Statement of Dr. David J. Skorton, Secretary of the Smithsonian Institution

On the Fiscal Year 2019 Request

Subcommittee on Interior, Environment and Related Agencies

Committee on Appropriations, U.S. House of Representatives

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The Smithsonian greatly appreciates the continued support of the Congress and the American people in allowing us to fulfill our crucial role of advancing the civic, educational, scientific, and cultural life of the nation. As a public trust, the Smithsonian addresses some of the world's most complex challenges and broadens access to information for citizens, students, and policy makers.

Thanks to the generous bequest of English scientist James Smithson, Congress established the Smithsonian Institution in 1846 as an independent trust instrumentality, a unique public-private partnership that has proven our value as a cultural and scientific resource for 172 years. Federal funding provides an indispensable foundation for all we do, not only directly, but also through the confidence it shows in us, allowing us to attract greater private support.

In pursuit of our mission to advance "the increase and diffusion of knowledge," the Smithsonian is a world leader in research and discovery, addressing today's relevant issues and helping the American people understand our role in the world through the arts, humanities, and sciences. Our expert and nimble staff create unprecedented access to our treasures and inspire educators, students, and learners of all ages.

The Smithsonian is large and diverse, encompassing art, history, science, education, and culture. We operate 19 museums, 21 libraries, 9 research centers, the National Zoo, and have 216 Affiliates in 46 states, Puerto Rico, and Panama. We open every day of the year, except Christmas Day. We have research and education facilities in eight states and the District of Columbia, and are involved in research in more than 145 countries. For the last full fiscal year, our museums received more than 30 million visits, and another 4.5 million people visited our traveling exhibitions. In addition, the magazines Smithsonian and Air and Space have a combined readership of nearly eight million people. The Smithsonian Channel is distributed by all of the top television cable service providers and is available in more than 30 million households nationwide. Our K–8 STEM curriculum is used in 1,500 school districts, in all 50 states, and more than 20 other countries.

Our collections total approximately 155 million objects, which includes more than 145 million scientific specimens, more than 340,000 works of art, and more than two million library volumes. We also care for 156,000 cubic feet of archival material, 16,000 musical instruments, and more than 2,000 live animals. Our natural history collection represents the largest, most comprehensive collection in the world. Our responsibilities also include preserving and maintaining Samuel Morse's telegraph; Thomas Edison's light bulb; the Hope Diamond; the Wright Flyer; Amelia Earhart's plane; Louis Armstrong's trumpet; labor leader Cesar Chavez's jacket; the Lansdowne portrait of George Washington; the Congressional Gold Medal awarded to Japanese American World War II veterans; Harriet Tubman's silk and lace shawl; the world's largest collection of whale skeletons; Susan B. Anthony's rosewood and ivory gavel used to convene conventions for women's suffrage; a wide array of Asian, African, and American art; the spectrograph that enabled astronomer Vera Rubin to posit the existence of dark matter; the space shuttle Discovery; and Julia Child's kitchen. We hold all our objects in trust for the American people and preserve these priceless national treasures for future generations to enjoy.

In fiscal year (FY) 2017, our visitors enjoyed approximately 100 new exhibitions, including "Yayoi Kusama: Infinity Mirrors" at the Hirshhorn Museum and Sculpture Garden; "Narwhal: Revealing an Arctic Legend" at the National Museum of Natural History; "Cultivating America's Gardens," a collaboration of Smithsonian Gardens and Smithsonian Libraries, at the National Museum of American History; "The Virtue in Vice" at Cooper Hewitt, Smithsonian Design Museum; "Watch This! New Directions in the Art of the Moving Image" at the Smithsonian American Art Museum; "Parallax Gap" at the Renwick Gallery; "America's Presidents" at the National Portrait Gallery; and "Your Community, Your Story: Celebrating Five Decades of the Anacostia Community Museum, 1967–2017" at the Anacostia Community Museum. The National Museum of African American History and Culture installed 11 thought-provoking permanent galleries within three principal areas of History, Culture, and Community. Renewal of major exhibition halls include "Religion in Early America" and "American Democracy: A Great Leap of Faith" located in the renovated West Wing of the National Museum of American History and the recently modernized and reopened Freer and Sackler Galleries of Asian Art.

This year we are implementing our new Strategic Plan. Our vision for the Strategic Plan is that, by 2022, the Smithsonian Institution will build on our unique strengths to engage and inspire more people, where they are, with greater impact, while catalyzing critical conversations on important issues affecting our nation and the world. The plan sets forth a number of goals: to spark new conversations and address complex challenges; to reach one billion people a year with a "digital-first" strategy; to better understand and impact 21st-century audiences; to drive large, visionary, interdisciplinary research and scholarly projects; to preserve natural and cultural heritage while optimizing our assets; and to provide a cost-effective and responsive infrastructure that will enable us to accomplish all of those goals. At the heart of the plan is our number one goal: to work more effectively as "One Smithsonian" to achieve greater reach, greater relevance, and more profound impact, in order to more fully serve the American people and others around the world.

We will catalyze new conversations and address complex challenges. Because of our combination of world-class museums, cutting-edge research, and accessible educational programs, the Smithsonian is uniquely qualified to address a range of relevant topics. That is why a goal of the strategic plan is to be known as a leading convener of dialogue on global and national issues. One of the ways we are implementing it is through a series of conversations with thought leaders on our website called Smithsonian Second Opinion at www.smithsoniansecondopinion.org. Thus far, we have examined two topics, immigration and earth optimism, both of which we have examined in other venues.

The National Museum of American History exhibition, "Many Voices, One Nation," explores how a multiplicity of backgrounds, ethnicities, and religions combined to make the United States into what it is today. And last year's Smithsonian Folklife Festival featured a series of programs called "On the Move," which allowed visitors to learn about immigration and migration.

On Earth Day 2017, we convened the Earth Optimism Summit, a three-day event featuring more than 150 scientists, thought leaders, philanthropists, conservationists, and civic leaders from across the political spectrum. It explored solutions to global conservation problems and provided a platform to discuss ways to apply findings and replicate successes.

In December, we convened the Long Conversation, a continuous 7-hour discussion with a string of interesting and influential people from the arts, humanities, and sciences: the cellist Yo-Yo Ma, chef José Andrés, and comic book writer Gabby Rivera, among many others. They each discussed one idea about why they are optimistic about the future.

One of our biggest catalysts for conversation has been the National Museum of African American History and Culture. Not only is it a breathtaking building containing poignant stories of tragedy and triumph, it

has inspired a larger discussion about social inequities, the role of societal diversity, and the path forward if we hope to heal our racial divisions.

We will reach one billion people a year by transforming our organizational culture so that we view our work through a "Digital First" lens. It is something we have anticipated, so we have been laying the groundwork for many years. Increasingly we are devoting resources to make our content relevant and consumable on every mobile device.

Digital technology allows us to reach new and diverse audiences more than ever before. In FY 2017, Smithsonian websites attracted more than 150 million unique visitors, and 11 million people currently follow us on Facebook and Twitter, with tens of thousands more engaging with us on other Internet platforms. Our Sidedoor podcast debuted in October 2016, featuring behind-the-scenes stories from the Smithsonian's museums, research centers, and world-renowned experts. The podcast has reached people in all 50 states and more than 146 countries, with more than 1.25 million downloads to date, and *The Atlantic* ranked it the 25th-best podcast of 2017. Last year, the Smithsonian Astrophysical Observatory developed a mobile app that allowed users to have a virtual view in real time of the solar eclipse as it crossed the continental United States on August 21, 2017. And our staff members are enlisting the public to create hundreds of new Wikipedia articles based on stories in our collections about groundbreaking artists and scientists from underrepresented populations. These stories will rise to the top of search engine results, maximizing their reach and helping history's hidden figures get the recognition they deserve.

For years, we have been digitizing our objects, specimens, archival materials, books and journals to make them more accessible to the public. The goals of our digitization program are to reach a wider audience, change how audiences can engage with collections, change how researchers can better study and understand our collections, and expand our ability to store and archive collections for future generations. As of FY 2017, our museums and libraries have created digital images for approximately 3.4 million objects, specimens, and books, and digital records for more than 31 million artifacts and items in the national collections. Our archives have created 3.9 million digital images, and now have digital records and metadata for close to 120,000 cubic feet of archival material. As of the end of FY 2017, nearly 10,000 digital initiative volunteers had transcribed more than 300,000 pages of data for our Transcription Center since the launch of the platform in 2013. Furthermore, we have implemented rapid-capture digitization, an innovative conveyor-belt technology to accelerate the digitization of our collections. We reached another milestone when the Smithsonian's Digitization Program Office (DPO) worked with the National Museum of Natural History's Department of Botany to digitize and transcribe the Museum's one-millionth botanical specimen.

Thanks to the work of our DPO, we are now leaders in the field of 3D scanning, allowing millions of people to see our treasures and specimens in a new light. Users can connect with our collection of 3D-digitized Smithsonian objects available online, creating replicas of Smithsonian objects via 3D printers for scientific research or use in the classroom. The digitization team's new 3D collection website features updated content and functionality, with the most recent advance allowing viewers to interact with Smithsonian collection objects with Virtual Reality applications. The team is also automating the 3D scanning pipeline so that hundreds of objects can be scanned in just weeks.

We will better understand and impact 21st century audiences. A large aspect of our plan will be implemented through our educational offerings that serve millions of people annually from preschoolers to senior citizens. For instance, the Smithsonian Science Education Center (SSEC) publishes K–8 STEM curriculum materials that 1,500 school districts representing all 50 states and 25 countries have adopted. SSEC also offers related leadership and teacher professional development and an array of free,

downloadable STEM-oriented teacher and student resources. The Smithsonian Learning Lab website created by the Smithsonian Center for Learning and Digital Access offers teachers and students free digital access to more than a million resources from across the Smithsonian. Through these and other educational offerings, we will reach all Washington, D.C. metropolitan-area K–12 students. In FY 2017, the Smithsonian Institution Traveling Exhibition Service (SITES) took large and small exhibitions to regional museums and provided educational materials to schools and libraries. SITES brought 31 exhibitions to 142 communities in all 50 states, the District of Columbia, and Guam, reaching an audience of 4.5 million people. Last year alone, SITES sent eight poster exhibitions to 5,450 schools, museums, and libraries.

In our museums and research centers, we dedicate spaces to education, learning, and discovery. The Institution also serves the public appetite for education through the National Museum of American History's Object Project, a 4,000-square-foot space in the Museum's Innovation Wing; the National Museum of Natural History's Q?rius, our 10,000-square-foot science education center; and the National Air and Space Museum's various education spaces that are integrated into exhibits. In 2018, the National Museum of the American Indian's George Gustav Heye Center will open its imagiNATIONS Activity Center. In addition, we continue to connect with young learners through the Hirshhorn Museum and Sculpture Garden's ARTLAB+ program for teenagers and Cooper Hewitt's Smithsonian Design Center in New York City's Harlem neighborhood. Smithsonian Affiliates also hosts Spark!Lab to provide unique Smithsonian educational experiences through hands-on invention centers developed by the National Museum of American History.

Our work toward a groundbreaking collaboration with the Victoria and Albert (V&A) Museum in London, which we announced in 2016, continues to progress. This collaboration will consist of a combined exhibition space jointly curated by Smithsonian and V&A staff members as well as a separate space for Smithsonian self-curated exhibitions. We expect the new spaces to open in 2023 and that they will help the Smithsonian expand our scope to reach new audiences without the need for federal funding or new capital expenditures.

Understanding and engaging 21st-century audiences necessitates doing a better job reaching out to diverse and traditionally underserved audiences. The National Museum of African American History and Culture is certainly a large part of that effort, as are the National Museum of the American Indian and two pan-institutional efforts that celebrated their 20-year anniversaries in 2017: the Smithsonian Latino Center (SLC) and the Smithsonian Asian Pacific American Center (APAC).

The Smithsonian Tropical Research Institute in Panama and the National Portrait Gallery are both bilingual, a key part of reaching broader audiences. The SLC is helping us expand our Spanish-speaking programs, exhibitions, and workforce. For instance, their Young Ambassadors Program (YAP) has helped high school seniors gain first-hand experience working in museums through summer internships. Of the more than 240 YAP alumni, more than 96% have graduated from college. The SLC also recently drove around Baltimore, using a mobile ofrenda, or altar, to teach audiences about Día de los Muertos. And one of the more exciting plans the SLC is working on is the creation of a bilingual, interactive Latino Gallery in the National Museum of American History. The Latino Gallery will serve as the focal point and intellectual hub for Latino scholarship, connecting programs and exhibitions across the Institution's museums and research centers. It will expand national dialogue about, and the world's appreciation for, what it means to be an American.

APAC works to enrich the appreciation of America's Asian Pacific heritage and empower Asian Pacific American communities by fostering a sense of inclusion within the national culture. One of the newest APAC initiatives is a series of pop-up culture labs, experimental models of audience engagement. They

have brought together artists and scholars in Washington, D.C., New York City, and Hawaii to explore themes resonant with the Asian Pacific American community.

An exciting new project is the Smithsonian American Women's History Initiative, which will amplify women's voices. Curators and educators from across the Institution will work together to create new exhibitions, programs, and symposia centered on women's contributions to the nation. The Initiative also will support research, educational and public programs, collections research, and acquisitions.

We will drive large, visionary, interdisciplinary research and scholarly projects. One of our greatest resources is our capacity for exemplary research and scholarly projects. By 2022, the Smithsonian strives for people to know us as much for our contributions to the future as for preserving the past.

As an ambassador of goodwill and a research partner, we are involved in research in more than 145 countries by coordinating with strategic allies across the federal Government and working with foreign governments and the private sector. Through our Office of International Relations and our science, art, history, culture, and education units, we work with virtually every cabinet-level federal agency and numerous other organizations.

In addition, we leverage our strengths with our strategic national and international partners for a combined greater impact. For instance, we increasingly direct our international efforts toward cultural heritage protection. Last March, the Smithsonian and the U.S. Department of State announced a project to enable Iraq's State Board of Antiquities and Heritage and others to document and stabilize precious artifacts in the ancient city of Nimrud.

These and other Smithsonian projects foster international collaboration and bring together governments, foundations, and the world's leading thinkers. We bridge disciplines and borders, whether rescuing art from the rubble of damaged galleries and museums, helping to save endangered species, or inspiring tomorrow's artists, scientists, and leaders in all disciplines. Beyond the walls of our museums and laboratories, our teams are making discoveries, preserving the past, and sharing insights with audiences of all ages. By working with governments and organizations around the world, we amplify our impact. Cross-disciplinary collaboration gets results and produces a shared legacy of progress and discovery.

With our international partners and worldwide reach, the Institution is particularly well suited to study biodiversity issues. The Smithsonian's ForestGEO (Global Earth Observatories) network is a worldwide partnership of more than 95 institutions working to monitor the health of six million trees (including 10,000 different species) on 63 plots in 24 countries. Tennenbaum Marine Observatories, part of MarineGEO, replicates this success by assessing the health of coastal areas and the oceans at large, with the goal of determining how to manage these important resources. A generous gift from Suzanne and Michael Tennenbaum in 2012 allowed us to create the Tennenbaum Marine Observatories Network, the first worldwide network of coastal ecological field sites. It is now ahead of schedule and on track to have 15 active worldwide sites by the end of 2018.

Smithsonian scientists also work around the world to help save endangered, vulnerable, and threatened species, such as Asian elephants, Panamanian golden frogs, African kori bustards, Asian tigers, Przewalski's horse, the African scimitar-horned oryx, North American black-footed ferrets, Cuban crocodiles, Asian clouded leopards, and giant pandas. And to prevent coral from going extinct, the Smithsonian Conservation Biology Institute is creating a large repository of frozen coral tissue. It is critical to the more than 1 billion people worldwide who rely on coral for food, medicine, and their livelihoods.

The Smithsonian's staff scientists tackle other vital issues of the day, make important discoveries, and share them with the public. For example, scientists at the Harvard-based Smithsonian Astrophysical

Observatory continue to explore the universe's boundless mysteries, from carbon-based planets capable of supporting life to a planet currently forming that is orbiting Earth-like around a young star, light-years away from our own solar system.

The National Museum of Natural History continues its leadership of an international initiative devoted to developing DNA barcoding as a global standard for the identification of biological species. This technique can identify species by using a short DNA sequence taken from a standardized position in the genome as a molecular diagnostic marker. As a recognized leader in DNA barcoding, the Smithsonian seeks to increase its research and training capacity to better work with strategic partners in expanding the frontiers of knowledge in this exciting field.

We will provide a nimble, cost-effective, and responsive administrative infrastructure.

This strategic plan goal touches on what we can do as an institution to be more efficient and effective. It entails strengthening and developing our internal leadership and intellectual capital, and streamlining our organizational structure. It means developing a new multistep approach to long-term operational and financial planning, budgeting, and reporting. It involves integrating risk management and mitigation into all our operations and decision-making. This goal also lays out the need to upgrade our administrative technologies to become more responsive and comprehensive in all enabling functions. Finally, it necessitates allowing our business model to evolve in order to grow revenues from philanthropy and enterprises.

We will preserve natural and cultural heritage while optimizing our assets.

Collections stewardship remains a priority. Our collections are a vital national asset, and we are improving storage conditions to balance the preservation of and access to these collections. We maintain collections as valuable resources for scientists from federal agencies such as the Department of Agriculture, the Department of Defense and the United States Geological Survey. In many instances, the partnerships with other agencies are integral and complementary to Smithsonian's research. We are active in the interagency process, including that of the Office of Science and Technology Policy to coordinate our efforts with federal agencies and avoid duplication of activities.

Today, we still use scientific collections acquired a century or more ago to address the effects of global change, the spread of invasive species, and the loss of biological diversity and its impact on interconnected ecosystems. Federal, state, and local authorities use our collections to answer questions about flu epidemics, oil spills, volcanic eruptions, and aircraft downed by bird strikes. Our collections in history, art, and culture are no less significant to scholars. Our digitization team 3D scanned the Freer Gallery of Art's sixth-century Chinese "Cosmic Buddha" sculpture, allowing researchers to examine its highly detailed surface and revise the age of the sculpture. Our Center for Folklife and Cultural Heritage promotes greater understanding and sustainability of cultural heritage across the United States and around the world through research, education, and community engagement. Through the Recovering Voices initiative, scholars at the Center work with the National Museum of American Indian and National Museum of Natural History to save endangered languages and the knowledge preserved in them. Through our repatriation program, these two museums have also consulted with Native Americans and repatriated or made available for repatriation the remains of more than 6,000 individuals and more than 250,000 objects of cultural patrimony, totals that far exceed any other museum complex in the United States.

In addition to our collections, this strategic plan goal also focuses on the 605 facilities totaling more than 13 million square feet we own and lease. The broad range of ages, uses, and locations of the

Smithsonian's buildings present a unique preservation challenge, but we are committed to the safety of our visitors, employees, and volunteers, in addition to working in the most sustainable way we can.

Given the Institution's high profile and popularity, the Smithsonian's facilities require constant care and maintenance to enable us to serve our visitors. Our next major facilities capital project will be the renovation of the National Air and Space Museum building on the National Mall. The 750,000-square-foot building, which opened in 1976, hosts six to seven million visits each year and has welcomed more than 330 million visits in the past 40 years, far exceeding its original projections. Smithsonian Facilities staff teams have spent the past three years planning for and overseeing the design of this massive project, which will be the first major overhaul of the building's infrastructure. This work is necessary to ensure that the building can continue to handle its large number of visitors and provide a suitable environment for the priceless artifacts of aviation and space flight.

We greatly appreciate the additional investment in this critical project in the recently enacted Fiscal Year 2018 Omnibus Bill.

The Strategic Plan focuses on our main goal to work as One Smithsonian, which means more collaboratively, more efficiently, and more effectively to achieve greater reach, greater relevance, and more profound impact. As the world's largest museum, research, and education complex, we strive to maximize our strength for the good of all.

Fiscal Year 2019 Summary of Requested Funds

For fiscal year 2019, the Smithsonian requests $957.4 million to fund operating expenses and revitalization of its physical infrastructure. The amount includes $737.9 million for Salaries and Expenses (S&E) and $219.5 million for Facilities Capital projects, which includes $127 million for the revitalization of the National Air and Space Museum.

Within the total increase requested for S&E, $3.5 million is for fixed costs to sustain base operations, including rent, utilities, and related costs; $4.9 million to bring our base funding to the FY 2017 enacted level; and $5 million for maintenance needs throughout the Institution.

Salaries and Expenses Program

Fixed-Cost Increases

The request for S&E includes a $3.3 million increase for utilities, rent, communications and other fixed costs. The increase will address consumption and rate changes in the utilities account and inflationary and program needs in rent accounts. The increases for communications and other support will provide for higher software licensing and maintenance costs, inflationary increases for library subscriptions, and new requirements for Smithsonian activities taking place on the National Mall. An additional increase of $0.2 million is included for a minor adjustment to the Workers' Compensation account for costs incurred in FY 2017.

The request also includes an adjustment of $4.9 million to account for prior year fixed-cost increases for pay and utilities. These prior-year cost increases were funded in the recent FY 2018 Omnibus Appropriations Act.

Facilities Maintenance Increase

The FY 2019 request for Salaries and Expenses includes an increase of $5 million to support maintenance of existing facilities and systems. The Smithsonian's facilities maintenance program is responsible for the

maintenance and repair of the infrastructure of more than 13 million square feet of owned and leased buildings and structures and 43,000 acres. The buildings and structures range from well-known museums to supporting structures such as guard booths, animal shelters, and hay barns. Much of this space houses the nation's collections of historical, scientific, and cultural significance. The facilities maintenance program focuses on facility preservation activities and encompasses the upkeep of property and equipment. Inadequate short-term funding for facilities maintenance can often lead to much larger long-term costs if facilities fall into disrepair and require more expensive interventions.

As new and renovated museum and research center spaces open, maintenance requirements also change due to technological advances and the growing reliance on infrastructure-supporting systems. These new assets added new functionality, technology, and a more complex level of maintenance.

The request includes funding for utility systems repair operators, engineering technicians, and a project supervisor. The new staff will improve the preventive maintenance program and slow the increase in deferred maintenance requirements.

The state of our buildings' roofs poses a risk to staff and visitor safety, as well as to the preservation of collections. Funding included in the request for Facilities Maintenance will allow the program to continue fixing those roofs in the greatest need of repair. The roofing repair program also advances the Institution's efforts to comply with federal initiatives on energy efficiency and sustainable buildings.

The request will also provide funds to replace security equipment, improve barrier and bollard and anti-terrorism mitigation systems, and make progress on other deferred maintenance activities.

Facilities Capital Program

The Facilities Capital Program underpins the Smithsonian's mission and represents an investment in the major assets of the nation. The program is intended to maintain modern facilities, often within the country's national historic and culturally iconic buildings, which satisfy public programming needs, facilitate world-renowned research efforts, and house the priceless national collections.

Within the Facilities Capital Program, revitalization involves making major repairs or replacing declining or failed infrastructure to address the problems of advanced deterioration. Once completed, these projects will enable the Smithsonian to avoid the failures in building systems and ensure increased safety of our staff, visitors, collections, and scientific data.

Facilities Capital Request

The Institution's FY 2019 request for the Facilities Capital Program is $219.5 million. The request continues a multi-year strategy for the major renovation of the National Air and Space Museum (NASM) and ongoing revitalization efforts at other museums on the Mall and in New York as well as research centers in Maryland, Arizona, and the Republic of Panama. The request includes $17 million for facilities planning and design of future revitalization projects.

NASM opened in 1976 to commemorate America's pioneering role in the development of aviation and space flight. The 750,000-gross-square-foot building (including approximately 161,145 square feet of exhibit galleries) preserves and displays artifacts, aeronautical and space flight equipment, significant historical data, and related technologies. The exhibit galleries hold the largest collection of historic air and spacecraft in the world.

The exterior marble façade of the NASM building is a feature of the original construction and forms the primary exterior weather seal for the envelope on all surfaces other than at the roofs, terraces, skylights, and window walls. The panels are porous, show signs of aging and, in some cases, damage in the form of visible warping and cracks. The entire envelope must now be replaced.

NASM's mechanical systems are original to the 1976 building and designed to support only two million visitors annually. Within six months of opening, five million visitors were recorded. Today, it remains the most visited museum in the United States (and second in the world), with between seven and eight million visitors annually. As a result, decades of strain on these systems have led to frequent breakdowns and failures, increasing repair costs. The systems have exceeded their useful lifespans.

The multi-year, multi-phase building systems and envelope renovation project will replace the building's marble façade, improve blast and earthquake resistance, upgrade the energy efficiency of the exterior envelope, replace the mechanical systems, and provide more secure access and egress. A primary goal for the planned heating, ventilation, and air-conditioning replacement portion of the project is to provide the exhibitions area and all occupied spaces with appropriate temperature and humidity controls.

Accordingly, the Smithsonian requests $127.0 million in FY 2019 to fund construction activities and award contract(s) for continued design-assist work, constructability reviews, estimating, and for early procurement of long-lead items, such as marble cladding, artifact protection, and preparation of swing space for staff. With funding provided in prior years, design work began in June of 2014 with the award of the concept/schematic design contract. The design contract was awarded in March of 2016, and design was completed in January of 2018. The total cost of the revitalization project is $650 million, with an estimated completion date of 2024. To date, we are appreciative of the $250 million we have received toward the NASM revitalization project.

To protect against the possibility that the exterior stone panels may fail, the Smithsonian erected a temporary covered walkway around vulnerable portions of the building in January of 2015. The covered walkway will remain in place until the façade replacement work is complete.

In addition to the NASM revitalization project, the FY 2019 request for Facilities Capital includes $92.5 million for other major revitalization efforts that include:

- NASM's Udvar-Hazy Center ($10 million), to repair leaks in the roof and envelope
- National Zoological Park, ($18.5 million), to renew the Migratory Bird Program and revitalize the Bird House and Great Flight Cage Aviary; upgrade permanent access control fencing and visitor screening checkpoints; and replace failed or failing life-safety infrastructure systems
- Cooper Hewitt, Smithsonian Design Museum ($5.8 million), to replace chillers and the cooling system with new, energy-efficient equipment at the more than 100-year-old Carnegie Mansion in New York
- National Museum of American History ($4 million), phase 2 of project to upgrade the museum's objects processing facility to meet collections care and security standards for storage and temperature and humidity control
- National Museum of Natural History ($3.5 million), to upgrade obsolete electrical systems and components
- National Museum of the American Indian ($4 million), to replace and modernize security systems and the fire-panel system at the George Gustav Heye Center in the U.S. Customs House in lower Manhattan
- Multiple projects at the Smithsonian Institution (Castle) Building and Whipple Observatory ($2.4 million), including replacement and repairs of mechanical, electrical and plumbing systems, facades, and roads

- Smithsonian Tropical Research Institute ($1.5 million), for installation of a fire-protection system and water reserve tank for potable water at the Galeta Marine Station
- Smithsonian Environmental Research Center ($2 million), for infrastructure upgrades, including lighting, plumbing, and air-conditioning for the 18th century-era Homestead House
- Suitland Collections Center ($4 million), to build a decontamination chamber within an existing building to begin the process of decontaminating the collections at the Garber Facility, complete the installation of emergency generators, and replace outdated switchgear
- Fire-alarm panel replacement and upgrades to mass-notification systems across multiple Smithsonian facilities ($4 million), to continue replacing outdated fire-alarm panels with a new, more advanced fire-detection system

The FY 2019 request for Facilities Capital projects includes $15.9 million for smaller individual projects of less than $1 million each throughout the Institution. The projects usually involve capital repair or replacement of individual systems or components. The amount supports emergency repairs and services, and Supervision and Administration, including cost-estimating staff, construction managers, and contract specialists to supervise and administer construction contracts.

The Institution requests a total of $17 million for planning and design of several major revitalization projects at Mall museums and the National Zoo as well as numerous smaller projects, including security upgrades, space utilization studies, and master planning.

Conclusion

The Smithsonian is composed of talented and dedicated people who work on our behalf, both in public and behind the scenes. They include more than 6,700 employees: scientists, scholars, curators, researchers, historians, and the people who maintain our facilities and protect our visitors. We also rely on more than 6,900 on-site volunteers, nearly 800 research Fellows, 1,300 research associates, more than 1,700 interns, and approximately 10,000 digital initiative volunteers. All of them benefit the Smithsonian and the world many times over.

Today, with our numerous museums, distinguished research and scholars, education programs, iconic treasures, and vast array of information made accessible through digital media, the Smithsonian remains a resource of extraordinary value for the American people and the world. The Smithsonian will continue to prove its worth as a steward of our past and a wise investment in the future. With the continued support of Congress and the guidance of our new Strategic Plan, we will continue to evolve to meet the needs of our visitors in person and online, working to achieve greater reach, greater relevance, and a more profound impact. Thank you for the opportunity to testify today.