

Overview

Construction and Environmental Compliance and Restoration (CECR) provides for design and execution of programmatic and non-programmatic discrete and minor revitalization construction of facilities projects, facility demolition projects, and environmental compliance and restoration activities.

The Construction of Facilities (CoF) program ensures that the facilities critical to achieving NASA's space and aeronautics programs are the right size and type, and that they are safe, secure, environmentally sound, and operated efficiently and effectively. It also ensures that NASA installations conform to requirements and initiatives for the protection of the environment and human health. NASA facilities are essential to the Agency and facility revitalization is needed to maintain infrastructure that is safe and capable of supporting NASA's missions. The facilities being revitalized or constructed in this program are expected to remain active in the long term.

The purpose of NASA's Environmental Compliance and Restoration (ECR) program is to clean up chemicals released to the environment from past activities. Cleanups are prioritized to ensure that the highest priority liabilities are addressed first in order to protect human health and the environment and preserve natural resources for future missions.

FY 2011 Budget Request

Budget Authority (\$ millions)	FY 2009 Actual	FY 2010 Enacted	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
FY 2011 President's Budget Request	0.0	448.3	397.3	363.8	366.9	393.5	398.5
Construction of Facilities	0.0	381.1	335.2	316.3	319.5	344.6	349.0
Environmental Compliance and Restoration	0.0	67.2	62.1	47.5	47.4	48.9	49.5
Total Change from FY 2010 President's Budget Request	0.0	448.3	397.3	363.8	366.9	393.5	--

Note: In all budget tables, the FY 2011 President's Budget Request depicts the July 2009 Operating Plan including American Recovery and Reinvestment Act for the FY 2009 Actual column and the Consolidated Appropriations Act, 2010 (P.L. 111-117) without the Administrative transfers for the FY 2010 enacted column.

Plans for FY 2011

Construction and Environmental Compliance and Restoration**Construction of Facilities**

New Initiatives:

Further detailed in the Space Operations section of this document, NASA is initiating the development of the 21st Century Launch Complex at the Kennedy Space Center and the Florida launch range. The goal is to transform KSC and Cape Canaveral AFS into modern facilities poised to play a key role in 21st century space exploration. To do so, this new initiative focuses on upgrades to the Florida launch range, in cooperation with other interested users; expanding capabilities to support commercial launch providers, such as commercial cargo flights and future commercial crew flights in support of ISS, and expendable launch vehicles in support of the Science mission directorate payloads and robotic precursor missions. Other important work will include consolidating and disposing of unused or underutilized facilities, and performing environmental work to improve the surrounding area. With this large, multi-year investment, this effort will benefit NASA's current and future operations at KSC and Cape Canaveral by targeting increased efficiency and safer operations. Once details of this initiative have been established, NASA will work with Congress to ensure that appropriate funds are transferred to the construction account.

Major Changes:

All institutional and programmatic CoF budgets are consolidated in the new Construction and Environmental Restoration account established by Congress in the Consolidated Appropriation Act, 2010 (P.L. 111-117).

Major Highlights for FY 2011

FY 2011 funding will continue essential infrastructure repair and revitalization activities. Repair by replacement projects will provide sustainable and energy efficient infrastructure by replacing old, inefficient, deteriorated buildings with new efficient high performance buildings. NASA will reduce infrastructure by disposing of un-needed facilities.

Environmental Compliance and Restoration

New Initiatives:

None

Major Changes:

The Environmental Compliance and Restoration budget has been transferred to the new Construction and Environmental Restoration account established by Congress in the Consolidated Appropriation Act, 2010 (P.L. 111-117).

Major Highlights for FY 2011

FY 2011 funding should be sufficient to successfully complete the decommissioning of the Plum Brook Reactor Facility at NASA's Plum Brook Station in Ohio. Funding will also further NASA's goal of cleaning up the Santa Susana Field Laboratory in preparation for excessing the property.

Theme Overview

Construction of Facilities (CoF) provides for design and execution of all programmatic and non-programmatic facilities projects including discrete, minor revitalization and construction, and demolition of facilities. The CoF programs are managed via NASA's Capital Facility Investment Program which includes institutional and programmatic facility investments. The construction planning process starts several years in advance, with design being funded two budget years prior to construction start. CoF requirements are developed through a process involving both internal and external stakeholders. Institutional CoF requirements from all the Centers are reviewed and prioritized annually to ensure that only the highest ranking priorities are funded. Programmatic facility requirements are identified as an integral part of the Mission Directorates program development process which ensures that only those programmatic CoF projects that are necessary for mission success are funded.

FY 2011 Budget Request

Budget Authority (\$ millions)	FY 2009 Actual	FY 2010 Enacted	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
FY 2011 President's Budget Request	0.0	381.1	335.2	316.3	319.5	344.6	349.0
Science CoF	0.0	13.7	40.5	0.0	0.0	0.0	0.0
Exploration CoF	0.0	90.8	0.0	0.0	0.0	0.0	0.0
Space Operations CoF	0.0	27.3	14.0	0.0	0.0	0.0	0.0
Institutional CoF	0.0	249.3	280.8	316.3	319.5	344.6	349.0
Total Change from FY 2010 Request	0.0	381.1	335.2	316.3	319.5	344.6	--

Plans for FY 2011

Science CoF

The Science CoF Program continues the modification of the thermal vacuum Chamber A at the Johnson Space Center to achieve the required temperature and contamination control test conditions for hardware prior to flight. Renovation of the NASA Space Science Data Center at Goddard Space Flight Center will create a sustainable office facility in accordance with federal energy mandates, and in compliance with applicable codes and standards.

Exploration CoF

FY 2011 CoF requirements necessary to support the Exploration Mission are being considered in conjunction with the restructuring of the Exploration Programs and will be identified within the Program's total funding. The funds will be transferred to the Construction and Environmental Compliance and Restoration account upon enactment of the FY 2011 Budget.

Space Operations CoF

Space Operations CoF continues construction of the 24-Meter Beam Waveguide Antenna, DSS-35 at Canberra Australia. It also provides for the revitalization of facilities utilized by the Launch Services Program and at Deep Space Network sites.

Institutional CoF

The Institutional CoF Program will make capital repairs to NASA's critical infrastructure and make improvements that will improve safety and security, protect NASA's infrastructure, and improve NASA's operating efficiency by reducing utility usage. The program will continue to right size the infrastructure by demolishing infrastructure that is no longer needed. Projects with initial cost estimates between \$1.0 million and \$10.0 million are included in the program as Minor Revitalization and Construction projects, and projects with initial cost estimates of \$10.0 million or greater are budgeted as discrete projects. Projects with initial cost estimates of \$1.0 million or less are accomplished by routine day-to-day facility maintenance and repair activities provided for in program and Center operating budgets. NASA will invest in projects that protect the agency's critical assets, improve mission assurance, reduce mission risk and support capabilities needed for mission. Investment in projects such as launch facility protection at Wallops Island will protect NASA's critical assets in the case of natural disasters. Fire protection system repairs and upgrades will improve worker safety and provide safer operations. NASA's repair by replacement program will provide sustainable and energy efficient infrastructure by replacing old, inefficient, deteriorated buildings with new efficient high performance buildings. In some cases, NASA will be able to refurbish existing facilities into sustainable buildings that will meet NASA's future technology needs by retaining only the structure and replacing the systems necessary for mission operations. When this approach is viable, the projects will save capital investment over wholesale replacement but still yield a good return on investment through reduced operating costs. By investing in demolition, NASA will be able to reduce un-needed infrastructure and avoid future expenses for maintaining this infrastructure. The FY 2011 program will demolish some of the first facilities that the agency has identified as un-necessary once the Space Shuttle is retired. This will allow the agency to shift some investment in Shuttle facilities to support new programs shortly after the Shuttle's last flight. More than 80% of NASA's infrastructure is beyond its design life. As NASA's facilities age beyond their useful life, the facilities become unreliable and put NASA's programs and operations at risk. To mitigate the increasing risk to NASA's missions from infrastructure failure, NASA must maintain its investment in infrastructure repair and refurbishment.

Relevance

Relevance to national priorities, relevant fields, and customer needs:

Construction of Facilities funding ensures that NASA's facilities and field installations meet the Agency's infrastructure needs in a safe, secure, and environmentally sound manner. Activities implement sustainable design practices and support compliance with state and national environmental laws and initiatives outlined under the Energy Policy Act of 2005.

Performance Achievement Highlights:

NASA continued essential infrastructure repair and revitalization activities, completing \$391 million of construction.

Additionally NASA continued reducing its infrastructure by disposing of 117 un-needed facilities. Assertive recycling strategies and sustainable demolition practices facilitated demolishing a large inactive Wind Tunnel.

PROJECT DESCRIPTIONS AND EXPLANATIONS OF CHANGES

SUMMARY OF FY 2011 CoF PROJECTS

In Millions of Dollars	FY 2009 Actual	FY 2010 Enacted	FY 2011
SCIENCE	<u>16.2</u>	<u>13.7</u>	<u>40.5</u>
Restoration of Building 26 (GSFC)	---	---	14.0
Modify Thermal Vacuum Chamber A (JSC)	---	---	26.5
Improve Launch Pad Infrastructure, WFF (GSFC)	14.0	---	---
Minor Revitalization and Construction at Various Locations greater than \$1M but less than \$10M	2.2	12.6	---
Facility Planning and Design	---	1.1	---
EXPLORATION	<u>89.8</u>	<u>90.8</u>	<u>---</u>
Modify Space Power Facility, Plum Brook Station (GRC)	21.8	2.3	---
Modify Launch Complex 39B for ARES 1 Vehicles (KSC)	---	6.8	---
Modify Multi-Payload Processing Facility for Orion (KSC)	---	1.0	---
Modify Vehicle Assembly Building (KSC)	2.5	35.8	---
Modify Building 103 to Support Upper Stage Manufacturing, MAF (MSFC)	11.0	2.5	---
Construct A-3 Propulsion Test Facility (SSC)	---	16.8	---
Construct Vertical Assembly & Welding Highbay in Building 103, MAF (MSFC)	42.3	---	---
Modify A-1 Propulsion Test Facility (SSC)	0.9	---	---
Minor Revitalization and Construction at Various Locations greater than \$1M but less than \$10M	11.3	23.2	---
Facility Planning and Design	---	2.4	---
SPACE OPERATIONS	<u>15.7</u>	<u>27.3</u>	<u>14.0</u>
Construct 34-Meter Beam Waveguide Antenna, DSS-35, Canberra, Australia (JPL)	---	6.8	7.3
Minor Revitalization and Construction at Various Locations greater than \$1M but less than \$10M	15.7	20.0	6.7
Facility Planning and Design	---	0.5	---
INSTITUTIONAL CoF PROJECTS	<u>268.9</u>	<u>249.3</u>	<u>280.7</u>
Construct Replacement Facilities Support Center (DFRC)	---	---	12.5
Launch Facilities Protection, WFF (GSFC)	---	7.0	13.0
Construct Integrated Services Building (LaRC)	---	---	30.4
Construct Replacement Engineering Office Building 4220 (MSFC)	---	---	40.0
Repair Hangar, Fire Protection and Electrical, Building 4820 (DFRC)	---	10.0	---
Repair Primary Electrical Distribution-Phase 6 (DFRC)	---	10.0	---
Construct Centralized Office Building (GRC)	---	25.3	---
Construct Shipping and Receiving Facility (GSFC)	---	12.5	---
Revitalize Administrative Support Building 12 (JSC)	---	22.0	---
Renovation of Operations & Checkout Building (KSC)	6.0	16.0	---
Revitalize High and Medium Voltage Electrical Distribution Systems (KSC)	---	19.0	---
Replace Asbestos Siding and Provide Energy/Safety Upgrades, Bldg 4707 (MSFC)	7.4	5.0	---

Mission Directorate: Construction and Environmental Compliance and Restoration
Theme: Construction of Facilities

Construct Collaborative Support Facility, Building N232 (ARC)	29.0	---	---
Upgrade Electrical Supply for NASA Advanced Supercomputing Facility N258 (ARC)	11.5	---	---
Repair and Construct Consolidated Information Technology Center (DFRC)	10.8	---	---
Upgrade Auxiliary Chiller Plant (JSC)	8.3	---	---
Replace Propellant North Admin and Maintenance Facility (KSC)	4.5	---	---
Revitalize Electrical Maintenance Facility (KSC)	5.9	---	---
Repair of Hurricane Damage (JSC)	50.0	---	---
Minor Revitalization and Construction at Various Locations greater than \$1M but less than \$10M	81.6	84.5	137.2
Demolition of Facilities	15.0	15.0	19.9
Facility Planning and Design	38.9	23.0	27.7

DISCRETE PROJECTS

Science CoF

Project Title: Restoration of Building 26
 Location: Goddard Space Flight Center, Greenbelt, MD
 Mission Directorate: Science
 FY 2011 Estimate: \$14.0M

This project renovates the NASA Space Science Data Center, Building 26 to create a sustainable office facility in accordance with federal energy mandates, and in compliance with applicable codes and standards. Work will include replacing building system components including HVAC, plumbing, sprinklers, electrical lighting and power, doors and windows, finishes, roofing, elevator, fire alarm and removal of asbestos and lead paint. Most of the building components are original and over 40 years old. The HVAC system currently functions poorly requiring costly maintenance and is highly energy-inefficient. The steam system was installed in 1964 with the construction of the building, is in poor condition and failing. The building's electrical distribution system is original and replacement parts are discontinued. This project will improve overall facility condition of the building, extend the life of the building 25-40 years, and be LEED Silver certified.

Project Title: Modify Thermal Vacuum Chamber A
 Location: Johnson Space Center, Houston, Texas
 Mission Directorate: Science
 FY 2011 Estimate: \$26.5M

This project continues modifications to Chamber A to prepare for testing the James Webb Space Telescope (JWST) Optical Telescope Element and Integrated Science Instrument Module. Modifications include upgrade of LN2 Systems and upgrade of High vacuum systems which include installation of new gates valves and new cryo pumps, the installation of a Helium system (both refrigeration system and shroud), and installation of a new clean air system in the chamber. These modifications to the thermal vacuum Chamber A are necessary to achieve the required temperature and contamination control test conditions for flight hardware. This is the fourth of five increments for this project with the final increment planned for FY 2012. The total project cost is \$73.9M.

Space Operations CoF

Project Title: Construct 34-Meter Beam Waveguide Antenna, DSS-35
Location: Canberra, Australia
Mission Directorate: Space Operations
FY 2011 Estimate: \$7.3M

This project includes fabrication and installation of the antenna structure, panels, gearboxes, bearings, electric drives, encoders, beam waveguide mirrors, subreflector and subreflector positioner. It also includes the design and construction of the foundation and pedestal, as well as facilities in and around the Canberra Complex, antenna structure and pedestal, such as paved access road, trenches, drainage, flood control devices, water main and distribution system, antenna apron, security fence, HVAC, electrical power distribution, fire detection and suppression system, and surveillance system assembly. A Beam Waveguide antenna is needed to add resilience in the southern hemisphere for the Deep Space Network. This antenna is needed to support additional mission loading from projects currently under development and scheduled for launch during or after FY 2015. This is the second of three increments with a total estimated construction cost of \$23.9 million with the last phase planned for FY 2012.

Institutional CoF

Project Title: Construct Replacement Facilities Support Center
Location: Dryden Flight Research Center, Kern County, CA
FY 2011 Estimate: \$12.5M

This project constructs a new 20,000 square-foot Facilities Support Center (FSC) consolidating the functions of the Dryden Facilities Engineering & Asset Management Office along with the Safety, Health & Environmental Office as more than 100 people move into the new FSC. These functions are currently scattered in seven old buildings and 25 sheds and conex boxes. Many of these structures are 50-60 years old, inefficient and obsolete with high maintenance and energy costs. Most of these sites are alongside the hazardous, active aircraft flight line exposing employees to aircraft engine fumes and high noise levels. The functions need to be relocated to higher ground in the Support Services Zone. When the new FSC is complete, about 23,000 square feet of old, inefficient and obsolete structures will be demolished. The FSC will be designed to meet Leadership in Energy and Environmental Design (LEED) Silver rating fully conforming to current structural, life safety, and Americans with Disabilities Act (ADA) codes.

Project Title: Launch Facilities Protection
Location: Wallops Flight Facility, Wallops Island, Virginia
FY 2011 Estimate: \$13.0M

This is the second of three increments for Wallops Island Launch Facilities Protection. The first increment extends the seawall south approximately 1500 feet to protect existing assets and repair the failing seawall based on results of a detailed inspection. This increment will begin the sand fill portion of the project. The goal of the completed beach fill segment is to provide a 70-foot wide dry beach in front of the seawall (~3M cubic yards) along its entire length (6,800 meters). Wallops Island has experienced erosion throughout the six decades that NASA has occupied the site. Since the 1990's, part of the island has been protected with a stone rubble-mound seawall. Although the seawall has temporarily limited the shoreline's erosion, the structure is being undermined and failing because there is little or no protective sand beach remaining and waves break directly on the sea wall. The south end of the island is currently unprotected and suffers continuous erosion. A 2006 Army Corps of Engineers study titled "Beach Erosion Mitigation and Sediment Management Alternatives at Wallops Island, VA" validates the need and outlines the

Mission Directorate: Construction and Environmental Compliance and Restoration
Theme: Construction of Facilities

requirements for protection. The Wallops Launch Range supports sounding rocket and NASA small satellites launches; Commercial Orbital Transportation Services (COTS) demonstration and re-supply the ISS; launches for other federal and commercial entities; and unmanned aerial vehicle (UAV) flights. The final increment is planned for FY 2012 with a total project cost of \$37.6 million. The project will not provide a complete solution until final increment is executed.

Project Title: Construct Integrated Services Building
Location: Langley Research Center, Hampton, Virginia
FY 2011 Estimate: \$30.4M

This project constructs a two-story integrated services building and provides related site improvements. The new 95,000 sq. ft building will house up to 125 administrative personnel and incorporate the media services center, main conference facilities, cafeteria, training classrooms, and many other services now scattered throughout Langley. The Integrated Services Building will be located very close to the center of the campus and will be energy efficient, designed to the United States Green Building Council Leadership in Energy and Environmental Design (LEED) certification requirements of silver as a minimum. Site improvements include upgrades to the existing pedestrian walkway, addition of a civic mall in the center of the campus, and expansion of surrounding parking lots. The project also includes demolition of six older buildings directly impacted by this project, removing 98,000 sq. ft of floor space and eliminating \$37.8M in deferred maintenance. The buildings to be replaced by the new Integrated Services Building are over 60 years old. The fire protection systems in these older facilities are very inadequate. Most do not have sprinkler systems and many of the fire alarms, smoke detection systems, and fire exits are not code compliant. The majority of these older facilities have antiquated HVAC systems, which frequently break down and disrupt operations. The existing media services are located in four separate locations, causing this service to be very inefficient. These buildings have potential problems with hazardous materials such as asbestos; Polychlorinated biphenyls (PCBs) ballasts; mercury thermostats; and lead, chromium, and cadmium based paints. Half of the buildings are not ADA compliant. All of these facilities are run down, inefficient, and inadequate to perform their intended functions. Renovation of the existing facilities is not cost effective and eliminating these facilities reduces the risk of accidental injury or death from fire or other system failures. This is the first of two increments with a total estimated construction cost of \$50.4 million. The final increment is planned for FY 2012. The project will not provide a complete and usable facility until completion of increment 2.

Project Title: Construct Replacement Engineering Office Building 4220
Location: Marshall Space Flight Center, Huntsville, Alabama
FY 2011 Estimate: \$40.0M

This building is the first major replacement building in the Main Administrative Complex which comprises the northern end of the North Campus portion of the MSFC Master Plan. This project will replace Building 4202, a deteriorated, high-maintenance, high operating cost building, with an energy and operationally efficient state-of-the-art office building and will allow the efficient consolidation and co-location of a multi-discipline work force that has been widely dispersed throughout MSFC, improving functional efficiency and coordination between the various operations. The facility will meet "LEED Silver" criteria, as well as MSFC standard energy conservation requirements to ensure low operating costs for the life of the facility. This project will include the demolition of building 4202, totaling approximately 110,000 square feet and will eliminate over \$4M of deferred maintenance. Building 4202 was originally constructed in 1964 and is not suitable for a renovation due to its advanced age, its configuration, the presence of friable asbestos, and code compliance issues such as ADA compliance. Building 4220 is a cost effective solution that will provide significant operating and energy cost savings and will eliminate numerous code-compliance issues. Current HVAC inefficiencies in 4202 are significant due to the poor sealing of the windows on this six story curtain-wall structure.

MINOR REVITALIZATION & CONSTRUCTION OF FACILITIES (PROJECTS LESS THAN \$10.0M EACH)

This request includes facility revitalization and construction needs with initial cost estimate greater than \$1.0 million but less than \$10.0 million per project. Projects with initial cost estimates of \$1.0 million or less are normally accomplished by routine day-to-day facility maintenance and repair activities provided for in direct program and Center operating budgets. Proposed FY 2011 Institutional minor revitalization and construction projects total \$137.3 million for components of the basic infrastructure and institutional facilities, funded in Institutional Investments, and \$6.7 million for Program funded projects. These resources provide for revitalization and construction of facilities at NASA field installations and government-owned industrial plants supporting NASA activities. Revitalization and modernization projects provide for the repair, modernization, and/or upgrade of facilities and collateral equipment. Repair projects restore facilities and components to a condition substantially equivalent to the originally intended and designed capability. Repair and modernization work includes the substantially equivalent replacement of utility systems and collateral equipment necessitated by incipient or actual breakdown. It also includes major preventive measures that are normally accomplished on a cyclic schedule and those quickly needed out-of-cycle based on adverse condition information revealed during predictive testing and inspection efforts. Modernization and upgrade projects include both restoration of current functional capability and enhancement of the condition of a facility so that it can more effectively accomplish its designated purpose or increase its functional capability or so that it can meet new building, fire, and accessibility codes.

NASA's facilities are primarily from the Apollo era. Most of NASA's facilities are beyond their original design life, resulting in increased reliability problems and occasional impacts to NASA missions. Assessments of NASA's facilities indicate that the repair backlog has increased over recent years and the facilities continue to degrade. To reverse this trend, NASA has developed a long term strategy that includes increasing facility repair investments, replacing facilities when it makes economic sense and eliminating facilities that are no longer needed. The minor revitalization and construction projects that comprise this request are of the highest priority, based on relative urgency and expected return on investment. Work to be accomplished includes repair and upgrades of fire protection systems; utilities systems such as electrical distribution, water and waste water, and steam; heating, ventilating, and air-conditioning systems; roofs; roads and paved areas; and building exteriors/interiors. The amount requested addresses the most urgent repairs needed as well as component and system replacement to improve the reliability of NASA's facilities over time and reduce impacts to NASA's critical missions.

MINOR REVITALIZATION CENTER DISTRIBUTION

SPACE OPERATIONS

- A. Jet Propulsion Laboratory (JPL), \$2.7 million
 - B. Kennedy Space Center (KSC), \$4.0 million
-

INSTITUTIONAL

- A. Ames Research Center (ARC), \$14.0 million
- B. Dryden Flight Research Center (DFRC), \$12.4 million
- C. Glenn Research Center (GRC), \$11.4 million
- D. Goddard Space Flight Center (GSFC), \$8.1 million
- E. Jet Propulsion Laboratory (JPL), \$5.3 million

Mission Directorate: Construction and Environmental Compliance and Restoration
Theme: Construction of Facilities

- F. Johnson Space Center (JSC), \$23.7 million
- G. Kennedy Space Center (KSC), \$21.7 million
- H. Langley Research Center (LaRC), \$19.0 million
- I. Marshall Space Flight Center (MSFC), \$14.6 million
- J. Stennis Space Center, \$7.1 million

DEMOLITION OF FACILITIES

Cognizant Office: Office of Infrastructure
FY 2011 Estimate: \$19.9M

The funds requested will be used to eliminate inactive and obsolete facilities that are no longer required for NASA's Mission. Abandoned facilities present eyesores on the Centers, and pose a potential safety and environmental liability. These abandoned facilities must still be maintained at minimal levels to prevent increasing safety and environmental hazards. These recurring maintenance costs exacerbate the limited maintenance dollars needed at the Centers. Demolishing these abandoned facilities will allow the Agency to avoid non-productive operating costs required to keep abandoned facilities safe and secure. Furthermore, demolition is the most cost effective way to reduce the Agency deferred maintenance.

NASA identifies potential facilities for the demolition program through special studies to determine if the facility is required for a current of future missions. Facilities that are no longer needed are included in a 5 year demolition plan that sets project schedules based on last need, annual costs avoided, potential liability, and project execution factors. Individual project schedules are sometimes adjusted in response to factors such as consultation with states on historic properties, changes in operational schedules, environmental remediation, funding profiles, local market forces, and cost of recycled materials. Proposed FY 2011 demolition projects will reduce facilities inventory current replacement value by roughly \$188M.

FACILITY PLANNING AND DESIGN

Cognizant Office: Office of Infrastructure
FY 2011 Estimate: \$27.7M

These funds are required to provide for: advance planning and design activities; special engineering studies; facility engineering research; preliminary engineering efforts required to initiate design-build projects; preparation of final designs, construction plans, specifications, and associated cost estimates; and participation in facilities-related professional engineering associations and organizations. These resources provide for project planning and design activities associated with non-programmatic construction projects. Project planning and design activities for construction projects required to conduct specific programs or projects are included in the appropriate budget line item. Other activities funded include: master planning; value engineering studies; design and construction management studies; facility operation and maintenance studies; facilities utilization analyses; engineering support for facilities management systems; and capital leveraging research activities.

THIS PAGE INTENTIONALLY BLANK

Theme Overview

NASA's Environmental Compliance and Restoration (ECR) Program primarily provides funding to complete the cleanup of hazardous materials and wastes that have been released to the surface or groundwater at NASA installations, NASA-owned industrial plants supporting NASA activities, and other current or former sites where NASA operations have contributed to environmental problems and where the agency is legally obligated to address these hazardous releases. Nearly \$1 Billion worth of cleanup liabilities impacting all NASA centers are prioritized to ensure that the highest priority liabilities are addressed first in order to protect human health and the environment, and preserve natural resources for future missions. Specific program activities include projects, studies, assessments, investigations, plans, designs, related engineering, program support, sampling, monitoring, regulatory agency oversight costs, and any land acquisitions necessary to ensure operation of remedial treatment processes and sites as part of the remediation and cleanup measures. In an effort to respond to recent executive orders and address the increasing impacts of global climate change on NASA facilities and projects, the ECR program also provides for strategic investment in environmental methods and practices to ensure that NASA may continue to carry out its primary missions. Included are investments in methodologies for sustainably reducing energy intensity and greenhouse gas emissions and supporting operational activities by ensuring that advances in chemical risk management are incorporated early in the mission project design phase. Additional information concerning NASA's ECR program can be found at <http://oim.hq.nasa.gov/oia/emd/ecr.html>

FY 2011 Budget Request

Budget Authority (\$ millions)	FY 2009 Actual	FY 2010 Enacted	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
FY 2011 President's Budget Request	0.0	67.2	62.1	47.5	47.4	48.9	49.5
Environmental Compliance and Restoration	0.0	67.2	62.1	47.5	47.4	48.9	49.5
Total Change from FY 2010 Request	0.0	67.2	62.1	47.5	47.4	48.9	--

Plans for FY 2011

Environmental Compliance and Restoration

The FY 2011 funding request represents a prioritized, risk-based approach for addressing a total of 136 cleanup projects remaining at all NASA centers and is based upon the relative urgency and the potential health and safety hazards related to each individual cleanup. As studies, assessments, investigations, plans, regulatory approvals, and designs progress and as new discoveries or regulatory requirements change, it is expected that program priorities may change requiring revisions to planned activities. Major cleanups with the highest priority requirements planned for accomplishment in FY 2011 include the following:

- 1) Continue decommissioning and demolition of NASA's Plum Brook Reactor Facility. FY 2011 funding should allow NASA to terminate its Nuclear Regulatory Commission (NRC) license.
- 2) Address ground water and drinking water issues associated with contamination emanating from NASA's Jet Propulsion Laboratory;
- 3) Continue cleanup of ground water contamination at White Sands Test Facility; and
- 4) Accelerate cleanup of contamination at Santa Susana Field Laboratory to facilitate property transfer.

Relevance

Relevance to national priorities, relevant fields, and customer needs:

ECR funding ensures that contaminated sites at NASA centers, several of which are listed on EPA's National Priorities List (Superfund) or have high congressional or public interest, are completed effectively and in accordance with existing federal, state, and local laws and regulations.

Relevance to education and public benefits:

The Environmental Compliance and Restoration program ensures that the public is not exposed to hazards and that impacted natural resources are restored for future use.

Performance Achievement Highlights:

In FY09, NASA continued to address high priority cleanups, completing 12 sites and continuing remediation operations at another 75 sites out of a total of 150 individual cleanups. Soil and groundwater remediation at the Santa Susana Field Laboratory continued in preparation for transferring this property as excess. At the Jet Propulsion Laboratory, NASA initiated construction of a groundwater treatment system to address offsite contamination. Additionally, concerns about releases to an offsite estuary were alleviated and final status survey work commenced at the Plum Brook Nuclear Reactor Facility.

Mission Directorate:	Construction and Environmental Compliance and Restoration
Theme:	Environmental Compliance and Restoration
Program:	Environmental Compliance and Restoration

FY 2011 Budget Request

Budget Authority (\$ millions)	FY 2009 Actual	FY 2010 Enacted	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
FY 2011 President's Budget Request	0.0	67.2	62.1	47.5	47.4	48.9	49.5
Environmental Compliance and Restoration	0.0	67.2	62.1	47.5	47.4	48.9	49.5
Changes from FY 2010 Request	0.0	67.2	62.1	47.5	47.4	48.9	--

Program Overview

NASA's Environmental Compliance and Restoration (ECR) Program primarily provides funding to complete the cleanup of hazardous materials and wastes that have been released to the surface or groundwater at NASA installations, NASA-owned industrial plants supporting NASA activities, and other current or former sites where NASA operations have contributed to environmental problems and where the agency is legally obligated to address these hazardous releases. Liquidating these liabilities is estimated to cost nearly one billion dollars with much of that work planned in the next decade. Specific program activities include projects, studies, assessments, investigations, plans, designs, related engineering, program support, sampling, monitoring, regulatory agency oversight costs, and any land acquisitions necessary to ensure operation of remedial treatment processes and sites as part of the remediation and cleanup measures. This program also invests in methodologies for sustainably reducing energy intensity and greenhouse gas emissions and supports operational activities by ensuring that advances in chemical risk management are incorporated early in the mission project design phase. Additional information concerning NASA's ECR program can be found at <http://oim.hq.nasa.gov/oia/emd/ecr.html>

Plans For FY 2011

The FY 2011 funding request represents a prioritized, risk-based approach for addressing a total of 136 cleanup projects remaining at all NASA centers and is based upon the relative urgency and the potential health and safety hazards related to each individual cleanup. As studies, assessments, investigations, plans, regulatory approvals, and designs progress and as new discoveries or regulatory requirements change, it is expected that program priorities may change requiring revisions to planned activities. Major cleanups with the highest priority requirements planned for accomplishment in FY 2011 include the following:

- 1) Continue decontamination and demolition of NASA's Plum Brook Reactor Facility. FY 2011 funding should allow NASA to terminate its Nuclear Regulatory Commission (NRC) license.
- 2) Address ground water and drinking water issues associated with contamination emanating from NASA's Jet Propulsion Laboratory;
- 3) Continue cleanup of ground water contamination at White Sands Test Facility; and
- 4) Accelerate cleanup of contamination at Santa Susana Field Laboratory to facilitate property transfer.

Mission Directorate:	Construction and Environmental Compliance and Restoration
Theme:	Environmental Compliance and Restoration
Program:	Environmental Compliance and Restoration

Program Management

Primary responsibility for managing the ECR program and determining program priorities resides within the Environmental Management Division at NASA HQ.

Acquisition Strategy

Services necessary for carrying out the ECR program are provided primarily through external contractors managed by in house environmental engineers at affected NASA centers.