

## FACILITIES MAINTENANCE

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2002 ACTUAL <sup>1</sup>	199	14,464	10	1,709	0	16	0	0
FY 2003 ESTIMATE <sup>1</sup>	220	17,022	0	1,933	0	16	0	0
FY 2004 ESTIMATE	359	40,615	0	1,933	0	16	0	0

<sup>1</sup> For comparative purposes, the FY 2002 and FY 2003 estimates have been adjusted to reflect the restructuring of the Office of Facilities Engineering and Operations line items; this does not include the transfer of facilities management services staff and funds from other units which is reflected in FY 2004.

### STRATEGIC GOAL: MANAGEMENT EXCELLENCE

#### Federal Resource Summary by Performance Objective

Performance Objective	FY 2003		FY 2004		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
<b>Management Excellence:</b>						
Execute an aggressive, long-range Smithsonian facilities program	209	14,320	348	37,060	139	22,740
Ensure safety and protection of Smithsonian facilities, national collections, staff, visitors, and volunteers	11	2,702	11	3,555	0	853
<b>Total</b>	<b>220</b>	<b>17,022</b>	<b>359</b>	<b>40,615</b>	<b>139</b>	<b>23,593</b>

### BACKGROUND AND CONTEXT

Facilities Maintenance focuses on facility preservation activities and encompasses the upkeep of property and equipment, or the work necessary to realize the originally anticipated useful life of a fixed asset. To realize the intended design life and full economic value of Smithsonian facilities and the revitalization investment, the Smithsonian must double its day-to-day facility preservation activities. Concurrently, the Smithsonian must shift its maintenance approach to a modern, cost-effective program that is centered on reliability and risk management and reinforced through qualitative standards and cost-effective application of technology.

For FY 2004, the estimate includes an increase of 139 FTEs and \$23,593,000. This increase includes 33 FTEs and \$11,430,000 transferred from

the Facilities Capital account, and 24 FTEs and \$7,218,000 for programmatic increases; \$583,000 for necessary pay for staff funded under this line item; and 82 FTEs and \$4,362,000 to reflect the transfer of facilities management services from the museums and research centers.

## MEANS AND STRATEGY

To support the Institution's goal of Management Excellence, the Office of Facilities Engineering and Operations will initiate an aggressive long-range Smithsonian facilities maintenance and revitalization program, using a Reliability Centered Maintenance (RCM) approach. RCM is a maintenance philosophy that incorporates the logical and cost-effective mix of predictive, proactive, preventive, and reactive maintenance practices. The elements of the program include the following:

- **Predictive maintenance** – Vibration analysis, airborne ultrasonic analysis, thermographic scanning, motor-circuit analysis and radiography are a few of the latest technologies that will be implemented to detect impending failure and address causes before failure occurs.
- **Proactive approach** – This aspect of RCM gets in front of the operating problems by engineering out the problem beforehand. Root Cause Failure analysis is essential to identify and solve long-standing reliability issues. Engineering adjustments driven into the design of equipment for installation in Smithsonian facilities is a critical area that must have focus for lowest life-cycle costs over time.
- **Preventive maintenance** – Maintenance work in this category is cyclic or time-driven. Examples of this work include lubricating machinery, adjusting equipment tolerance, cleaning and adjusting electrical switchgear contacts, inspecting valves, painting, and sealing roofs.
- **Reactive maintenance** – Maintenance work is responsive and includes routine repair and replacement of broken parts; spot repairs to roofs, roads, and building exteriors/interiors; repairs to broken water mains; and replacement of broken parts on building systems.
- **Maintenance work force** – Improving the skills of the Smithsonian maintenance work force is essential to modernizing our maintenance approach. Extensive training and technology familiarization is required. However, because in-house maintenance forces are not adequate to fully care for all maintenance requirements, maintenance work that is infrequently needed, that requires expensive tools, or requires specialized equipment will most often be done by a contractor who does this work on a regular basis.

## STRATEGIC GOALS AND FY 2004 ANNUAL PERFORMANCE GOALS

### Management Excellence

#### ***Execute an aggressive, long-range Smithsonian facilities program (348 FTEs and \$37,060,000)***

- Implement 90 percent of FY 2004 maintenance program plan action items on schedule
- Conclude the integration of facilities management staff in FY 2004
- Establish baseline standards for response times and improved performance

#### ***Ensure safety and protection of Smithsonian facilities, national collections, staff, visitors, and volunteers (11 FTEs and \$3,555,000)***

- Secure funding and maintain full operational level of security systems in each museum

### FY 2004 REQUEST—EXPLANATION OF CHANGE

The FY 2004 budget estimate includes an increase of \$23,593,000 and 139 FTEs. Included are increases of 33 FTEs and \$11,430,000, reflecting the transfer of minor repair and maintenance staff and funding from the Facilities Capital account to Salaries and Expenses; 82 FTEs and \$4,362,000 to be transferred from museums and research centers to complete the integration of facilities management into a single facilities organization; and \$583,000 for necessary pay. The request also includes a program increase of 24 FTEs and \$7,218,000. These resources will allow the Smithsonian to develop and implement a structured maintenance program, as recommended by the National Academy of Public Administration (NAPA). The request will provide additional resources to improve reliability of mechanical equipment, reduce maintenance and energy costs, and ensure safer facilities for visitors and staff. The increases are as follows:

- (+\$5,444,000, +19 FTEs) The requested funds will allow the Smithsonian to begin to attain funding levels recommended by NAPA for maintenance of the Institution's facilities, ensuring optimal (lowest) life cycle costs for the current plant. The request provides \$1,244,000 and 19 FTEs for 14 HVAC mechanics and 5 maintenance mechanics, and \$4,200,000 to support the Institution's facilities maintenance efforts. The \$4,200,000 will be used to contract for inspection, testing, and preventive maintenance of automatic/fire/roll-up doors, electrical panels, fire alarm systems and fire sprinklers; testing and cleaning of cooling towers; and thermographic and vibration analysis.
- (+\$356,000, +4 FTEs) Included in this line item but justified under the National Museum of the American Indian are resources to support the maintenance and operation of utility systems in the Museum on the Mall.
- (+\$60,000, +1 FTE) Included in this line item but justified under the National Museum of the American Indian are resources to provide minimum levels of security, operation, and related building engineering monitoring for the new Mall Museum.

- (+\$528,000) Included in this line item but justified under the National Air and Space Museum are resources to support facilities management services at the Udvar-Hazy Center.
- (+\$830,000) By FY 2004, warranties on equipment and construction purchases made in FY 2002 with Anti-terrorism Emergency Supplemental funds will expire. The requested funds will allow the Smithsonian to continue maintenance of magnetometers and x-ray equipment, concrete planters and plantings, pop-up barriers, and permanent vehicle barriers.

If the FY 2004 request is not allowed, the Smithsonian will not be able to develop and implement a structured maintenance program, nor provide adequate maintenance services. Collections will be at risk, as failures to steam traps will continue, resulting in increases to humidity levels. Lack of automated preventive testing and inspection processes will worsen inefficient maintenance practices and force higher lifetime costs. Annual maintenance required for special equipment will not be performed. Maintenance of mechanical spaces will either not occur or be performed inadequately. Risks of mold and microbe proliferation, indoor air quality problems and sick building syndrome, and loss of energy will increase. The Institution will have to commit an increasing amount of revitalization funds for repair of existing equipment and emergency measures for sudden failures, reducing the funds available for long-term repair and renovation of facilities. The fewer long-term systems replacements accomplished, the more short-term repairs will be required to failing equipment. The entire revitalization investment will be degraded prematurely, demanding early replacement of new components and systems. In addition, the Smithsonian will be unable to maintain magnetometers and x-ray equipment. Failure rates for equipment will increase, putting visitors at risk and forcing the closure of museum entrances.

**NONAPPROPRIATED RESOURCES**—General trust funds provide support for salaries and benefits of personnel and related maintenance costs associated with the upkeep of Smithsonian buildings. Donor/sponsor designated funds provide additional support for maintenance costs.