation Act (NHPA) requires federal agencies to consider the effect of their actions on historic properties and to undertake planning and actions necessary to minimize harm to the historic property. The Smithsonian Facilities Authorization Act of 2003, 20 U.S.C. § 75b note, states that in carrying out projects in the District of Columbia that are subject to the review and approval of the National Capital Planning Commission, the Smithsonian Institution shall be deemed to be an agency for purposes of compliance with regulations promulgated by the Advisory Council on Historic Preservation pursuant to section 106 of the NHPA. The standards require owners to maintain the original structure, fabric, and character of the site (both interior and exterior) when making additions or upgrades.

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considerable opposition and was abandoned. In recent years, the Smithsonian's appropriations acts have included language prohibiting the Smithsonian from using federally appropriated funds to close facilities related to existing Smithsonian science programs without the approval by the House and Senate Committees on Appropriations.<sup>26</sup>

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### The Smithsonian Has Taken Steps to Improve Its Real Property Portfolio Management and Incorporate Real Property Guidance

Faced with deteriorating facilities and an increased cost estimate for facilities projects, the Smithsonian has continued to build on efforts to improve its real property portfolio management that started in fiscal year 2001, when it began to centralize its facilities management in response to NAPA's recommendations and its own internal review. In our 2005 report, we found that in reorganizing its facilities management under OFEO, the Smithsonian was incorporating recognized industry best practices so that its resources would go as far as possible toward addressing its rapidly growing revitalization, construction, and maintenance workload. Since then, OFEO has continued some of these efforts as well as implemented new ones. Specifically, OFEO has made significant strides in real property guidance, real property data inventory, maintaining the Smithsonian's real property at the right size and cost, facilities maintenance, and the development and use of performance measures. Many of these steps incorporate the administration's real property guidance.

The Smithsonian's steps to improve its guidance on real property management are consistent with a goal of the real property initiative to systematize agency procedures and actions related to asset management through the development of an asset management plan. Since 2005, OFEO finalized and put into effect its first *Operations and Maintenance Handbook* and revised its *Facilities Project Management Handbook* to streamline and update its content. These handbooks define the Smithsonian's policies and procedures related to their respective subjects, and OFEO officials told us they are in effect throughout the Smithsonian. In addition, the Smithsonian has had a directive on real estate asset management in effect since May 1, 2003, which establishes policy for

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<sup>26</sup>This prohibition was included in the Smithsonian's appropriations acts for fiscal years 2005 and 2006. (Public Law 108-447, 118 Stat. 3089 (2004); Public Law 109-54, 119 Stat. 545 (2005)). The Smithsonian's appropriations acts for fiscal years 2002 through 2004 contained a similar prohibition, except that for these years, approval to close such facilities was required from the Smithsonian's Board of Regents acting on recommendations from the Science Commission rather than from the House and Senate Committees on Appropriations. (Public Law 107-63, 115 Stat. 461 (2001); Public Law 108-7, 117 Stat. 11 (2003); Public Law 108-108, 117 Stat. 1298 (2003)).

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managing real estate assets. It is in the process of revising this directive. According to OFEO officials, OFEO is also developing a real estate management handbook that will articulate the Smithsonian's policies related to real property acquisitions and disposals, among other things. OFEO has also used a space utilization guide it developed in 2003 to standardize the amount of space given to areas such as offices and conference rooms during new construction and new leases, and as it reconfigures space during revitalizations.<sup>27</sup>

The Smithsonian has also recognized the importance of the real property initiative's goal of a complete and accurate inventory of all constructed assets to help with decision making. As part of the real property initiative, the Federal Real Property Council (FRPC) identified and defined 24 data elements that must be captured and reported by the 15 largest federal landholding agencies.<sup>28</sup> Although the Smithsonian is not required to capture or report this data, the Smithsonian has developed a database to do so. As of August, 15, 2007, a majority of the database was complete, and the Smithsonian was continuing to add data to it. For example, 80 percent of the data on the element of size was included in the database, and according to Smithsonian officials, the missing data on size were mostly for outlying and miscellaneous spaces that it will include when reasonably available. Four of the 24 data elements established by the FRPC are performance measures—utilization, condition index, mission dependency, and annual operating and maintenance costs. Smithsonian officials stated that the Smithsonian was currently in the process of inputting the data on condition index, mission dependency, and annual operating and maintenance costs into the database and that it planned to include data on utilization by the end of fiscal year 2008.

OFEO has also taken steps to maintain the Smithsonian's real property inventory at the right size and cost to meet the Smithsonian's mission. For example, although OFEO officials described the Smithsonian's real estate portfolio as stable and said there is little opportunity for disposing of facilities, according to Smithsonian officials, since 2005, OFEO

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<sup>27</sup>OFEO officials stated that they are not attempting to reconfigure spaces that are not being renovated to meet the space guidelines, as this is not a high priority, but that moving forward, renovations of existing space will incorporate these guidelines.

<sup>28</sup>In addition to the performance measures, the 24 data elements include elements designed to identify the property and describe the property's type, use, status, size, value, and restrictions.

spearheaded the disposal of the only three owned buildings that the Smithsonian has disposed of in the past 20 years. According to Smithsonian officials, these disposal decisions were made to eliminate unneeded space or reduce costs, as shown in table 1.

**Table 1: Buildings Disposed of by the Smithsonian Since 2005, Including Elements of Decision and Proceeds, as Described by Smithsonian Officials**

Building and purpose	Key elements of disposal decision	Date and proceeds
Bronx, New York, warehouses used to hold collections for the Museum of the American Indian	No need for these warehouses once these collections were moved to the National Museum of the American Indian and the Conservation Research Center in Suitland, Maryland.	Sold in April 2005, with proceeds of \$11.1 million, which went to the Smithsonian trust and debt related to construction of National Museum of the American Indian.
Victor Building in Penn Quarter area of Washington, D.C., near the National Mall, used for administrative offices	Revitalization of area where building is located had increased the building's value; the Smithsonian determined it could reduce its overall debt by selling, moving many of its offices to more cost-effective real estate, and leasing back two floors.	Sold in November 2005 with proceeds of \$59 million, which went towards relocating occupants to leased space and to the Smithsonian trust. <sup>a</sup>
Cinderbed Road warehouse in Virginia used for collections storage	The Smithsonian determined that the building should be sold for a number of reasons, including its lack of suitability for collections storage and the chance to maximize its underlying monetary value. The property was not fully utilized and more cost-efficient locations were available. As a short-term solution, the Smithsonian leased back 50 percent of the building until it consolidates the collections currently in this warehouse into new leased space, at which point it will vacate the property.	Sold in November 2005 with proceeds of \$8.7 million, which went to the Smithsonian trust.

Source: Smithsonian Institution.

<sup>a</sup>Regarding the proceeds from the Victor building, according to Smithsonian officials, per instruction from the Smithsonian's auditor, the proceeds from this sale were counted as cash in the Smithsonian's short-term portfolio and must be recognized at a rate of \$4 million per year.

OFEO has also taken steps to improve the maintenance of its facilities. In 2005, we reported that OFEO identified and prioritized maintenance projects in conjunction with the museums and other facility groups by taking into account customer input; annual safety, health, and environmental inspections; code and regulatory requirements; and facility assessments. Since that time, it has made its prioritization process for maintenance projects more formal by establishing a 5-year maintenance plan in which maintenance projects are prioritized using the same matrix



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OFEO developed for capital projects.<sup>29</sup> OFEO also has been instituting a maintenance and inspection process called reliability centered maintenance (RCM) in an attempt to maximize the effectiveness of its maintenance resources. This process uses a combination of time-based actions, preventive maintenance, and run-to-failure approaches to reach the most cost-effective approach. OFEO officials stated that as part of this process, they completed an asset inventory and bar coding of all critical equipment and are in the process of inputting this information into a database that will produce work plans associated with each maintainable asset using RCM technology. The goals are that the system will ensure that predictive and preventive maintenance tasks are generated and performed for these assets, will contain historical cost and repair information about these assets, and will track the scheduling and completion of maintenance activities. They stated that the system will provide much more empirical data to make decisions with but that staff will need to be trained and become comfortable with using the system. They expect it to take 1 year before the system's data are fully accurate and useful.

OFEO has also taken significant steps to develop and use performance metrics to monitor the effectiveness of its real property management efforts and help with decision making, which is also highlighted in the real property management initiative. OFEO has developed over 30 metrics that OFEO's director monitors monthly in order to benchmark with other organizations and spot possible problem areas. OFEO's metrics cover capital planning, project management, maintenance, customer satisfaction, worker safety statistics, and other areas. The director of OFEO requires staff to report on these metrics each month; the director then compiles the results and discusses them with Smithsonian leadership at a monthly meeting. According to Smithsonian officials, the monthly results of the metrics are also posted on the Smithsonian's intranet so that stakeholders throughout the institution can stay informed.

Furthermore, OFEO has taken steps to improve its communications with museum and facility directors. OFEO holds regular meetings with museum and other facilities' directors in order to discuss and attempt to resolve

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<sup>29</sup>Under OFEO's prioritization matrix, each project is assigned one of four condition levels (catastrophic, critical, routine, and can defer) and one of five project types (shell/system failure, code compliance/security, nonroutine capital repairs, energy/operational efficiency, and alternations and modifications). This assignment determines the project's priority code, which may be from one (top priority for the budget year in which funding is sought) to five (lowest priority).

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any issues. OFEO also uses customer surveys to elicit feedback on maintenance and repair efforts, and it includes the results of these surveys as one of its metrics. All of the directors of museums and other facilities we spoke with said that OFEO communicates well with them. Several of the directors of museums and other facilities who were not satisfied with OFEO's customer service when we spoke with them for our 2005 report said that OFEO's customer service had improved significantly since then.

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### Smithsonian's Capital Planning Process Incorporates Many Capital Planning Principles

The Smithsonian has also taken steps to improve its real property portfolio management by refining elements of its capital planning process, which incorporates many capital planning principles as defined by our prior work and OMB.<sup>30</sup> According to our prior work, effective capital planning has clear implications for strategic real property management because it can help agencies make the most of limited resources. A number of laws enacted in the 1990s placed increased emphasis on improving capital decision-making practices, and OMB's Capital Programming Guide has attempted to address the government's shortcomings in this area.<sup>31</sup> In recent work, we identified five key capital planning principles contained in our and OMB's guidance. These principles are strategic linkage, needs assessment and gap identification, alternatives evaluation, a review and approval framework with established criteria for selecting capital investments, and a long-term capital investment plan. The Smithsonian's capital planning process incorporates elements of each of these principles.

The Smithsonian's strategic planning and capital planning materials, such as its current strategic plan, performance plan, and annual goals, articulate strategic linkage between the Smithsonian's mission and the Smithsonian's vision for capital planning. Moreover, there is a clear link between the Smithsonian's vision for facilities expressed in these documents and the Smithsonian's 5-year capital plan.

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<sup>30</sup>GAO, *Federal Capital: Three Entities' Implementation of Capital Planning Principles Is Mixed*, [GAO-07-274](#) (Washington, D.C.: Feb. 23, 2007); GAO, *Executive Guide: Leading Practices in Capital Decision-Making*, [GAO/AIMD-99-32](#) (Washington, D.C.: December 1998); OMB, *Capital Programming Guide* (Version 2.0) Supplement to OMB Circular A-11, part 7: *Planning, Budgeting, and Acquisition of Capital Assets* (Washington, D.C., June 2006).

<sup>31</sup>OMB's revisions to Circular A-11 also attempt to address the government's shortcomings in capital planning.

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Regarding needs assessment and gap identification, the Smithsonian's capital planning decision-making process is guided by a comprehensive assessment of facilities' conditions and needs and the identification of performance gaps between current and needed capabilities. This effort to assess needs and identify performance gaps is informed by two processes: facilities condition assessments and master planning. According to OFEO officials, in July 2006, OFEO implemented a new system to conduct condition assessments in order to be able to update its condition assessments for all of its facilities annually. This system includes a visual assessment and rating of the major building systems of each facility to determine the costs of its deferred maintenance. OFEO expects to have assessed all of its facilities under this system by August 2007. In addition, during this process, OFEO has updated the current replacement value of each facility and has found that the aggregate replacement value for Smithsonian facilities is \$4.7 billion.<sup>32</sup> It is also calculating each facility's facility condition index, which is a ratio comparing a facility's current replacement value to its deferred maintenance costs that allows the Smithsonian to objectively compare its facilities to each other and benchmark the condition of its facilities with other facilities in order to assist in prioritization and decision making.

OFEO also uses facilities' master plans to help assess facilities projects and identify gaps between current and needed capabilities. Currently, some of the Smithsonian's owned facilities have ongoing or completed master plans, and the Smithsonian plans to develop master plans for the rest of its owned facilities by fiscal year 2015. Master plans for facilities such as the Museum of American History include information on the current condition of the facility, including deficiencies, a plan for correcting these deficiencies, and a vision for improving the facility's space in order to enhance the facility's ability to meet its mission. According to OFEO officials, when a facility has an ongoing or completed master plan, the master plan informs the development of projects for the Smithsonian's capital plan. According to Smithsonian officials, facilities' master plans also incorporate alternatives evaluation by considering several alternative ways to meet a facility's defined mission.

As we reported in 2005, the Smithsonian's capital planning efforts also include a review and approval framework with established criteria for

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<sup>32</sup>According to Smithsonian officials, this amount is undergoing additional review and may increase following the addition of more buildings to the equation.

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selecting capital investments and a long-term capital investment plan. Each year, OFEO, working with the museums and other facility groups, develops an annual list of new and previously submitted projects, which are prioritized for inclusion in the annual 5-year capital plan using a prioritization matrix previously described in conjunction with the Smithsonian's 5-year maintenance plan. OFEO officials stated that they have refined this process in recent years. For example, according to OFEO officials, the discussions with the museums and research institutes now include the maintenance program as well as the capital program to ensure that all issues in each facility are taken care of in one of the programs. After the capital plan has been revised to reflect any new projects or changes in priorities, the updated capital plan is reviewed by the Smithsonian's Capital Planning Board<sup>33</sup> and the Secretary of the Smithsonian. After any revisions are made, the Board of Regents approves the Smithsonian's capital plan as part of the Smithsonian's annual budget submission to OMB, and then the entire budget submission is sent to OMB.

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## Funding Constraints Have Presented Considerable Challenges

In spite of OFEO's efforts to effectively manage its real property portfolio within funding constraints, these constraints have presented considerable challenges. OFEO has not had sufficient federal funds to address all of the facilities projects identified in its current estimate of about \$2.5 billion from fiscal year 2005 to year 2013, which comes to an average of about \$278 million annually. As shown in table 2, annual federal capital and maintenance appropriations for Smithsonian facilities in recent years have been considerably below \$278 million.

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<sup>33</sup>The Smithsonian's Capital Planning Board is made up of the chief financial officer (chairperson); deputy secretary and chief operating officer; under secretaries for Science and Art; chief executive officer of Business Ventures; chief information officer; general counsel; director of Policy and Analysis; and OFEO director.

**Table 2: Smithsonian Institution Facilities Capital and Maintenance Appropriations, Fiscal Years 2002-2007**

Dollars in millions

Fiscal year	Facilities capital appropriation	Facilities maintenance appropriation	Total
2002	\$97.9	\$14.5	\$112.4
2003	98.8	17.0	115.8
2004	107.6	39.6	147.2
2005	126.1	38.2	164.3
2006	98.5	45.0	143.5
2007	98.6	51.3	149.9
<b>Total</b>	<b>\$627.5</b>	<b>\$205.6</b>	<b>\$833.1</b>

Source: Smithsonian Institution.

Note: According to Smithsonian officials, the facilities maintenance appropriations for fiscal years 2002 and 2003 reflect the proportion of the total salaries and expenses appropriation that went toward OFEO's maintenance budget. However, these numbers do not reflect the total funds used for maintenance by the Smithsonian for those years because some maintenance was funded through individual facilities' budgets rather than through OFEO's budget. Starting in fiscal year 2004, all facilities maintenance was funded through OFEO's maintenance budget, and the Smithsonian's maintenance appropriation reflected a line item in the Smithsonian's budget justification request to Congress.

Funding constraints have reduced OFEO's ability to implement and complete capital projects to address long-standing problems with facilities, such as those described earlier in this report. The majority of museum and facility directors stated that they think OFEO does a good job of prioritizing and addressing problems with the amount of funds available, and, as discussed previously, some of the major facilities problems they identified to us are scheduled to be addressed in the next several years. For example, the electrical systems at the Air and Space Museum are scheduled to be replaced in fiscal years 2007 through 2010.

However, Smithsonian officials stated that, generally, funding is available only for top-priority revitalization and emergency maintenance projects. As a result, some high-priority repairs have been put on hold while major revitalizations, such as the revitalization of the Reynolds Center, are completed. According to OFEO officials, the Reynolds Center revitalization became a top priority because the building was in such poor condition that it would have become unusable without a major revitalization. An OFEO official stated that prior to the revitalization, due to problems with the facility's systems, the water was undrinkable and there were incidents of bursting valves. Several museum and facility directors expressed frustration that projects at their facilities had been

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delayed. For example, the director of the Freer and Sackler Galleries expressed frustration that fixing the Quadrangle's condensate system, which threatens collections and has been a problem since 1993, was originally in the capital plan to be fixed in fiscal year 2006 but was delayed until fiscal year 2007 because of a lack of funding.

Funding constraints for facilities maintenance have also limited OFEO's ability to implement its 5-year maintenance plan. OFEO officials stated that current funding enables the execution of only about 30 percent of its maintenance plan. As a result, OFEO is never able to get past the top-priority maintenance projects in the plan to complete other important maintenance projects. According to OFEO officials, a lack of sufficient funds for maintenance has limited their ability to optimally maintain their equipment, leading to more expensive failures later on and to systems that need to be replaced—and thus end up in the capital program—sooner than they might otherwise be.

Some museum and facility directors described reservations about the centralization of facilities management under OFEO related to funding constraints and maintenance issues. About half of the museum and facility directors we spoke with were satisfied with OFEO's centralized facilities management approach, and some noted that OFEO has brought a higher degree of professionalism to the Smithsonian's real property management activities. However, several museum and facility directors who were less satisfied with OFEO's centralized facilities management approach cited a neglect of day-to-day maintenance due to a lack of staffing and funding or greater difficulty getting facilities funds to pay for small maintenance or repair projects.

OFEO officials have attempted to get 2 percent of the Smithsonian's facilities' current replacement value for the maintenance budget—which is almost entirely federally funded—but they have not been able to do so. According to the National Research Council, an industry group, a maintenance budget of 2 percent to 4 percent of current replacement value is recommended to meet the appropriate maintenance requirements of facilities. Although the Smithsonian's maintenance appropriation increased in fiscal year 2007, it represented a maintenance budget of 1 percent of current replacement value.

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## The Smithsonian's Omission of Private Funds from Its Capital Plan Has Made It Challenging for Stakeholders to Assess the Funding and Scope of Projects

The Smithsonian's omission of privately funded facilities projects from its capital plan has added to its challenges in managing real property by reducing the ability of the Smithsonian and other stakeholders to comprehensively assess the funding and scope of facilities projects. According to OFEO officials, OFEO's efforts related to securing increased funds for facilities have centered on more effectively justifying to Congress the need for an increase in federal funds for facilities. According to OFEO officials, developing a funding strategy that goes beyond federal funding is a matter for the Board of Regents to determine.

At the same time, while the Smithsonian has received private funds for facilities projects through donations, the Smithsonian has omitted privately funded projects from its capital plan. As discussed earlier in this report, it also has not included privately funded projects in its updated cost estimate of \$2.5 billion for facilities projects through fiscal year 2013. Its capital plan and cost estimate therefore lack comprehensiveness and transparency and do not effectively communicate all of the Smithsonian's scope and funding priorities to the Board of Regents, OMB, and Congress in a way that could be helpful to considering funding strategies that go beyond federal funding.<sup>34</sup> In prior work, we have identified comprehensiveness as an important element of agencies' long-term capital plans.

The Smithsonian includes information on the scope and funding of privately funded projects in other documents that are provided to stakeholders, such as the capital asset plans (Exhibit 300s) required to be submitted to OMB for each major new and ongoing project. However, a Smithsonian official described the capital plan as the primary document that defines the Smithsonian's long-term capital strategy, and the Smithsonian has used its cost estimate for facilities projects through 2013 to describe its long-term funding needs for facilities to Congress and other stakeholders. These two documents are therefore key places where the Smithsonian lays out its overall facilities needs and its strategy for addressing those needs. As a result, even though information on privately funded projects is detailed elsewhere, the lack of such information in

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<sup>34</sup>The Smithsonian submits its 5-year capital plan to Congress as part of its annual budget justification. In recent work on capital planning, in 2007, we provided a matter for congressional consideration that Congress require agencies to develop comprehensive, long-term capital plans and submit them for congressional review in order to ensure that Congress is receiving the capital planning information it needs to make informed decisions. See [GAO-07-274](#).

these documents limits the ability of the Smithsonian and other stakeholders to comprehensively assess the funding and scope of facilities projects in the context of the Smithsonian’s overall facilities’ strategy—and de-emphasizes the existing and potential role of private funding in this strategy.

The omission of privately funded projects from these documents is particularly noteworthy because in recent years, private funds have played an important role in funding some of the Smithsonian’s highest-priority construction and revitalization projects. According to Smithsonian officials, in fiscal years 2002 through 2007, the Smithsonian spent \$393.4 million in private funds for capital and revitalization projects, as shown in table 3.

**Table 3: Funding and Total Cost of Smithsonian Capital Projects That Have Received Private Funds for Capital Costs, Fiscal Years 2002-2007**

Dollars in millions			
Capital project	Private funds for capital costs (new construction and enhancements)	Federal funds for capital costs (new construction and revitalization)	Total capital costs
National Museum of the American Indian	\$80	\$119.3	<b>\$199.3</b>
National Air and Space Museum Steve F. Udvar-Hazy Center, Phase I	176.3	8.7	<b>185</b>
National Air and Space Museum Steve F. Udvar-Hazy Center, Phase II	3.7	0	<b>3.7</b>
National Museum of American History	39.2	50.7	<b>89.9</b>
National Zoological Park	22.2	80.9	<b>103.1</b>
Donald W. Reynolds Center	72	166	<b>238</b>
<b>Total</b>	<b>\$393.4</b>	<b>\$425.6</b>	<b>\$819</b>

Source: Smithsonian Institution.

These private funds have been important in supplementing the Smithsonian’s federal capital appropriations for facilities projects during this time period. For fiscal years 2002 through 2007, the Smithsonian received \$627.5 million in federal capital appropriations, as shown previously in table 2. Therefore, altogether, the Smithsonian’s funds for capital projects from fiscal years 2002 through 2007 was slightly over \$1 billion (\$393.4 million in private funds, used for new construction and



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enhancements, and \$627.5 million in federal appropriations, used for new construction and revitalization). Private funds therefore made up 39 percent of its capital funds for facilities during these years.

Smithsonian officials stated that, generally, donors require that their gifts be used toward new construction or enhancements that are part of larger revitalizations, and that the majority of these private funds were donated for the construction of new facilities—namely, the Museum of the American Indian and the Udvar-Hazy Center. Smithsonian officials also stated that there is no assurance that private funds would continue to make up the same percentage of the Smithsonian’s total funds for capital projects in future years.

Other organizations we visited include both private and public investments in their capital plans to inform their stakeholders about the scope of projects and the extent of such partnerships used to fund capital needs. According to a senior vice president at the American Museum of Natural History in New York, describing the entire project and projected sources of income to the city of New York in the capital plan helps the museum make its case with the city and fosters a positive relationship. The official also stated that including the entire project in the capital plan can help show donors both the programmatic link to the museum’s capital requests and the support expected by the city, which can help with the museum’s private fund raising.

Smithsonian officials stated that they do not project future private funds in the capital plan because of the uncertainty of what these amounts will be. In contrast, the University of California acknowledges this uncertainty in its capital plan but, nevertheless, includes privately as well as publicly funded projects in its plan, along with tentative projections and strategies for meeting those projections. It states, for example, that the Berkeley campus seeks funds for capital construction through targeted campaigns. In addition, the University of California distinguishes in the plan between privately funded projects the campus is committed to moving forward on in the 5-year period and privately funded projects it would move forward on only when funds are available—while including information on both. The lack of such information in the Smithsonian’s capital plan de-emphasizes the potential for private funds to help address facilities projects and makes the capital plan less comprehensive in describing the scope of planned projects at the Smithsonian’s facilities.

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## The Smithsonian Has Taken Some Steps to Develop and Implement Funding Strategies, but Its Evaluation of Proposed Alternatives Has Been Limited

The Smithsonian Board of Regents has taken some steps to address our April 2005 recommendation to develop and implement a strategic funding plan to address its facilities projects. The Board of Regents created an ad-hoc committee, which, after reviewing nine funding options, requested an increase of \$100 million in its federal appropriations, but the success of this strategy is uncertain. We found that some of the Smithsonian's evaluations of the other eight funding options were limited in that they did not always provide complete analysis, fully explain specific assumptions, or benchmark with other organizations. Also, the evaluations do not consider combining options in order to increase the amount of revenue generated.

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## To Address Our Recommendation, the Smithsonian Requested an Increase of \$100 Million in Its Federal Appropriations, but the Success of This Strategy Is Uncertain

The Board of Regents has taken some steps to address our recommendation to develop and implement a strategic funding plan to address the Smithsonian's facilities projects. In June 2005, the Board of Regents established the ad-hoc Committee on Facilities Revitalization to explore options to address the Smithsonian's April 2005 estimated \$2.3 billion for facilities revitalization, construction, and maintenance projects through fiscal year 2013.<sup>35</sup> In September 2005, the ad-hoc committee held a meeting, at which it reviewed nine funding options that had been prepared by Smithsonian management for addressing this estimated funding need. The nine options are briefly described in table 4.

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<sup>35</sup>According to a Smithsonian official, at its June 2007 meeting, the board approved that the ad-hoc Committee on Facilities Revitalization become a standing committee.

**Table 4: Nine Funding Options Evaluated by the Ad-Hoc Committee on Facilities Revitalization**

<b>Funding option</b>	<b>Description</b>
Federal income tax check-off contribution	Federal income tax returns would include a check-off box to allow taxpayers to designate some of their tax liability to a special fund for the Smithsonian's facilities.
Heritage treasures excise tax	An excise tax would be created, and possibly levied on local hotel bills, to generate funds for the Smithsonian's facilities.
National fund-raising campaign	The Smithsonian would launch a national campaign to raise funds for its facilities.
General admission fee program	The Smithsonian would institute a general admission charge to raise funds for critical but unfunded requirements.
Special exhibition fee program	The Smithsonian would charge visitors to attend a select number of special exhibitions as a means to raise funds to meet critical but unfunded requirements.
Smithsonian treasures pass program	The Smithsonian would design a program through which visitors could purchase a Smithsonian treasures pass with special benefits, such as no-wait entry into facilities or behind-the-scenes tours, to raise funds to meet critical but unfunded requirements.
Facilities revitalization bond	The Smithsonian would borrow funds such as through a private or public debt bond for the Smithsonian's facilities.
Closing Smithsonian museums	The Smithsonian would permanently or temporarily close museums to the public in order to generate savings to help fund its facilities.
Increasing Smithsonian appropriations	The Board of Regents and other friends of the Smithsonian would approach the Administration about a dramatic appropriations increase to fund Smithsonian's facilities.

Source: Smithsonian Institution.

According to Smithsonian regents, after considering these nine proposed options, the ad-hoc committee decided to request an increase in the Smithsonian's annual federal appropriations, specifically deciding to request an additional \$100 million over the Smithsonian's current appropriation annually for 10 years, starting in fiscal year 2008, to reach a total of an additional \$1 billion. According to two regents, this option was selected for several reasons. First, they stated that although the other eight options would generate some funding for the Smithsonian's facilities projects, only an increase in appropriations had the potential of reaching the April 2005 estimate of \$2.3 billion for facilities projects in nine years. Moreover, they stated that among Smithsonian management and regents, there was a strong feeling that the revitalization, construction, and maintenance of Smithsonian facilities are federal responsibilities.<sup>36</sup>

According to Smithsonian officials, it is the position of the Smithsonian, based on an historical understanding, that the maintenance and

<sup>36</sup>While Congress does appropriate funds every year for the revitalization, maintenance and security of facilities, the Smithsonian could raise additional revenue or use existing unrestricted trust funds for these purposes.

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revitalization of facilities are a federal responsibility. Smithsonian officials pointed out that as early as the 1850s, the federal government has provided appropriations to the Smithsonian for the care of objects belonging to the United States. In addition, the regents added that there was a sentiment at the meeting that the Board of Regents should not offer to replace public responsibilities with private dollars, since private funding can be less reliable than annual federal appropriations.

In September 2006, several members of the Board of Regents and the Secretary of the Smithsonian met with the President to discuss the issue of increased federal funding for the Smithsonian's facilities. According to Smithsonian regents, during the meeting, among other things, the regents discussed the problem of aging facilities and the need for an additional \$100 million in federal funds annually for 10 years to address the institution's facilities revitalization, construction, and maintenance needs. The representatives of the Smithsonian at the meeting told the President that they had no other options to obtain this \$100 million except the Smithsonian's federal appropriation. These representatives said the Smithsonian had made considerable expense cuts and raised substantial private funds, but donors are unwilling to donate money to repair and maintain facilities.

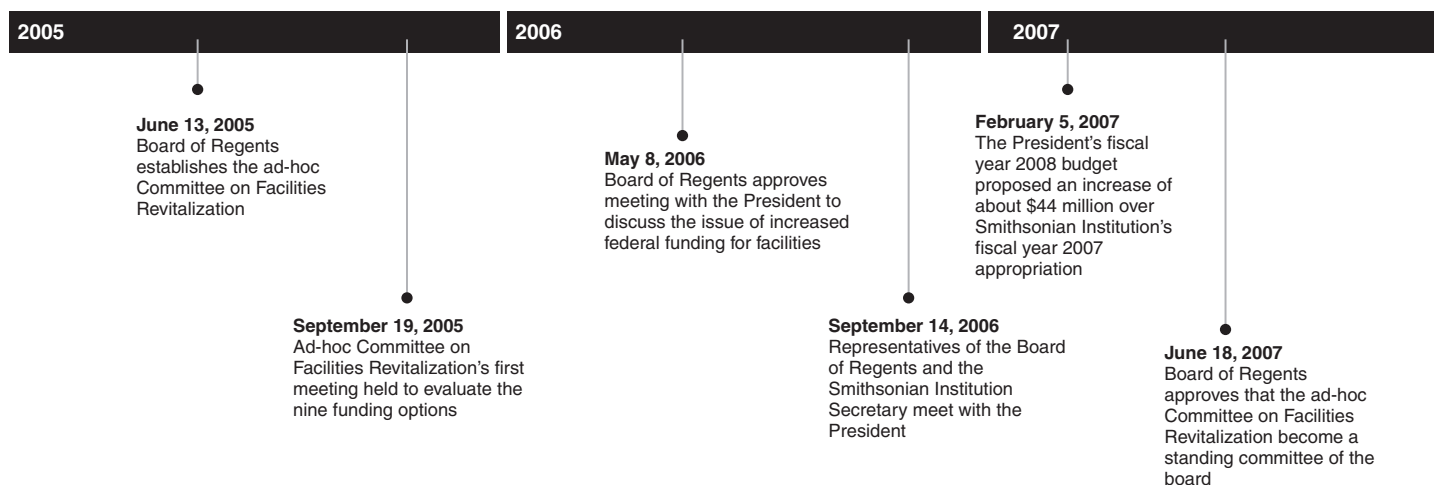
The President's fiscal year 2008 budget proposal, published in February 2007, proposed an increase of about \$44 million over the Smithsonian's fiscal year 2007 appropriation, representing an increase of about \$9 million for its facilities capital appropriation and an increase of about \$35 million for its salaries and expenses appropriation—which includes facilities maintenance.<sup>37</sup> However, funds in the salaries and expenses appropriation also support many other activities, such as research, collections, and exhibitions, and it is not clear how much of the \$35 million increase the Smithsonian would use for facilities maintenance. Moreover, Congress may choose to adopt or modify the President's budget proposal when funds are appropriated for the fiscal year. According to two regents, while the \$44 million increase in the President's proposed budget is good news for the Smithsonian and its facilities, it does not provide a complete solution for the April 2005 estimate of \$2.3 billion in facilities projects, and, as a result, the Board of Regents will have to consider and implement

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<sup>37</sup>Specifically, the President's fiscal year 2008 budget proposal for the Smithsonian's appropriation proposed \$107,100,000 for facilities capital, which includes funding for facilities projects, and \$571,347,000 for salaries and expenses, which includes facilities maintenance.

other options. Furthermore, given the previously described increase in the Smithsonian's estimate for facilities projects to about \$2.5 billion, even if the Smithsonian were able to secure a \$100 million increase in its federal appropriations for 10 years, to reach a total of an additional \$1 billion by 2013, it would not fully address the Smithsonian's estimated funding needs for facilities projects. Figure 13 shows a timeline summarizing some of the key events that have occurred since the Board of Regents established the ad-hoc Committee on Facilities Revitalization.

**Figure 13: Timeline of the Ad-Hoc Committee on Facilities Revitalization Key Events**



Source: GAO analysis of Smithsonian Institution data.

### Some of Smithsonian's Evaluations of the Other Eight Funding Options Were Limited

The Smithsonian's evaluation of the other eight funding options that were presented in preparatory materials by Smithsonian management to the Board of Regents included the potential benefits and drawbacks of each funding option. However, we found that, in some cases, the Smithsonian's evaluation of these options was limited in that it did not always provide complete analysis, fully explain specific assumptions, or benchmark with other organizations—items crucial to determining each option's potential for reducing the April 2005 estimate of \$2.3 billion in facilities projects.

In the preparatory materials, several of the nine options are dismissed because, independently, the options would not generate the sizable sums required to address the Smithsonian's facilities projects. However, there is no mention of combining options in order to increase the amount of

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Evaluation of the Option to  
Close Museums Is Not  
Complete

revenue generated. Combining options has the potential to raise more funds to address the Smithsonian's revitalization, construction, and maintenance projects at a faster rate than any one option independently. In fact, in the wake of the Board of Regents' failure to secure an increase of \$100 million from the President's proposed budget, one regent said that there is no single solution and a combination of options will have to be used to fund the Smithsonian's facilities projects. An analysis of the potential of combining options could have been useful to members of the ad-hoc committee in developing a funding strategy for the Smithsonian's facilities projects.

In evaluating the option to close museums, the preparatory materials provided to the ad-hoc committee did not provide a complete analysis of the potential scenarios for closing museums in order to determine how this option could be implemented in a way that would maximize cost savings while minimizing revenue losses. This is important since the Smithsonian based its analysis of this option on the costs saved (i.e., for security and custodial staff) versus forgone concession revenue. For example, in one scenario, the Smithsonian proposed to close all museums on the National Mall 1 day a week (Tuesday), which would result in the Smithsonian earning zero concessions revenue from visitors on that day. On the other hand, the Smithsonian did not consider closing museums 1 day a week on a staggered schedule so that visitors would have a choice of some open museums each day of the week. This scenario would allow the Smithsonian to capture concessions revenue each day of the week—versus the scenario provided in the preparatory materials, in which there would be 1 day (Tuesday) with no opportunities for a visitor to spend money at the Smithsonian.

In another scenario, the Smithsonian considered closing all museums on the National Mall for 3 days a week, except for the American Indian Museum, which would be closed for 2 days a week. Although, unlike in the previous scenario, the Smithsonian did stagger the three days on which the museums would be closed, the scenario included closing the three most visited museums in 2006—Air and Space Museum, Museum of American History, and Museum of Natural History—on some of the same days (see fig. 14).

**Figure 14: Smithsonian Institution’s Scenario for Closing All Smithsonian Museums on the National Mall for 3 Days a Week**

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
National Air and Space Museum	●	○	●	○	●	○	○
National Museum of American History	●	○	●	○	●	○	○
National Museum of Natural History	●	●	○	●	○	○	○
National Museum of the American Indian	○	●	○	●	○	○	○
Hirshhorn Museum and Sculpture Garden	○	●	○	●	●	○	○
National Museum of African Art	○	●	●	●	○	○	○
Arthur M. Sackler Gallery	○	●	●	●	○	○	○
Freer Gallery of Art	○	●	●	●	○	○	○
S. Dillon Ripley Center	○	●	●	●	○	○	○

Open  
 Closed

Source: GAO analysis of Smithsonian Institution data.

As shown in Figure 14, the scenario of closing National Mall museums 3 days a week included closing all of the art museums on the National Mall on the same day two times a week. Furthermore, the Smithsonian only considered this one scenario for closing museums on multiple days a week, rather than considering several scenarios to find the optimum combination of providing visitors with museum variety each day in order to maximize potential revenues. For example, Smithsonian did not analyze the following scenarios:

- Limiting the days the three museums with the highest visitation rates and concessions earnings are closed, while focusing on closing the museums that have the lowest visitation and concessions earnings rates.
- Ensuring that one or more art museums are open each day so that visitors interested in art have an option to visit at least one art museum each day—and spend concessions dollars in art museum restaurants and stores.
- Closing only one of the three most visited museums each day to provide visitors more choices of where to go and ensure that at least two of these museums are capturing revenue.

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Evaluations of the National  
Fund-Raising Campaign and  
Treasures Pass Program  
Options Have Unclear  
Assumptions

In discussing these two scenarios for closing museums, the Smithsonian did not explain why these options were evaluated over other options. It is also not clear why the Smithsonian chose to evaluate museum closures only on the National Mall. The Smithsonian has several other museums not located on the National Mall that it could also consider closing to save costs.

In the preparatory materials provided to the ad-hoc committee, the Smithsonian's evaluation of implementing a national fund-raising campaign does not fully explain some of the assumptions used to determine the revenues, costs, and length of the campaign described. The analysis predicts that a Smithsonian national fund-raising campaign could generate \$13 million to \$16 million and limits the life of the campaign to 2 to 4 years. However, it is unclear how the Smithsonian developed these revenue and time figures, especially since the analysis cites the experiences of other campaigns whose revenue and time figures are much different. For example, the analysis describes the experience of the campaign for the World War II Memorial, which raised \$165 million in 8 years, or \$20.6 million per year. In another example, the analysis describes the campaign for the Statue of Liberty and Ellis Island Foundation, which raised \$540 million in 19 years, or \$28.4 million per year.

The Smithsonian's analysis also states that a national fund-raising campaign would require deferring fund-raising efforts from other Smithsonian-wide direct marketing efforts and cost \$3 million. However, the analysis does not estimate the cost of deferring current fund-raising efforts or explain how the \$3 million cost assumption was derived. Moreover, the analysis suggests that the costs of deferring current fund-raising efforts, plus the \$3 million to implement a national fund-raising campaign, would outweigh any revenue gained; however, this might not be the case.

With regard to the treasures pass program option, the analysis states that this option would generate a total annual net revenue of \$8.4 million. This analysis is limited because it assumes that the cost to administer this program would be 40 percent of revenues—an estimated reduction of \$5.6 million per year. However, it is unclear how the Smithsonian developed this assumption because its basis was not provided or discussed in the preparatory materials. In addition, the analysis discusses five other cultural organizations' use and cost to visitors of programs similar to a treasures pass program, such as the Longwood Gardens in Pennsylvania and the Field Museum in Chicago, but the analysis does not



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Evaluation of Implementing a  
General Admission Fee  
Program Lacks Benchmarks

include information on these organizations' costs to administer this type of program.

The Smithsonian's evaluation of establishing a general admission fee program does not use information from other organizations to comprehensively assess the option's potential benefits. In some instances, the Smithsonian did not perform research with other organizations, including one of its own, to gauge if its assumptions were reasonable. The analysis provided to the ad-hoc committee in preparatory materials states that a general admission fee program—which includes a mandatory admission fee for entry into any museum and the National Zoo and revenue from purchases of the Smithsonian's membership program that would provide free admission as a benefit—would generate a total annual net revenue of about \$57.6 million (\$50.7 million in admission fee revenue plus \$6.9 million in new membership revenue).<sup>38</sup>

The analysis states that an admission fee could reduce the amount of money visitors spend at Smithsonian restaurants and gift stores and assumed a 10 percent reduction to annual net gains on the basis of visitor surveys. According to the Smithsonian's evaluation materials, visitors have indicated that if they had to pay an admission fee to enter Smithsonian museums, they would spend less once inside the museums. However, the Smithsonian's materials do not benchmark this assumption with the experiences of other museums that have established admission fees. We spoke with the directors or facility directors of six museums and one zoological park who stated that instituting or increasing admission fees did not decrease the amount of money visitors spent in museum restaurants and stores. One of these museums, the Cooper-Hewitt Museum, is the only Smithsonian museum that charges an admission fee.<sup>39</sup> The Cooper-Hewitt Museum director told us that he has not seen an effect on restaurant or gift shop sales when admission fees are raised. He stated that the increase in admission fees over the past three fiscal years has coincided with a period of uninterrupted growth in shop revenues. The stated experiences of these other museums suggest that the Smithsonian

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<sup>38</sup>The Smithsonian's general admission fee program estimate of \$57.6 million assumes about 7.8 million visitors and 540 new memberships. Visitor admission fees range from \$3 to \$10, and memberships are \$16.

<sup>39</sup>According to Smithsonian officials, the Cooper-Hewitt Museum was already charging admission fees when it joined the Smithsonian. In addition, it is located in New York City, where admission fees for museums are common.

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may need to analyze this assumption further by measures such as benchmarking with other museums.

The Smithsonian's analysis of the general admission fee program also included an adjustment of the gross revenues to cover the cost of operating and administering an admission fee program. The Smithsonian estimates that the cost of operating a general admission fee program is 20 percent of gross revenues based on the experience of the Department of the Interior's National Park Service (NPS) and the Department of Agriculture's Forest Service (Forest Service) under the Recreation Fee Demonstration Program.<sup>40</sup> However, it is unclear in the analysis if the Smithsonian consulted directly with NPS or the Forest Service to better understand this estimate. According to the *First Triennial Report to Congress Fiscal Year 2006 on the Recreational Fee Demonstration Program*,<sup>41</sup> the average cost of collections for four federal agencies over fiscal years 2000 through 2003 has remained constant at about 20 percent of gross fee revenue. However, for fiscal year 2003, the cost of collection for NPS was about 22 percent and for the Forest Service about 14 percent. While the Smithsonian may have chosen to use 20 percent in its analysis because it was the average cost of collections for four federal agencies over 4 years, given the variation in these numbers and the differences between NPS and the Smithsonian, more analysis may be warranted to determine the Smithsonian's likely costs of administering an admission fee program.

For example, the analysis is unclear if the Smithsonian consulted with NPS to understand whether NPS's costs to operate the admission fee program would be similar to the Smithsonian's costs for an admission fee

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<sup>40</sup>In 1996 Congress established an experimental initiative called the Recreational Fee Demonstration Program, which was scheduled to expire on December 31, 2005. The program focused on the activities of four land management agencies: the National Park Service, Fish and Wildlife Service, Bureau of Land Management, and Department of Agriculture's Forest Service. Under the fee demonstration program, the participating agencies were authorized to establish, charge, collect, and use fees at a number of sites to enhance visitor services and to address a backlog of needs for maintenance and repair, among other uses. New authority, the Federal Lands Recreation Enhancement Act, was enacted by Congress as part of the fiscal year 2005 Omnibus Appropriations Bill, and the program is authorized for 10 years.

<sup>41</sup>The First Triennial Report to Congress Fiscal Year 2006 is the most recent report to Congress on the Recreational Fee Demonstration Program. The Recreational Fee Demonstration Program ended in December of 2004 and was replaced by the Federal Lands Recreation Enhancement Act.

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program. According to an NPS official, there are many factors that affect the cost to administer the NPS fee program, especially those costs related to the method by which fees are collected and administered, such as personnel costs, credit card processing costs, and the costs to transport and safeguard funds. For example, NPS collects fees from about 1,000 locations and has costs associated with vehicles—sometimes armored—used to retrieve cash and deposit it into a bank. This cost can be high because many locations are geographically remote—i.e., the Grand Canyon and parks in Alaska. Since Smithsonian museums are not located in geographically remote areas, its costs to transport money could be lower than NPS's costs, and, therefore, a reason why the NPS fiscal year 2003 estimate of 22 percent to administer the Recreational Fee Demonstration Program may not be applicable to the Smithsonian.

We found that museums have different experiences with the costs associated with administering an admission fee program, and, therefore, it may not have been comprehensive enough for Smithsonian to look at the experiences of two federal agencies. An official from the Corcoran Gallery of Art—which is located in Washington, D.C., and is a private not-for-profit art museum—stated that initially there was a fixed cost to implementing the admission collection system, but once the system was implemented, the labor costs associated with administering the admission fee program were not directly measured because they were embedded in the operating costs of the organization. For example, employees assigned to administering the tickets serve multiple other functions, such as assisting visitors. The Corcoran official also stated that the revenue gained from admission fees exceeds the cost of administration. An official from the Museum of Modern Art (MOMA)—which is located in New York City and is a private not-for-profit art museum—expressed a similar point. The official stated that MOMA has no reason to measure the cost of administering the admission fee program because it is not a direct cost to the museum since this function is one of several assigned to museum employees. According to the MOMA official, absent an admission fee program, MOMA would still need the same number of staff to assist visitors at the museum.

Two museums that measure the cost to administer the admission fee program had different experiences. An official with the Phillips Collection—which is located in Washington, D.C., and is a private not-for-profit art museum—told us that admission expenses as a percentage of admissions gross revenue averaged 26 percent over a 3-year period. In contrast, an official from the American Museum of Natural History—which is located in New York City and is a private not-for-profit natural history

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museum—stated that admission expenses as a percentage of admissions gross revenue were approximately 13 percent for 2006.

According to two members of the Board of Regents, the board recognizes that it may need to undertake further analysis of the funding options presented and consider additional funding options. In June 2007, the board voted to turn the ad-hoc committee into a standing Committee on Facilities Revitalization. The members of the Board of Regents also stated they recognized the need to work closely with Congress on this issue in the future. However, these regents told us that in light of other priorities, the board has not yet had time to fully reconsider funding strategies.

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## Conclusions

Clearly, the Smithsonian is at a crossroads, with significant construction, revitalization, and maintenance projects—including security-related projects—needed to better protect the Smithsonian’s visiting public, staff, facilities, and collections; as well as funding constraints that have limited its ability to complete these projects in a timely manner. Adding to these strains is that the Smithsonian will continue to grow, with the congressionally authorized Museum of African American Culture and History. The Smithsonian’s strengths in following key security practices and taking steps to effectively manage its real property portfolio are limited by these funding constraints.

Moreover, while the Smithsonian has taken steps to effectively prioritize security projects, such as developing an all-hazards risk assessment report, the lack of awareness of many museum and facility directors of this report limits their ability to work with OPS to identify, monitor, and respond to changes in the security of their facilities, which may limit the Smithsonian’s ability to ensure it is prioritizing existing resources as effectively as possible to minimize security risks. In addition, the Smithsonian’s omission of privately funded projects from two key documents—its updated cost estimate of facilities projects through 2013 and its capital plan—makes these documents less transparent and comprehensive and thus of less value in communicating the full scope and funding needs of projects for capital decision making. The omission of private funds from these documents also de-emphasizes the existing and potential role of private funds in the Smithsonian’s facilities strategy and the Smithsonian’s flexibility to raise and use private funds for these projects.

The Smithsonian’s lack of resources to address urgent security and facilities needs underscores the importance of the Board of Regents’

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efforts to develop a more effective funding strategy. While the Board of Regents has considered a variety of funding options, at this point in time, it has yet to implement a strategy other than requesting increased federal funds. Moreover, since the Board of Regents did not analyze the nonfederal funding options in a comprehensive manner, it lacks vital information needed to develop a funding strategy that goes beyond federal funding.

Further delays in implementing a viable strategy to fund the significant number of facilities projects at many Smithsonian facilities increase the risks to these facilities' collections. At some point, damage to priceless items may occur, and the ability of the Smithsonian to meet its mission will decline. Notwithstanding that the federal government has appropriated funds for facilities' revitalization, maintenance, and security, the Smithsonian could raise additional funds or use existing unrestricted trust funds for these purposes. It would appear that the Board of Regents' stewardship role, at a time of significant real property challenges and relatively constrained federal funds, obligates them to consider providing more private funds to meet the funding requirements of its overall mission.

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## Recommendations for Executive Action

We are making three recommendations to the Secretary of the Smithsonian and two recommendations to the Board of Regents.

To ensure that the Smithsonian's museum and facility directors have the information they need to work with OPS to identify, monitor, and respond to changes in the security of their facilities, and to increase the comprehensiveness of key documents used to present the Smithsonian's long-term facilities needs and strategy, we recommend that the Secretary of the Smithsonian

- ensure that museum and facility directors are aware of and understand the all-hazards risk assessment report for their facility, including how it affects the prioritization of security projects;
- ensure that museum and facility directors receive daily information related to security issues, including the number of security officers assigned to the facility; and
- include in the Smithsonian's estimate for facilities revitalization, construction, and maintenance projects through 2013 and in the Smithsonian's capital plan the full scope of planned projects and

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information on planned funding sources—federal or private funds—for each.

To address the Smithsonian’s funding needs for facilities projects, we recommend that the Board of Regents

- analyze, in a more comprehensive manner, the eight proposed nonfederal funding strategies, along with any additional strategies, for its facilities projects, including developing a clearer explanation of assumptions and incorporating the results of discussions with other cultural organizations and a consideration of combining funding options in this analysis; and
- submit, following its completion of the comprehensive analysis, a report to OMB and Congress that describes a funding strategy to meet the needs of its revitalization, construction, and maintenance projects, so that OMB and Congress can understand the steps the Smithsonian is taking to meet these needs in addition to its requests for federal funding.

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## Agency Comments and Our Evaluation

We provided a draft of this report to the Smithsonian for its official review and comment. The Smithsonian concurred with the report’s recommendations and generally concurred with the report’s findings, including the strengths and challenges related to OFEO’s efforts to manage the Smithsonian’s real property portfolio and the strengths and challenges related to OPS’s security efforts. Regarding our recommendations for improving the Smithsonian’s communication on security issues, the Smithsonian stated that OPS’s leadership understands the importance of communication with the management and staff of the facilities for which it provides security, and described specific actions OPS would take to implement our recommendations.

Regarding our recommendations to the Board of Regents, the Smithsonian stated that the Board of Regents’ Committee on Facilities Revitalization is working to address the Smithsonian’s facilities needs through further evaluation of potential funding options. The Smithsonian stated that this committee is also planning to review existing Smithsonian funding priorities to determine if any funds are available to redirect toward facilities needs. Furthermore, the Smithsonian stated that the result of these efforts will inform the committee’s plan to address the Smithsonian’s facilities funding requirement, which will be presented in draft form to the full Board of Regents at its November 2007 meeting and in final form to OMB and Congress by the end of the year.

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Although the Smithsonian agreed with our recommendations, the Smithsonian expressed concerns about several issues in the report. The Smithsonian stated that we implied that the Smithsonian's private trust funds offer a solution to the Smithsonian's facilities crisis and that we reference the possibility of raising private funds to address facilities needs when, according to the Smithsonian, both of these approaches have difficulties associated with them. In general, we have suggested that both of these approaches may have the potential to increase the amount of funds available for the Smithsonian's facilities—to some extent. Furthermore, we have concluded that the difficulties associated with these approaches and alluded to by the Smithsonian underscore the need for our recommendation that the Board of Regents analyze a variety of funding options, many of which do not depend on convincing donors to give funds for facilities' needs, and develop a funding strategy.

The Smithsonian also stressed its position that the revitalization and maintenance of federal facilities are federal responsibilities. We have concluded that the Board of Regents' stewardship role, at a time of significant real property challenges and relatively constrained federal funds, obligates them to consider providing more private funds to meet the funding requirements of its overall mission.

In addition, while the Smithsonian concurred with our recommendation to include privately funded projects as well as federally funded projects in its capital plan and cost estimate of facilities projects through fiscal year 2013, the Smithsonian noted that much of this information is already available to stakeholders in other documents. We have concluded that, notwithstanding the fact that this information appears in other documents, it is important to incorporate it into these two documents, as these documents should comprehensively describe the Smithsonian's long term facilities' funding needs and strategy. The Smithsonian's full comments on our report and our more detailed response to these comments can be found in appendix III.

In addition, the Smithsonian provided separate technical comments, which we incorporated into the final report, where appropriate.

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We are sending copies of this report to other interested congressional committees, the Chairman of the Smithsonian Board of Regents, and the Acting Secretary of the Smithsonian. We will also make copies available to others upon request. In addition, the report will be available at no charge on the GAO Web site at <http://www.gao.gov>.

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If you have any questions about this report, please contact me at (202) 512-2843 or [goldsteinm@gao.gov](mailto:goldsteinm@gao.gov). Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Key contributors to this report are listed in appendix IV.

A handwritten signature in black ink, appearing to read 'M. Goldstein', with a long horizontal flourish extending to the right.

Mark L. Goldstein  
Director, Physical Infrastructure Issues



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# Appendix I: Scope and Methodology

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To determine how the condition of the Smithsonian's facilities has changed since our 2005 report, we interviewed the directors, Office of Facilities Engineering and Operations (OFEO) zone managers, and building managers for 14 Smithsonian facilities to obtain information on new facilities projects, continuing problems, and any adverse effects on collections. In addition, we toured eight facilities identified by the Smithsonian as having major revitalization projects or additional facilities-related problems since our April 2005 report to view facilities improvements or problems that have limited access to or had adverse effects on collections. The facilities we toured were the Cooper-Hewitt National Design Museum (Cooper-Hewitt Museum); Donald W. Reynolds Center for American Art and Portraiture, which houses the National Portrait Gallery and the Smithsonian American Art Museum; National Museum of African Art; National Museum of American History Kenneth E. Behring Center; National Museum of the American Indian; National Museum of Natural History (Museum of Natural History); National Zoological Park (National Zoo); and the Smithsonian's Suitland campus, which includes the Cultural Resources Center, Garber Facility, and Museum Support Center. The Garber Facility has about 40 buildings, and the National Zoo has more than 40 buildings. To obtain information on how the cost of Smithsonian facilities projects has changed since our 2005 report, we reviewed the Smithsonian's revised estimated costs for major revitalization, construction, and maintenance projects from fiscal year 2005 through fiscal year 2008 and interviewed Smithsonian officials.

To determine the steps the Smithsonian has taken to protect its assets and the challenges it has experienced, we reviewed key security-related documents, such as Smithsonian's 2002 *Disaster Management Program Master Plan*, 2004 *All-Hazards Risk Assessment Report*, and 2007 *Disaster Management Risk Mitigation Plan*, Office of Protection Services (OPS) policies and procedures, and the Interagency Security Committee's key security practices. We also interviewed appropriate Smithsonian officials, including key personnel from OPS and the museum directors and building managers of the facilities we visited to obtain information on the security challenges OPS and each facility experiences. To obtain information on the methodology and purpose of some key security-related documents, we interviewed URS Corporation, which performed the Smithsonian's 2004 *All-Hazards Risk Assessment Report* and 2007 *Disaster Management Risk Mitigation Plan* and Applied Research Associates, which performed the Smithsonian's 2002 *Disaster Management Program Master Plan*. Additionally, we interviewed various security organizations and committees on key practices for cultural property protection. The security organizations and committees include

the American Association of Museums, APPA,<sup>1</sup> ASIS International's Museum, Library and Cultural Properties Council,<sup>2</sup> the Federal Facilities Council, the International Association of Museum Facility Administrators, and the International Facility Management Association and its Museum/Cultural Institutions Council. To obtain information on the Smithsonian's security cost trends from fiscal years 2001 through 2005, we reviewed the Smithsonian's federal appropriations, obligations, and expenditures on security programs. To obtain information on the Smithsonian's security officer levels, we analyzed monthly staffing reports from March 2003 through March 2007. We assessed the reliability of the security officer data from the Smithsonian by interviewing knowledgeable agency officials about data-collection methods, how the data is used, and steps taken to test the data. We determined that the data were sufficiently reliable for the purposes of reporting on security officer levels for March 2003 through March 2007.

To determine the steps the Smithsonian has taken to improve the management of its real property portfolio, we reviewed our prior work on this issue and a variety of Smithsonian documents related to its real property asset management practices, including handbooks on project management, operations and maintenance, and real estate. We also reviewed Smithsonian documents related to capital planning and master planning, such as the fiscal year 2007 through fiscal year 2012 Facilities Capital Program, the Museum of Natural History and the National Zoo's master plans, and minutes of the Capital Planning Board meetings. To obtain information on the Smithsonian's fiscal years 2002 through 2007 facilities capital and maintenance appropriations, we reviewed the Smithsonian's federal appropriations and spoke to Smithsonian officials. To obtain information on the Smithsonian's fiscal years 2002 through 2007 private funds, we reviewed audited financial statements and spoke to Smithsonian officials. We found this data reliable for the purposes of reporting on the amount of the Smithsonian's federal appropriations for fiscal years 2002 through 2007 used for facilities maintenance, revitalization, and construction. To obtain information on the progress of

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<sup>1</sup>APPA is an association for educational facilities professionals, formerly called the Association of Physical Plant Administrators.

<sup>2</sup>Founded in 1955 as the American Society for Industrial Security (ASIS), the organization officially changed its name to ASIS International in 2002. ASIS International is a not-for-profit organization, disseminating information and educational materials to enhance security knowledge, practice, and performance.

the Smithsonian's inventory of real property, we reviewed data from its real property information system. We also reviewed monthly metrics reports to obtain information on the Smithsonian's capital and maintenance benchmarks used for decision making. We also interviewed the director and chief of staff of OFEO, several heads of the offices making up OFEO, and the staff responsible for prioritizing both capital projects and minor repair and maintenance. We also reviewed documents relevant to the management of real property, such as Executive Order 13327, the Federal Real Property Council's *Guidance for Asset Management*, the General Services Administration's *Federal Management Regulation: Real Property Asset Management Guiding Principles*, and the Office of Management and Budget's *Capital Programming Guide*. We also obtained information from several facility organizations on key practices related to the management of real property portfolios. These organizations include APPA, the Federal Facilities Council, the International Association of Museum Facility Administrators, and the International Facility Management Association.

To determine the extent to which the Smithsonian developed and implemented strategies to fund its revitalization, construction, and maintenance projects, we reviewed materials developed by Smithsonian management for the consideration from the Board of Regents' ad-hoc Committee on Facilities Revitalization, which included an analysis of each of the nine funding options. In addition, we reviewed minutes of the Board of Regents' meetings that document efforts taken to develop and implement facilities funding strategies. We interviewed Smithsonian management and two members of the Board of Regents' ad-hoc Committee on Facilities Revitalization, including the chairman of this committee, to obtain information on how the nine funding options were developed and selected for implementation. To obtain information on other organizations' funding strategies for facilities projects, we spoke with officials from the Department of the Interior's National Park Service, the Chicago Museum of Science and Industry, the Corcoran Gallery of Art, the National Building Museum, and the Phillips Collection. We also reviewed the President's fiscal year 2008 proposed budget and the Smithsonian's annual appropriations from fiscal years 2005 through 2007.

To address all of the above objectives, we also conducted site visits at organizations in California and New York that have characteristics similar to those of the Smithsonian, where we reviewed relevant documents, toured facilities, and interviewed officials. In New York, we visited the American Museum of Natural History and the Museum of Modern Art. In California, we visited the California Academy of Sciences; the California

State University Office of the Chancellor; San Jose State University; San Francisco State University; the University of California Office of the President; the University of California at Berkeley; the University of California at San Francisco; and the Zoological Society of San Diego, including the Wild Animal Park. We selected these organizations because they all have some features in common with the Smithsonian, including public and private funding, capital projects, real property portfolio make-up, and organizational mission. We selected New York to efficiently go to two large and heavily visited museums with characteristics similar to Smithsonian museums. We selected California because several facilities' management experts recommended that a university system with old buildings and geographically dispersed campuses would have similar characteristics to the Smithsonian, and in California we could efficiently visit the University of California system and the California State University system, both of which meet these criteria, as well as two other organizations with characteristics similar to those of the Smithsonian: a large and highly visited zoo and a science academy undergoing a major capital construction project.

We conducted our work in New York City; San Diego and San Francisco; and Washington, D.C., from September 2006 to September 2007 in accordance with generally accepted government auditing standards.

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# Appendix II: Smithsonian's Efforts to Implement Key Security Practices

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- *Allocating resources using risk management.* In order to allocate resources more effectively to manage risk, in 2002, OPS hired a contractor to develop a disaster management program master plan that combines disaster and emergency management planning and continuity of operations at all levels of the Smithsonian. The program addresses the three phases of a disaster or emergency: preparedness, response, and recovery. One aspect of the preparedness phase of the program recommended developing a risk assessment and risk management program. In order to develop the recommended risk management plan, in 2004, the Smithsonian contracted for an all-hazards risk assessment report, which includes individual assessments for over 30 Smithsonian facilities and was completed in 2005.<sup>1</sup> These reports identify the primary risks to each facility and also describe both the key observed vulnerabilities and risks and the key risk reduction and mitigation recommendations proposed for each facility to help the Smithsonian prioritize security projects. As a supplement to this report, in Spring 2006, the contractor completed a strategy that included specific recommendations on how to use the Smithsonian's capital and maintenance funds to implement future security projects and operational changes aimed at reducing the risks for Smithsonian facilities. From this strategy, the Smithsonian will develop a new performance metric to track risk mitigation efforts across its facilities. Many of the protective measures identified in the all-hazards risk assessment report have been implemented, will be addressed in the capital program, or can be integrated into an ongoing nonsecurity capital project. The Smithsonian uses these measures to determine the appropriate capital improvements, maintenance projects, and operational procedures to reasonably reduce the risk to Smithsonian staff, visitors, collections, and facilities.
- *Leveraging security technology.* The Smithsonian's Physical Security Plan primarily consists of two separate programs for mitigating the risks to the institution's staff, visitors, collections, and facilities. The two programs, the security system modernization program and the anti-terrorism program, both leverage security technology to protect the Smithsonian's assets. The security system modernization program consists of measures that primarily support cultural property protection through the installation of electronic security systems. The Smithsonian uses a wide variety of technologies to meet the security system modernization program

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<sup>1</sup>OPS consulted with the Federal Emergency Management Agency (FEMA) on the methodologies and consultants to use for the 2005 all-hazards risk assessment report. For a methodology, FEMA recommended its Risk Management Series Publication 452. For consultants, FEMA recommended the entity used to create the FEMA 452 Publication.

requirements. Smithsonian officials reported installing closed circuit television cameras (CCTV) and access entry technologies to augment existing security systems or establish a new program at some facilities. In addition, the security system modernization program plans to install additional electronic systems in several other Smithsonian facilities as soon as more funds become available. The anti-terrorism program consists of physical security measures and procedures that are primarily intended to mitigate the risk of a terrorist attack against the Smithsonian. The anti-terrorism program includes technologies such as perimeter vehicle barriers, CCTV, emergency voice systems, window blast film, and electronic screening of visitors and mail. According to a Smithsonian official, the technologies used for its physical security plan allow OPS to extend the capabilities of security staff and to improve facility security.

- *Performance measurement and testing.* Smithsonian officials stated that the Smithsonian follows Interagency Security Committee (ISC) guidelines for setting performance measures for anti-terrorism measures it has implemented, in addition to performing some testing on its own security practices. As mentioned above, the Smithsonian is developing a measure to track the funding and implementation of recommended risk mitigation projects. Also, the Smithsonian designed and tested its own vehicle barriers and uses computer modeling to determine the best mitigation practices. Regarding OPS operations, the Smithsonian logs the number of visitor complaints on security staff and security practices at all facilities. To test its disaster response plans, the Smithsonian conducts regular mock evacuations. While many of these mock evacuations are done without visitors present, according to Smithsonian officials, in May 2007, OPS conducted a public evacuation drill of the Castle when visitors were present, and a similar drill is planned for the National Zoo. Following a mock or an actual evacuation, the Smithsonian conducts sessions to identify areas of improvement. For example, in June 2006 the Smithsonian had to close facilities affected by flooding along the National Mall. Following these closures, the Smithsonian held meetings about improving facility evacuations. As a result, the Smithsonian altered its Disaster Management Plan because of lessons learned from the event, thereby demonstrating quickness in response and action.
- *Strategic human capital management.* To strategically manage human capital as it relates to security, the Smithsonian has instituted training courses on terrorism awareness, emergency procedures, and shelter-in-place procedures for its security staff. Before September 11, 2001, security officer training was a two-week program; now the program is five weeks long, providing customer service training and instruction on the use of magnetometers, X-rays, and bag searches.

- *Aligning assets to mission.* Smithsonian officials stated that none of its buildings on the National Mall are excess or underutilized, and, therefore, opportunities to align assets to mission by reducing excess or underutilized property in order to reduce overall vulnerabilities are limited. However, according to Smithsonian officials, any future building disposals will include the consideration of reducing security costs in order to more effectively use security resources at fully utilized buildings.
- *Information sharing and coordination.* Smithsonian officials reported sharing and coordinating information with several external stakeholders through periodic meetings with many government and private sector organizations. As a national icon located on the National Mall, the Smithsonian coordinates with several law enforcement entities, including the Federal Bureau of Investigation, the Department of Homeland Security; the U.S. Park Police, the Metropolitan Police Department, and a local Joint Terrorism Task Force.<sup>2</sup> In addition, OPS also shares information with government and private sector security groups including ASIS International's Museum, Library and Cultural Properties Council, Interagency Security Committee, and the National Monuments and Icon Sector of the National Infrastructure Protection Plan.

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<sup>2</sup>The National Joint Terrorism Task Force (NJTTF) is an effort by the Federal Bureau of Investigation to coordinate the efforts of local joint-terrorism task forces in 100 cities nationwide. Local joint terrorism task forces include various local and state law enforcement entities and federal agencies, such as the Department of Homeland Security and the Central Intelligence Agency. NJTTF was created to enhance the FBI's ability to promote coordinated terrorism investigations between its field offices and with its counterparts in federal, state, and local law enforcement agencies, and other federal agencies.

# Appendix III: Comments from the Smithsonian Institution

Note: GAO comments supplementing those in the report text appear at the end of this appendix.



## Smithsonian Institution

Cristián Samper  
Acting Secretary

September 19, 2007

Mr. David M. Walker  
Comptroller General  
Government Accountability Office  
441 G Street, NW  
Washington, DC 20548

Dear Mr. Walker:

On behalf of the Smithsonian Institution, thank you for this opportunity to respond to your report *Smithsonian Institution: Funding Challenges Affect Facilities Conditions and Security, Endangering Collections*. We are pleased that the Government Accountability Office (GAO) expended significant time and effort over the last year to meet with our staff, tour our facilities, and review our documentation in order to understand the magnitude and complexity of the Smithsonian's facilities and security challenges. We are also pleased that GAO recognizes the significant strides we have made in improving the management of our facilities.

We accept all of the recommendations outlined in your report and agree to:

1. Improve the level of communication between the Office of Protection Services (OPS) and our museum and facility directors by making them more aware of the multi-hazard risk assessment and its impact on the prioritization of security projects and providing them with daily information related to security issues, including the number of security officers assigned to their facilities; and
2. Increase the comprehensiveness of documents that describe our facilities' funding needs by adding private trust funds to the funding sources listed on our five-year capital plan and our estimate for facilities revitalization, construction, and maintenance projects through 2013.

In addition, the Smithsonian Board of Regents is already in the process of addressing GAO's third recommendation and is:

3. Analyzing more comprehensively additional strategies for addressing our facilities needs. (As requested, the Board of Regents will submit a report to the Office of Management and Budget and Congress by the end of 2007 that describes a funding strategy to meet the Smithsonian's needs for revitalization, construction, and maintenance.)

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Mr. David M. Walker  
September 19, 2007

**Smithsonian Facilities: Challenges and Successes**

As GAO learned over the course of its 12-month review, the Smithsonian is responsible for the operations, maintenance and repair of hundreds of structures located on the National Mall and in the Washington metropolitan area, but also in many other locations around the United States and the world. This family of facilities includes National Historic Landmarks, research labs, collections storage areas, office buildings and a wide array of other structures, all possessing a unique set of expected functions and maintenance and security challenges. Keeping pace with the constant daily needs of these facilities is the full-time job of thousands of Smithsonian employees, each of whom takes pride in the scientific discoveries, educational endeavors, and stimulating experiences that these buildings make possible. Ensuring the fitness and safety of our facilities—and the people and collections that are housed within them—is one of the most important responsibilities that the Smithsonian owes the American people.

We are pleased that you recognized the significant strides made by the Smithsonian's Office of Facilities, Engineering and Operations (OFEO) since GAO's last report. Since 2005, OFEO has completed the integration of our facilities functions into one office, greatly improving efficiency and coordination of our efforts in this area. This reinvigorated structure has enabled OFEO to perform a critical assets inventory of over 10,000 operating components, each with work plans, to enable our use of a Reliability Centered Maintenance approach. This has resulted in a reduction in failures of major equipment by 20 percent. We have also initiated a massive energy conservation effort that has resulted in more than \$5 million in savings over the past 18 months. These successes led OFEO to be named the 2006 National Winner of the APPA (Association of Higher Education Facilities Officers) Award for Excellence in Facilities Management and enabled the Institution to achieve the highest rating by OMB on the Program Assessment Rating Tool (PART) evaluations for both the Facilities Capital and the Facilities Operations and Maintenance programs.

These accomplishments aside, we acknowledge GAO's findings here and in its 2005 report that we continue to face significant challenges in addressing the \$2.5 billion of revitalization, construction and maintenance requirements that are on hold due to a lack of funds. These financial limitations also make more difficult the critical task of ensuring the security of our buildings and the safety of our visitors, staff and collections.

The examples of facilities problems cited in GAO's report are but some of the structural, mechanical and aesthetic needs that cannot be met because we simply do not have the funds to do so. Without sufficient financial resources, failing mechanical systems cannot be replaced, recurring roof leaks cannot be eradicated, and worn fixtures cannot be

See comment 1.

Mr. David M. Walker  
September 19, 2007

upgraded. Our current funding enables the Institution to respond only to the most critical of needs: those that could threaten public safety, cause damage to collections, or pose significant limits on public access or operability. This focus leaves out the necessary routine maintenance that prevents small problems from growing into big ones that ultimately cause more damage and cost more to fix, and delays the planned replacement of aged building systems before they reach the breakdown stage.

Yet, if additional funding could be secured, the Smithsonian has proven that it would be able to wisely and efficiently spend it to fix these problems. Over the last five years, our obligation rate for facilities capital projects has averaged above 90 percent, while the obligation rate for facilities maintenance (one-year appropriation) has been greater than 99.9 percent. This shows that even with limited funding, the Smithsonian has managed to resolve a number of significant facilities problems and could do more with increased funds. Some recent highlights include roof repairs at the National Museum of Natural History to correct leaks into collections areas as well as offices; repair of numerous leaks in the Quadrangle roof garden that were threatening collections and galleries; and replacement of high-voltage distribution systems at the Conservation Research Center. We have also paid significant attention to fire protection needs at the National Zoological Park, installing new systems at the Rock Creek and Front Royal facilities. Further fire protection projects at the Zoo are in the Capital Plan, and all are scheduled to be completed over the next five years.

#### Facilities Revitalization is a Priority of the Smithsonian Board of Regents

The Smithsonian Board of Regents takes very seriously the Institution's facilities crisis and is currently engaged in a significant effort to address it. As GAO mentioned in its report, in June 2005 the Smithsonian Board of Regents established an Ad-Hoc Committee on Facilities Revitalization to evaluate funding strategies to address this issue. In June 2007, the Board voted to make this group a standing committee of the Board of Regents—an acknowledgement of this challenge's importance to the future health of the Institution.

Since this Committee was made permanent, members have met with senior staff to evaluate the range of revitalization, construction and maintenance needs and to assess the prioritization of these requirements. This summer, at the request of the Committee, senior Smithsonian staff updated and augmented the funding options papers described by GAO in this report and researched additional funding ideas that were suggested by the Regents and other sources. These funding options were discussed by the Committee during its September meeting and are on the agenda for its next meeting in October. At that time, the Committee will evaluate each option individually and in combination. In the interim, the Committee is reviewing facilities funding strategies undertaken by similar

Mr. David M. Walker  
September 19, 2007

entities and will reach out to external stakeholders to generate further ideas. In addition, the Committee will review existing Smithsonian funding priorities to determine if any funds are available to redirect toward facilities needs. The results of these efforts will inform the Committee's plan to address the facilities requirement. This plan, which was previously requested by Senate Rules Chair Dianne Feinstein (D-CA), will be presented in draft form to the full Board of Regents at its November meeting, and, as requested by GAO, in final form to OMB and Congress by the end of the year.

#### Importance of Federal Role in Maintaining Smithsonian Facilities

While the plan will provide a blueprint for how the Smithsonian can supplement government funding to address this crisis, the federal role in ensuring the welfare of the Institution's buildings cannot be overstated. In the years after Congress passed the law establishing the Smithsonian in 1846, the federal government began transferring existing objects and directing that new ones be housed at the Smithsonian. Starting in 1858, in acknowledgement of the costs associated with this responsibility, the Congress began providing an annual appropriation to the Smithsonian for the care of what became known as the National Collection. Since then the size of the National Collection—which includes everything from historic artifacts to priceless paintings to rare animals—has grown to include more than 136 million objects, artworks and specimens. More than 23 million visitors came through our doors last year to glimpse the wonder and wisdom contained in these precious objects and living things. Since the safety and soundness of our buildings is directly related to our ability to successfully preserve, study, and display these collections, it is only fitting that taxpayer dollars be used toward this noble purpose. The Smithsonian is grateful to the Congress and the people of the United States for the annual appropriation it receives each year, a large portion of which goes toward operating and maintaining our buildings.

#### Limits of Smithsonian Trust Funds in Addressing Facilities Funding Challenges

As a Federal trust instrumentality, the Smithsonian also relies significantly on private funding to carry out its mission. Monies brought in from donors and revenue-generating enterprises make up about a third of the Institution's annual revenues. Although GAO has implied in its report that these trust funds offer a solution to our facilities crisis, a review of the current uses of these funds shows the difficulties associated with this approach. The majority of Smithsonian trust funds are given by a donor for a specific purpose and thus cannot be diverted to pay for building operations, repairs or maintenance. The remaining unrestricted trust funds budgeted annually, about \$58 million in FY 2006, cover administrative and mission-related costs that either cannot be paid for with, or are not completely supported by, Federal funds. And while a portion of these unrestricted funds does consist of an annual payout from our endowment, prudent

See comment 2.

See comment 3.

Mr. David M. Walker  
September 19, 2007

financial management guidelines dictate that this amount should not exceed 5 percent of the five-year average endowment value (a formula that currently yields an annual payout of about \$13 million). Additionally, drawing down the unrestricted endowment principal in a special payout would reduce the annual future payout, providing only a limited one-time infusion of funds. In sum, using unrestricted trust funds for building repairs and maintenance provides illusory benefits because it would require the Institution to eliminate multiple programs and positions for which there are no funding alternatives, compromising our educational and scientific mission while having almost no impact on the \$2.5 billion facilities requirement.

GAO's report also references the possibility of raising private funds specifically to address facilities needs. While the Smithsonian is certainly open to the idea of soliciting and accepting gifts from donors for this purpose, the lack of success we and other Institutions have had with this approach indicates that it may only have limited value. While donors have given generously toward the construction of new facilities and major enhancements of existing facilities, we have found that most donors believe that the Smithsonian's operations, revitalization, and maintenance costs are a Federal responsibility. In fact, many are more likely to make a gift if it can enhance a project already supported by Federal funds.

The Smithsonian and many other public and nonprofit institutions have found that donors make gifts to institutions primarily to support programs for which they have a passion or to establish a legacy that will benefit future generations. As a result, most institutions with comparable facilities maintenance and operations funding challenges have not been able to attract donors who are willing to give substantially toward repairing damaged roofs or replacing aging wiring without being able to relate this to a program or project that reflects the programmatic mission of that institution. In April 2007, the Smithsonian commissioned an independent philanthropic management consultant to survey similar nonprofit and public entities on this topic. The consultant's report concluded that "Although several institutions noted that the need to improve infrastructure and address the costs of deferred maintenance is an ongoing concern, all reported that effort to secure support for these purposes has been unsuccessful, except when embedded in programmatic improvements." So while the Smithsonian remains open to investigating the level of interest of private donors to address our revitalization and maintenance requirements, we do not believe that this option alone will suffice to solve the \$2.5 billion problem.

#### Smithsonian Security Record is Strong Even With Limited Resources

While we agree to implement GAO's recommendations regarding communication with directors about our security operations, we believe that our security and safety record is

See comment 4.

See comment 2.

Mr. David M. Walker  
September 19, 2007

outstanding even with the personnel shortages and funding challenges we face. The Smithsonian's Office of Protection Services (OPS) and the professional security officers that make up its force are directly responsible for the safety and security of the people and collections that are housed in our buildings. Although we take seriously the individual incidents that GAO pointed out in its report, given the hundreds of buildings OPS is responsible for monitoring, the thousands of people who visit and work in our buildings each day, and the millions of collections we house, we believe the OPS security record is commendable. Incidents of theft and other crimes are extremely rare, as evidenced by our Total Recordable Crimes Rate, which is well below the average for museums and zoos. Responses to emergencies are swift and professional, such as the 2006 mall-wide evacuation that required Smithsonian security personnel to shelter-in-place thousands of people fleeing a Fourth of July thunderstorm. And design elements and planning for natural disasters, terrorist attacks, and other major incidents are done to the highest standards, leading other organizations to cite our Glass Hazard Mitigation Program and our Mall-Wide Perimeter Barrier program as benchmarks in the field.

However, recruiting and retaining qualified security personnel to carry out these duties remains a major challenge and one that we are working to resolve. As part of this effort, the Smithsonian plans to commission a study of the security staffing levels in our facilities that will yield a plan outlining appropriate staffing for high- and low-risk operations. We will continue to seek innovative ways to recruit and retain talented individuals for these important positions.

The OPS leadership also understands the importance of meaningful and regular communication with the management and staff of the facilities for which it provides security. Senior OPS officials already meet yearly with each facility director to discuss security challenges and changes for the coming year, and building security managers and officers are available on a daily basis to respond to questions or concerns. In response to GAO's recommendations, the OPS Director will meet one additional time per year with each facility director to discuss specific security plans and issues. While OPS distributed the most recent Multi-Hazard Risk Assessment to all facility directors, it is clear from GAO's report that not all directors were aware of that document. Therefore the agenda for these bi-annual meetings will also include a discussion of that risk assessment. In response to GAO's concerns about a lack of available information on security staffing levels at museums and other facilities, OPS will now send a daily security roster to each facility and museum director.

#### **Role of Trust Funding in Smithsonian Capital Plan and Overall Facilities Budget**

The Smithsonian agrees with and will implement GAO's recommendation to incorporate more trust fund information in the next iteration of the Capital Plan, which will support

See comment 5.

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**Appendix III: Comments from the  
Smithsonian Institution**

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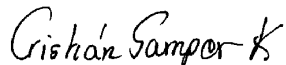
Mr. David M. Walker  
September 19, 2007

the FY 2009 budget request when it is presented to Congress in February 2008. Based on this information, the Institution will recalculate the total requirement for capital and maintenance.

While we agree this approach will prove beneficial to internal and external stakeholders, we note, however, that much of this information is already available to them. From the time major projects with private funding are presented for Smithsonian management approval through execution of each project, full and detailed Federal and trust funding information is provided to decision makers, both internally and externally. For example, the Capital Plan already includes projects that receive private funds, and Federal budget justifications in the past several years for such projects as the National Museum of American History revitalization and the National Zoological Park Asia Trail project reference the trust funds associated with those projects. Further, the Institution provides very detailed information on the Federal and trust funding projections for major projects in the Exhibit 300s provided each year to OMB. In addition, a variety of reports are provided to internal stakeholders at a number of levels, including the summary “tripod” charts, executive and oversight committee presentations, and the operational review presentation to the Secretary three times a year. Examples of some of these documents were provided to GAO during its review. External stakeholders such as OMB and Congress receive information on required funding—from all sources—as part of the project authorization process (for construction/expansion projects), as well as part of the appropriations process (in the budget narratives and during hearings and follow-up questions for the record). External review agencies such as the National Capital Planning Commission also receive information on total project funding in the annual submission for the Federal Capital Improvements Program. As these examples attest, the Institution is committed to ensuring that stakeholders at all levels have complete funding information to facilitate appropriate decisions in the management of its real property inventory.

We appreciate GAO’s efforts to conduct this thorough and fair review of our facilities and security responsibilities and funding needs. There is no question that the \$2.5 billion facilities requirement is one of the most important challenges the Smithsonian faces. We must not lose sight, however, of the need to continue advancements and improvements in our programs as well, an area in which our donors have been extraordinarily generous. We pledge to do our part to address these significant funding challenges, and the Smithsonian and the Board of Regents look forward to working with Congress to tackle these issues.

Sincerely,



-7-

The following are GAO's comments on the Smithsonian Institution's letter dated September 19, 2007.

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## GAO Comments

1. The Smithsonian cited in its letter some accomplishments of its facilities management approach. While our report discusses steps the Smithsonian has taken to improve the management of its real property portfolio, we did not evaluate all of the accomplishments cited in the Smithsonian's letter.
2. The Smithsonian stressed in its response that both the Smithsonian and donors believe that the revitalization and maintenance of the Smithsonian's facilities are federal responsibilities. We recognize that the federal government has played—and is likely to continue to play—an important role in funding the Smithsonian's facilities needs. However, as the Smithsonian has not received sufficient funds from the federal government to meet its facilities needs in recent years, and in light of the threat posed by many deteriorating facilities to the Smithsonian's collections and the public's access to these collections, we have concluded that the Board of Regents' stewardship role, at a time of significant real property challenges and relatively constrained federal funds, obligates them to consider providing more private funds to meet the funding requirements of its overall mission.
3. The Smithsonian expressed concern that we implied that the Smithsonian's private trust funds offer a solution to the Smithsonian's facilities crisis. In our report, we pointed out that unrestricted trust funds could be used for facilities needs, including maintenance, revitalization, or security needs, but have not been used for such purposes. We recognize that such funds made up 6 percent of the Smithsonian's operating budget in fiscal year 2006 and went towards other expenses. We did not analyze the Smithsonian's decision-making on how it distributed these unrestricted funds; however, it appears that the stated plan of the Smithsonian's Board of Regents' Committee on Facilities' Revitalization to review existing funding priorities to determine if any funds are available to redirect toward facilities needs is a positive step. The focus of our report is on the need for the Smithsonian to develop new strategies to raise additional revenue in order to significantly increase the amount of unrestricted funds that are available to be used for facilities needs.
4. The Smithsonian expressed concern that we referenced the possibility of raising private funds to address facilities needs, and the Smithsonian stressed the difficulty of raising funds from donors for the operations,

revitalization, and maintenance of facilities. The difficulty described by the Smithsonian of raising such funds from donors underscores the need for the Smithsonian to develop new funding strategies—that do not rely on individual donors’ preferences—to raise revenue for these needs. For example, most of the eight funding options that the ad hoc committee on facilities revitalization considered (in addition to the option of seeking increased federal funds) and that we describe in our report do not depend on convincing donors to provide funds for facilities. Indeed, this difficulty demonstrates the importance of our recommendation that the Board analyze these eight proposed funding strategies in a more comprehensive manner in order to develop and implement a funding strategy. At the same time, the finding of the Smithsonian’s commissioned report on fund-raising that all 12 organizations surveyed reported that the effort to secure support for deferred maintenance has been unsuccessful, except when embedded in programmatic improvements, describes both a perceived difficulty in securing private funds for deferred maintenance in general, but also the potential to do so when such projects are embedded in programmatic improvements.

5. While the Smithsonian concurred with our recommendation to include privately funded projects as well as federally funded projects in its capital plan and cost estimate of facilities projects through fiscal year 2013, the Smithsonian noted that much of this information is already available to stakeholders in other documents and during processes such as congressional hearings. We recognize the Smithsonian includes information on privately funded projects in various documents that go to OMB, Congress, and other stakeholders. However, given that the capital plan is the primary document that defines the Smithsonian’s long-term capital strategy, and that the Smithsonian has used its cost estimate for facilities’ projects through 2013 to describe its long-term funding needs for facilities to Congress and other stakeholders, it is important that private trust funds be included in these documents so that the documents will provide a comprehensive picture of the full scope of facilities needs and the Smithsonian’s long-term strategy for meeting those needs.



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# Appendix IV: GAO Contact and Staff Acknowledgments

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## GAO Contact

Mark L. Goldstein, (202) 512-2834 or goldsteinm@gao.gov

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## Staff Acknowledgments

In addition to the contact named above, David Sausville, Assistant Director; Brandon Haller; Susan Michal-Smith; Alwynne Wilbur; Carrie Wilks; and Adam Yu made key contributions to this report.

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