

Sustainability Plans (2014)
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National Archives and Records Administration

Introduction

National Archives and Records Administration



2014 Strategic Sustainability Performance

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Agency Policy Statement

The National Archives and Records Administration (NARA) is committed to meeting statutes, regulations and Executive Orders (EOs) pertaining to the environment, energy and sustainability. NARA has exceeded those requirements to date, and continues to improve, as evidenced by awards for Leadership in Federal Energy Management (2008), and for outstanding achievement in building energy efficiency and renewable energy development and deployment (2010). NARA surpassed agency goals for water conservation and established green building requirements for all new construction projects. NARA's first new building constructed under the requirements (W. J. Clinton Presidential Library) is certified LEED Platinum U.S. Green Building Council's rating system. The latest addition is the George W. Bush Presidential Library (dedicated on April 25, 2013), also certified LEED Platinum.


Last year, NARA reduced its energy intensity 29.1%, compared to the FY2003 baseline. NARA continues to improve energy intensity year over year, and is a leader among federal agencies. We have also implemented highly innovative measures to reduce our carbon footprint. For example, we installed an in-vessel composting system at the College Park facility. We collect and compost our cafeteria food waste, paper towels from restrooms, yard waste and other waste, turning them into a usable product. We use some of the compost on our community garden plots. The compost system has reduced solid waste generated by 50% and eliminates over half of the tipping fees and trips to the landfill, thus reducing Scope 3 greenhouse gases. We also installed Combined Heat and Power (CHP) systems that produce electricity on-site, eliminate transmission losses, and use the heat from power generation to preheat feed water to the boiler.

Building on our successes, this year's Strategic Sustainability Performance Plan (SSPP) outlines an expanded set of sustainability goals. NARA is redoubling its efforts on GHG reduction, renewable energy production, and water conservation. In addition, the agency has expanded the scope of its sustainability goals to include: regional and local climate adaptation planning, and more emphasis on pollution prevention, waste reduction, sustainable acquisition, and electronic stewardship.

To help meet our new goals, NARA is undertaking the following measures for FY2015:

- Continue to improve energy conservation at all facilities, based on lessons learned.
- Expand on-site energy generation via renewable energy and other sources.
- Improve internal energy audit procedures to address sustainability goals and climate change.
- Implement a multiple site ESPC project at all Presidential Libraries and the National Archives at Atlanta.
- Expand the College Park Archives ESPC to include several additional ECM's.

These measures demonstrate sustained commitment by NARA, and reflect the dedication of significant staff time. These investments will help NARA meet the intent of Executive Order 13514, save taxpayer dollars, and improve our carbon footprint, thus further strengthening NARA's reputation as a sustainability leader. This plan helps maintain dialogue on how NARA can become more sustainable, and further raise the bar on energy, water, and GHG reductions. We look forward to input and feedback on NARA's Sustainability Plan.


Mark D. Sprouse 6/18/14
Agency Senior Sustainability Officer

**National Archives and Records Administration
2014 Strategic Sustainability Performance Plan
Executive Summary**

The National Archives and Records Administration (NARA) serves American democracy by safeguarding and preserving Government records, to ensure that citizens may continue to discover, use, and learn from this documentary heritage. We provide continuing access to essential documentation of the rights of Americans and the actions of our Government. By ensuring the maintenance and preservation of these documents and artifacts, we support democracy, promote civic education, and facilitate historical understanding of our national experience.

NARA owned and operated seventeen separate facilities in 2013, all dedicated to the preservation, storage, display, and use of historical documents and artifacts. In April 2013, an additional Presidential Library, George W. Bush, was dedicated and opened to the public. NARA's documents and artifacts must be maintained in a controlled environment (temperature, humidity and air quality) 24 hours per day, 365 days per year. Due to the stringent requirements for storage and display (found in 36CFR, Chapter XII, Part 1234), all NARA-owned facilities are excluded from the energy reduction requirements of the National Energy Conservation Policy Act (NECPA), as amended by the Energy Policy Act of 2005. Conventional performance measures are rendered meaningless by the overwhelming proportion of process-dedicated energy required for NARA's "stack" space, which represents the largest percentage of the agency's gross square footage. Despite the exempt status of these facilities, NARA has continued to:

- Complete and file all necessary annual energy management reports.
- Comply with all energy efficiency requirements.
- Aggressively pursue energy and water conservation projects.

Vision:

NARA has consistently demonstrated long-range thinking and implementation for energy, water, and GHG reduction. The agency has realized year after year, significant reduction in energy and greenhouse gas emissions. NARA was one of four Government agencies to win a FY2008 Presidential Award for Leadership in Federal Energy Management. In 2010, NARA won the GreenGov Presidential Award. NARA was recognized as the winner of the "Lean, Clean, and Green" Award, for outstanding achievement in building energy efficiency and renewable energy development and deployment. In November 2013, NARA was recognized and awarded with the Energy Star Combined Heat and Power award by the EPA. NARA continues to build on its efficiency via additional ESPC projects, capital funded projects, and by implementing "lessons learned" on prior projects. NARA intends to stay on the forefront of new technologies and increase renewable energy use.

Leadership:

Besides attaining the awards listed above, NARA continues to lead the Federal community by example. Although we are a small agency, with very limited resources, and an energy intensive mission, senior management understands the importance and benefits of meeting energy, water, GHG, and sustainability challenges to meet the ultimate goal of agency resiliency. Sustainability

and resiliency (to Climate Change) is ultimately met by following and meeting or exceeding requirements of Executive Orders 13423, 13514, and 13653, EPACT, EISA, agency standards, and LEED. By meeting all of these requirements, NARA is poised to be ready for climate change challenges and opportunities. NARA is ahead of schedule to meet sustainability, energy, GHG, and water goals described and outlined in the above referenced requirements. NARA's team is moving beyond energy and water reduction, and is now poised to exceed waste reduction requirements by implementing an on-site compost system, to complement recycling strategies. The compost system at Archives II in College Park, Maryland alone is producing about 1000 lbs of compost daily which is used on site, thus reducing the need for purchasing mulch and hauling the waste offsite.

NARA recognizes that resiliency can only be met through regular scrutiny of changes made to meet sustainability goals, and being aware and poised to move forward based on observations and collaboration with other parties on any significant climate changes in progress, or yet to happen.

NARA's Senior Sustainability Officer (SSO), along with a small dedicated team of professionals, will move NARA towards attainment of the goals outlined herein. The SSO is responsible for the implementation of goal achievement and is accountable to the Executive for Business Support Services who will provide executive leadership and representation to the agency management team.

Performance Summary/Review:

Between FY 2006 and FY 2012, NARA invested millions of dollars in energy efficiency projects. The two most innovative and successful projects are a \$5.7M Energy Savings Performance Contract (ESPC) project (with 8-year ROI) at Archives II and a \$5.8M ESPC project (with 7-year ROI) at Archives I. NARA worked directly with the Energy Services Company to develop and implement energy conservation measures (ECMs) at each facility:

- Upgrade and optimize energy management control systems;
- Improve heating plants;
- Reduce steam distribution losses;
- Rebalance HVAC systems;
- Re-set condenser water temperature;
- Reduce water usage;
- Reduce bathroom exhaust fans run times;
- Retrofit lighting and controls; and
- Upgrade building envelopes.

NARA's energy intensity and greenhouse gas (GHG) reductions are summarized below:

- In FY 2013, NARA's intense effort to reduce energy use has continued to yield exceptional savings.
- Energy intensity (128,522 Btu/GSF) is down 29.1% compared to FY2003 baseline (181,189 Btu/GSF).
- Scopes 1&2 GHG emissions of are down 17.7% (54,564 tons CO_{2e}) as compared to FY2008 baseline (66,303 tons CO_{2e}).

- Scope 3 GHG emissions are down 11.1% (12,937 ton CO_{2e}) compared to FY2008 baseline (14,557 ton CO_{2e}).

Since FY2008, the Archives II facility, has contributed the greatest reduction toward agency energy use. Archives II utility consumption has resulted in a noticeable reduction in annual utility costs as well. The sustained reduction in Archives II energy use and costs is attributed to both aggressive conservation measures included in the Archives II's ESPC project, and excellent collaboration between NARA employees, ESPC and O&M contractors.

NARA is moving toward using self-generated energy. Photovoltaic solar panels at Clinton Library produced 68,255 KWH in FY2013. The new Photovoltaic solar system at the G. W. Bush library produced 63,530 KWH. Photovoltaic solar panels at Archives II produced 182,793 KWH in FY2013. NARA purchased 6,585,200 KWH of renewable energy credits of wind power through the GSA area-wide contract. This year, NARA's renewable energy use was 8.2%. NARA is installing an additional 400+KW of solar PV capacity this fiscal year.

Strong water conservation measures were exercised at NARA. In FY2010, water consumption was 21.6 gallons per GSF, down 18.8% compared to FY2007 baseline of 26.6 gallons per GSF. In FY2011, with aggressive water conservation measures, water consumption was 21.5 gallons per GSF, down 18.9% compared to FY2007 baseline. In FY2012, due to extreme drought at several of our sites, NARA water consumption was 23.5 gallons per GSF, an increase compared to the two previous years, but still 11.4% less than the FY2007 baseline. In FY2013, NARA water consumption was 21.4 gallons per GSF, down 19.6% compared to the FY2007 baseline.

Holdings at NARA facilities must be maintained in a controlled environment 24 hours per day, 365 days per year (for temperature, humidity and air quality). It is not lifecycle cost effective to design NARA facilities to 30% below ASHRAE Standards. NARA strives to meet the intent of this requirement but given the sensitive nature of its holdings, it is not always possible to attain 30% below ASHRAE recommendations.

NARA-owned facilities have standard and advanced electrical meters, and standard meters for gas, steam, and water. Advanced metering helps NARA comply with its precise measurement requirements. NARA Directive 1571, and The Architecture and Design Standards for Presidential Libraries outline building requirements for storage and safekeeping of archival materials. New Presidential Library facilities are built to the above standards, and also to LEED Platinum certification, thus meeting energy, water, GHG, and sustainability requirements. The Presidential Library Design Standards were also revised to comply with EPACT 2005, Executive Order 13423 and Executive Order 13514 requirements.

NARA has typically funded all non-ESPC energy savings projects with existing Operations and Maintenance appropriations. With the significant sequestration budget cuts and those anticipated in the out years, existing O&M appropriations are severely impacted and sufficient only to fund present operations. Similarly, the Repair and Restoration appropriation has been reduced to levels that preclude using it for any energy savings projects. While the ESPC mechanism is still in place and being utilized, these dwindling direct appropriations streams force the agency to

finance longer term payback measures which were typically funded by direct appropriations. These direct appropriations keep the finance terms and pay back terms at reasonable levels.

Progress on Administrative Priorities:

As part of the Energy Independence and Security Act (EISA) section 432 requirements, NARA continues to perform energy audits and building condition reports at all 17 facilities. The audits identify low cost/no cost Operations and Maintenance problems easily corrected and cost effective infrastructure improvements to be incorporated into future renovation or capital improvement projects. Many low cost/no cost measures e.g. “sequence of operation” errors were identified and corrected immediately by on-site personnel. Other measures were incorporated into projects. Most NARA-owned facilities have up-to-date or adequate HVAC equipment. Additional ECMs can be implemented to achieve greater energy and water reductions. These ECMs are being investigated under a comprehensive ESPC project inclusive of all Presidential Libraries and the National Archives at Atlanta (15 sites). NARA and the ESCO are currently working on the construction phase of the current ESPC projects.

NARA recognizes its need to continually improve the Climate Change Adaptation Plan, Fleet Management Plan and Bio-based Purchasing Strategies. The Climate Change Adaptation Plan is improved by collaboration and attendance at Climate Change Adaptation Meetings, sharing ideas and information, and making best use of available resources.

NARA’s mission continues to expand. As a new Presidential Library is built, additional vehicles are required to support it. As available records storage space dwindles, particularly in the mid-west, more records are being moved from facility to facility via truck to meet demands. These factors and others have increased NARA’s fuel use. Despite this expansion, the agency has made major strides to improve its Fleet Management Plan by reducing the number of vehicles in the fleet, evaluating appropriate vehicles for each situation, reducing idle time and fuel use by installing comprehensive GPS monitors, providing suggestions for reducing fuel use to users, switching to alternative fuels whenever feasible, and purchasing hybrid, electric, or higher mpg vehicles to perform like tasks. The agency plans to rent special use vehicles when needed, rather than purchase them for only limited use. These changes have significant potential fuel savings, and save the agency significant money on vehicle leases. NARA’s baseline fleet started at 76 vehicles and has been reduced to 61. This reduction in fleet size has reduced agency fuel consumption and put it back on track to meet the FY2020 goal.

NARA continues to improve its Bio-based Purchasing Strategies by looking first at bio-based products when making purchases, ongoing training of purchasers to buy bio-based, attendance at Strategic Acquisition and Materials Management meetings, and an ongoing push to make NARA meet all OMB Scorecard requirements. NARA has included and updated language to meet all FAR clause requirements.

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Agency Climate Change Resilience

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Table 1: Agency Size & Scope

Agency Size & Scope	FY 2012	FY 2013
Total Number of Employees as Reported in the President's Budget	3,469	3,254
Total Acres of Land Managed	169	169
Total Number of Buildings Owned	16	17
Total Number of Buildings Leased (GSA and Non-GSA Lease)	48	48
Total Building Gross Square Feet (GSF)	4,262,955	4,356,152
Operates in Number of Locations Throughout U.S.	64	64
Operates in Number of Locations Outside of U.S.	0	0
Total Number of Fleet Vehicles Owned	0	1
Total Number of Fleet Vehicles Leased	73	61
Total Number of Exempted-Fleet Vehicles (Tactical, Law Enforcement, Emergency, Etc.)	0	0
Total Amount Contracts Awarded as Reported in FPDS (\$Millions)	167	170

National Archives and Records Administration

Evaluating Previous Strategies

Goal 1: Greenhouse Gas (GHG) Reduction – Scope 1 & 2

(A) Strategy	(B) Did you implement this strategy? (Yes/No)	(C) Was the strategy successful for you? (Yes/No)	(D) Will you use this strategy again next year? (Please explain in 1-2 sentences)
Use the FEMP GHG emission report to identify/target high emission categories and implement specific actions to resolve high emission areas identified	Yes	Yes	Yes. NARA has already exceeded the goal. However, NARA is continually improving GHG emissions.
Reduce grid-supplied electricity consumption by improving/upgrading motors, boilers, HVAC, chillers, compressors, lighting, etc.	Yes	Yes	Yes. More energy efficient equipment will be installed under current ESPC projects.
Employ operations and management best practices for energy consuming and emission generating equipment	Yes	Yes	Yes. NARA is continually working to improve building O&M practices.
Install building utility meters and benchmark performance to track energy and continuously optimize performance	Yes	Yes	Yes. NARA will install additional advanced meter as needed.
Reduce on-site fossil-fuel consumption by installing more efficient boilers, generators, furnaces, etc. and /or use renewable fuels.	Yes	Yes	Yes. More energy efficient equipment and additional 430 KW solar PV will be installed under current ESPC projects.

Goal 1: Greenhouse Gas (GHG) Reduction – Scope 3

(A) Strategy	(B) Did you implement this strategy? Yes/No	(C) Was the strategy successful for you? Yes/No	(D) Will you use this strategy again next year? (Please explain in 1-2 sentences)
Reduce employee business ground travel	Yes	Yes	Yes. NARA policy requires employee business travel be approved by leadership level on a case by case basis.
Reduce employee business air travel	Yes	Yes	Yes. NARA policy requires employee business travel be approved by leadership level on a case by case basis.
Develop and deploy employee commuter reduction plan	Yes	Yes	Yes. NARA is continually working to improve its employee commuter reduction plan.
Use employee commuting survey to identify opportunities and strategies for reducing commuter emissions	Yes	Yes	Yes. Employee commuting survey has been a good tool to identify opportunities for reducing commuter emissions.
Increase number of employees eligible for telework and/or the total number of days teleworked	Yes	Yes	Yes. NARA offers opportunities for employees to telework, when feasible.

Goal 2: Sustainable Buildings

(A) Strategy	(B) Did you implement this strategy? Yes/No	(C) Was the strategy successful for you? Yes/No	(D) Will you use this strategy again next year? (Please explain in 1-2 sentences)
Incorporate green building specifications into all new construction and major renovation projects	Yes	Yes	Yes. NARA revised its specification to require all new construction and major renovation to be designed at a minimum to LEED silver.
Redesign or lease interior space to reduce energy use by daylighting, space optimization,	Yes	Yes	Yes. NARA uses daylight, occupancy, and time delay sensors to control most of its lighting systems.

(A) Strategy	(B) Did you implement this strategy? Yes/No	(C) Was the strategy successful for you? Yes/No	(D) Will you use this strategy again next year? (Please explain in 1-2 sentences)
sensors/control system installation, etc.			Additional lighting control sensors will be installed for multiple facilities under current ESPC projects.
Deploy CEQs Implementing Instructions " Sustainable Locations for Federal Facilities	Yes	Yes	Yes. The challenge for NARA is that presidential foundations create challenges for siting decisions of new presidential libraries.
Include in every construction contract all applicable sustainable acquisition requirements for recycled, biobased, energy efficient, and environmentally preferable products	Yes	Yes	Yes. NARA revised its specification to require all new construction and major renovation to include all applicable sustainable acquisition requirements.
Develop and deploy energy and sustainability training for all facility and energy managers	Yes	Yes	Yes. Due to budget constrain, NARA facility and energy managers are only attending webinar trainings next year.

Goal 3: Fleet Management

(A) Strategy	(B) Did you implement this strategy? Yes/No	(C) Was the strategy successful for you? Yes/No	(D) Will you use this strategy again next year? (Please explain in 1-2 sentences)
Optimize/Right-size the composition of the fleet (e.g., reduce vehicle size, eliminate underutilized vehicles, acquire and locate vehicles to match local fuel infrastructure)	Yes	Yes	Yes. NARA is continually reducing its fleet size via right sizing, elimination of underutilized vehicles, and acquisition of appropriate vehicles.
Acquire only highly fuel-efficient, low greenhouse gas-emitting	Yes	Yes	Yes. NARA is continually working with GSA to acquire better fuel-efficient

(A) Strategy	(B) Did you implement this strategy? Yes/No	(C) Was the strategy successful for you? Yes/No	(D) Will you use this strategy again next year? (Please explain in 1-2 sentences)
vehicles and alternative fuel vehicles (AFVs)			vehicles, low GHG, and AFVs.
Increase utilization of alternative fuel in dual-fuel vehicles	Yes	Yes	Yes. NARA is continually increasing alternative fuel use.
Use a Fleet Management Information System to track fuel consumption throughout the year for agency-owned, GSA-leased, and commercially-leased vehicles	Yes	Yes	Yes. NARA fleet manager sends out monthly reports to encourage users to improve driving habits, and minimize idle time to maximize MPGs.
Increase GSA leased vehicles and decrease agency-owned fleet vehicles, when cost effective	Yes	Yes	Yes. NARA fleet is 100% GSA leased vehicles.

Goal 4: Water Use Efficiency & Management

(A) Strategy	(B) Did you implement this strategy? Yes/No	(C) Was the strategy successful for you? Yes/No	(D) Will you use this strategy again next year? (Please explain in 1-2 sentences)
Purchase and install water efficient technologies (e.g., Waterwise, low-flow water fixtures and aeration devices).	Yes	Yes	Yes. Installing water efficient technologies via current ESPC projects.
Design, install, and maintain landscape to reduce water use.	Yes	Yes	Yes. Upgrade irrigation systems and installing latest technology control systems for Archives II and the Reagan library under the current ESPC projects.
Design and deploy water closed-loop, capture, recharge, and/or reclamation systems.	Yes	Yes	Yes. NARA is continually improving its water closed-loop systems.

Goal 5: Pollution Prevention & Waste Reduction

(A) Strategy	(B) Did you implement this strategy? Yes/No	(C) Was the strategy successful for you? Yes/No	(D) Will you use this strategy again next year? (Please explain in 1-2 sentences)
Eliminate, reduce, or recover refrigerants and other fugitive emissions	Yes	Yes	Yes. NARA is continually reducing the need for added refrigerants, by repairing leaks in a timely manner, and recovering refrigerants when doing maintenance or replacement
Reduce waste generation through elimination, source reduction, and recycling	Yes	Yes	Yes. NARA is continually working to reduce waste generation via recycling programs and compost system.
Implement integrated pest management and improved landscape management practices to reduce and eliminate the use of toxic and hazardous chemicals/materials	Yes	Yes	Yes. NARA is continually working to reduce and eliminate the use of toxic and hazardous chemicals. The IPM program rarely uses any toxic chemicals. Instead it relies on alternative methods to combat pests.
Establish a tracking and reporting system for construction and demolition debris elimination	Yes	Yes	Yes. NARA is working with all contractors to establish construction and demolition debris tracking and reporting requirement for each project. This program results in high reuse and recycling of C&D waste.
Develop/revise Agency Chemicals Inventory Plans and identify and deploy chemical elimination, substitution, and/or management opportunities	Yes	Yes	Yes. NARA is using MAXIMO program to keep track of chemical inventory.

Goal 6: Sustainable Acquisition

(A) Strategy	(B) Did you implement this strategy? Yes/No	(C) Was the strategy successful for you? Yes/No	(D) Will you use this strategy again next year? (Please explain in 1-2 sentences)
Update and deploy agency procurement policies and programs to ensure that federally-mandated designated sustainable products are included in all relevant procurements and services	Yes	Yes	Yes. NARA is revising it's procurement guide to include all mandated sustainable products.
Deploy corrective actions to address identified barriers to increasing sustainable procurements with special emphasis on biobased purchasing	Yes	Yes	Yes. NARA is continually increasing biobased purchasing.
Include biobased and other FAR sustainability clauses in all applicable construction and other relevant service contracts	Yes	Yes	Yes. NARA is continually including biobased and other FAR sustainability clauses in all applicable contracts.
Use Federal Strategic Sourcing Initiatives, such as Blanket Purchase Agreements (BPAs) for office products and imaging equipment, which include sustainable acquisition requirements	Yes	Yes	Yes. NARA is continually increasing the use of federal strategic sourcing initiatives.
Report on sustainability compliance in contractor performance reviews	Yes	Yes	Yes. NARA requires contractors to report on sustainability compliance.

Goal 7: Electronic Stewardship & Data Centers

(A) Strategy	(B) Did you implement this strategy? Yes/No	(C) Was the strategy successful for you? Yes/No	(D) Will you use this strategy again next year? (Please explain in 1-2 sentences)
Identify agency Core and Non-Core Data	Yes	Yes	Yes. NARA plans to reduced its servers from 423 to 299 by 2015.
Ensure that power management, duplex printing, and other energy efficiency or environmentally preferable options and features are enabled on all eligible electronics and monitor compliance	Yes	Yes	Yes. NARA will continually met or exceed its target goal.
Update and deploy policies to use environmentally sound practices for disposition of all agency excess or surplus electronic products, including use of certified eSteward and/or R2 electronic recyclers, and monitor compliance	Yes	Yes	Yes. NARA will continually maintain 100% compliance.
Ensure acquisition of 95% EPEAT registered and 100% of ENERGY STAR qualified and FEMP designated electronic office products	Yes	Yes	Yes. NARA will continually maintain 100% compliance.

Goal 8: Renewable Energy

(A) Strategy	(B) Did you implement this strategy? Yes/No	(C) Was the strategy successful for you? Yes/No	(D) Will you use this strategy again next year? (Please explain in 1-2 sentences)
Purchase renewable energy directly or through Renewable Energy Credits (RECs)	Yes	Yes	Yes. NARA will continually purchase RECs through the GSA contract.

(A) Strategy	(B) Did you implement this strategy? Yes/No	(C) Was the strategy successful for you? Yes/No	(D) Will you use this strategy again next year? (Please explain in 1-2 sentences)
Install onsite renewable energy on federal sites	Yes	Yes	Yes. NARA will install an additional of 430 KW solar-PV at Archives II via ESPC project.
Utilize performance contracting methodologies for implementing ECMs and increasing renewable energy	Yes	Yes	Yes. NARA will install an additional of 430 KW solar-PV at Archives II via ESPC project.
Work with other agencies to create volume discount incentives for increased renewable energy purchases	Yes	Yes	Yes. NARA will continually purchasing RECs through GSA contract.

Goal 9: Climate Change Resilience

(A) Strategy	(B) Did you implement this strategy? Yes/No	(C) Was the strategy successful for you? Yes/No	(D) Will you use this strategy again next year? (Please explain in 1-2 sentences)
Ensure climate change adaptation is integrated into both agency-wide and regional planning efforts, in coordination with other Federal agencies as well as state and local partners, Tribal governments, and private stakeholders	Yes	Yes	Yes. NARA updated its climate change adaptation plan to meet EO 13514 and EO 13653 requirements.
Update agency emergency response procedures and protocols to account for projected climate change, including extreme weather events	Yes	Yes	Yes. NARA is continually upgrading its emergency management plan to meet EO 13514 and EO 13653 requirements.
Ensure agency principals demonstrate commitment to adaptation efforts through internal communications and policies	Yes	Yes	Yes. NARA is updating its Presidential Library Design Guidance to meet climate change adaptation requirements.

(A) Strategy	(B) Did you implement this strategy? Yes/No	(C) Was the strategy successful for you? Yes/No	(D) Will you use this strategy again next year? (Please explain in 1-2 sentences)
Ensure that agency climate adaptation and resilience policies and programs reflect best available current climate change science, updated as necessary	Yes	Yes	Yes. NARA will continue to update plans as needed.
Incorporate climate preparedness and resilience into planning and implementation guidelines for agency-implemented projects	Yes	Yes	Yes. NARA will continue to update plans and guidelines as warranted on agency projects

National Archives and Records Administration

Goal 1: Greenhouse Gas (GHG) Reduction

NARA Progress toward Scope 1 & 2 Greenhouse Gas Goals

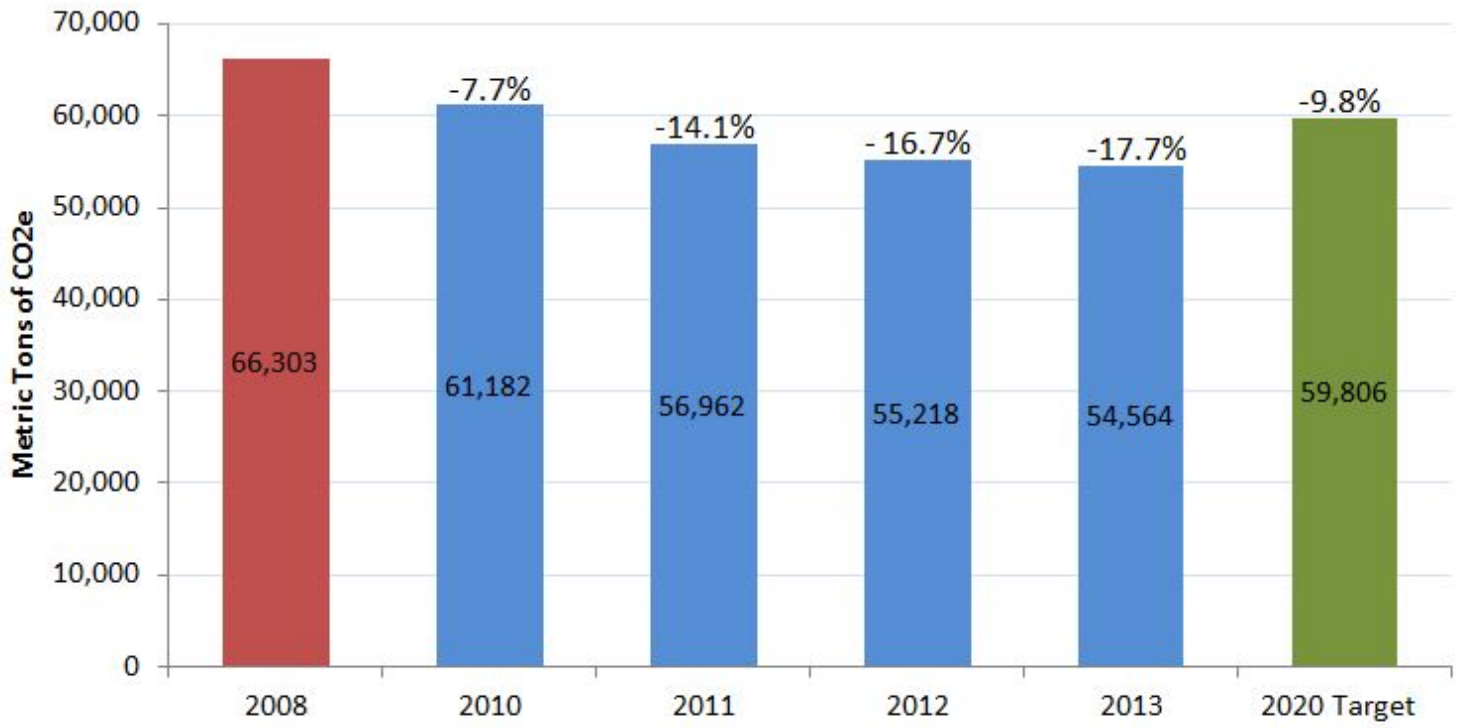


Table 1-1: Goal 1 Strategies - Scope 1 & 2 GHG Reductions

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top 5? Yes/No/NA	(C) Strategy Narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in next 12 months
Use the FEMP GHG emission report to identify/target high emission categories and implement specific actions to resolve high emission areas identified	Yes	Agency exceeded Scope 1 and Scope 2 GHG reduction target.	Continue to improve on Agency GHG reduction for Scope 1, Scope 2, and Scope 3 emissions.
Ensure that all major renovations and new building designs are 30% more efficient than applicable code	[Please Choose]		
Implement in EISA 432 covered facilities all lifecycle cost effective ECMs identified	[Please Choose]		
Reduce on-site fossil-fuel consumption by installing more efficient boilers, generators, furnaces, etc. and/or use renewable fuels	Yes	Install more energy efficient building system equipment via ESPC projects.	Completed 100% of Archives 2 ESPC project. Complete 100% of the ECMs for Presidential Libraries and South East Archives (Group 1). Complete 50% of the ECMs for Presidential Libraries (Group 2).
Reduce grid-supplied electricity consumption by improving/upgrading motors, boilers, HVAC, chillers, compressors, lighting, etc.	Yes	Install more energy efficient building system equipment via ESPC projects. Increase renewable energy (430 kw solar) at Archives 2.	Complete 100% of Archives 2 ESPC project. Complete 100% of the ECMs for Presidential Libraries and South East Archives (Group 1). Complete 50% of the ECMs for Presidential Libraries (Group 2).
Employ operations and management best practices for energy consuming and	Yes	O&M best practices are included in the CFM contracts.	Continue to work with the CFM contractors to improve building O&M practices.

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top 5? Yes/No/NA	(C) Strategy Narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in next 12 months
emission generating equipment			
Install building utility meters and benchmark performance to track energy and continuously optimize performance	Yes	All NARA-owned buildings are metered.	Continuously use building meters to help with M&V process, and optimize energy performance.

NARA Progress toward Scope 3 Greenhouse Gas Goals

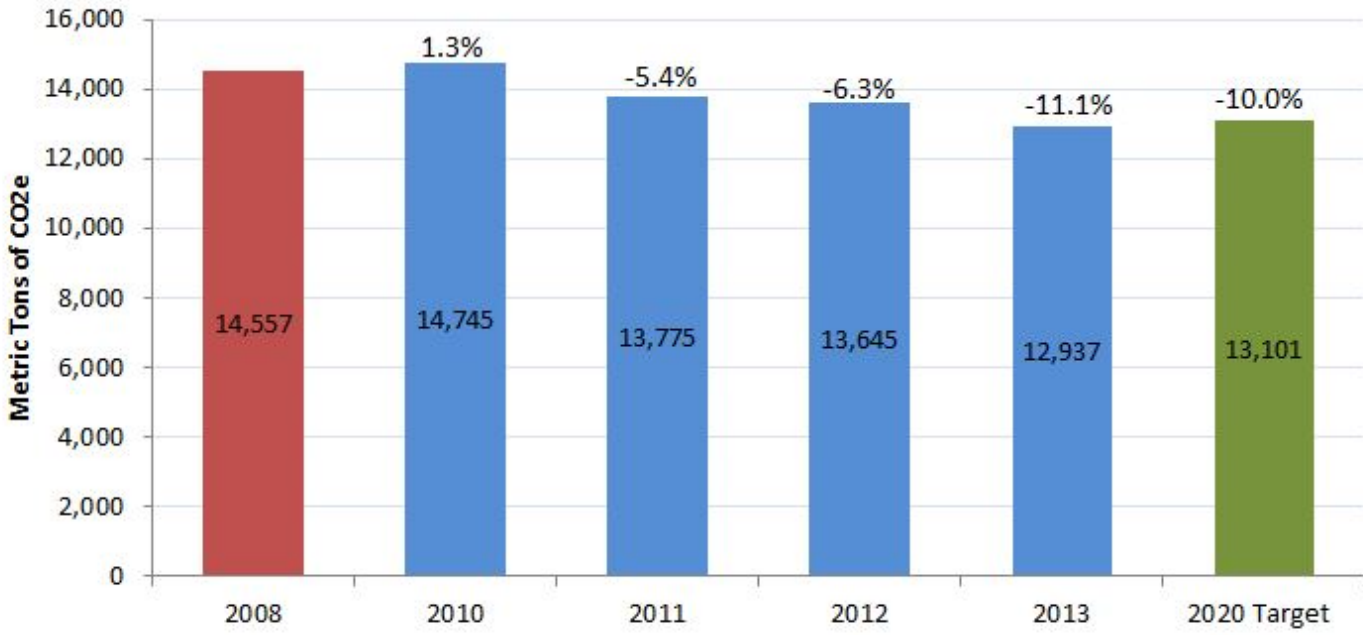


Table 1-2: Goal 1 Strategies - Scope 3 GHG Reductions

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top 5? Yes/No/NA	(C) Strategy Narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in the next 12 months
Develop and deploy employee commuter reduction plan	[Please Choose]		
Reduce employee business ground travel	Yes	Agency reduced employee business travel due to budget cuts and as part of Scope 3 reduction goals.	Policy dictates employee business travel is approved by senior management on case by case basis. Ground travel reduced by over 50%.
Reduce employee business air travel	Yes	Agency reduced business travel due to budget cuts and as part of Scope 3 reduction goals.	Policy dictates employee business air travel is approved by senior management on case by case basis. Air travel reduced by over 50%.
Develop and deploy employee commuter reduction plan	Yes	Agency conducted an agency wide CFT commuter survey in 2012. NARA has established PTSP, AWS, and CWS, and telework strategies to reduce Scope 3 GHGs. Agency is also encouraging carpooling, walking, and biking programs.	Reduce single occupancy employee vehicle commutes by 15%.
Use employee commuting survey to identify opportunities and strategies for reducing commuter emissions	Yes	Agency identified opportunities to improve employee commuting. NARA is conducting another commuter survey in summer of 2014.	Expect continued reduction of employee contributions to Scope 3 GHG emissions.
Increase number of employees eligible for telework and/or the total number of days teleworked	Yes	Allow eligible employees to work CWS days, encourage use of mass transit, and increase number of teleworkers.	Supervisors encourage and approve (based on feasibility) employee telework agreements and AWS. Telework and AWS continue to increase at about 3% annually.

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top 5? Yes/No/NA	(C) Strategy Narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in the next 12 months
Develop and implement bicycle commuter program	[Please Choose]		
Provide bicycle commuting infrastructure	[Please Choose]		

National Archives and Records Administration

Goal 2: Sustainable Buildings

NARA Progress toward Facility Energy Intensity Reduction Goals (FY 2013 Goal: -24%)



Agency Progress toward Total Buildings Meeting the Guiding Principles

Note: NARA is currently at 8.00% for above goal. There is an error in the method for extracting data from the FRPP database.

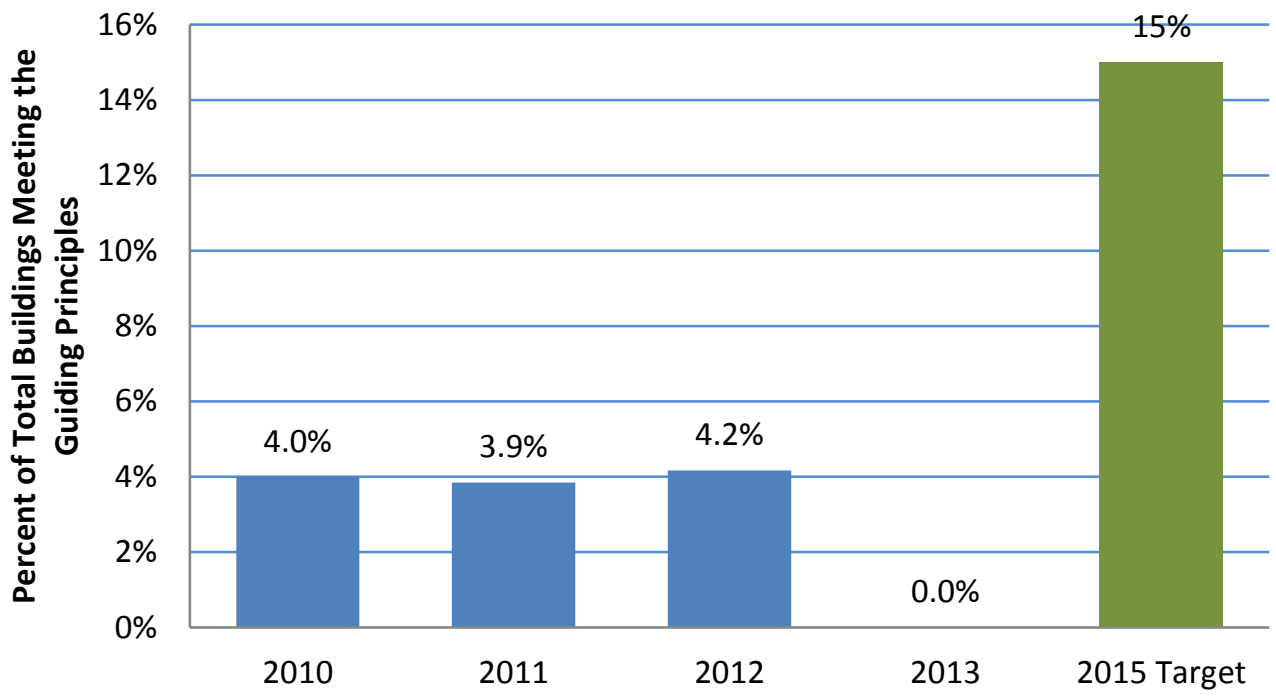


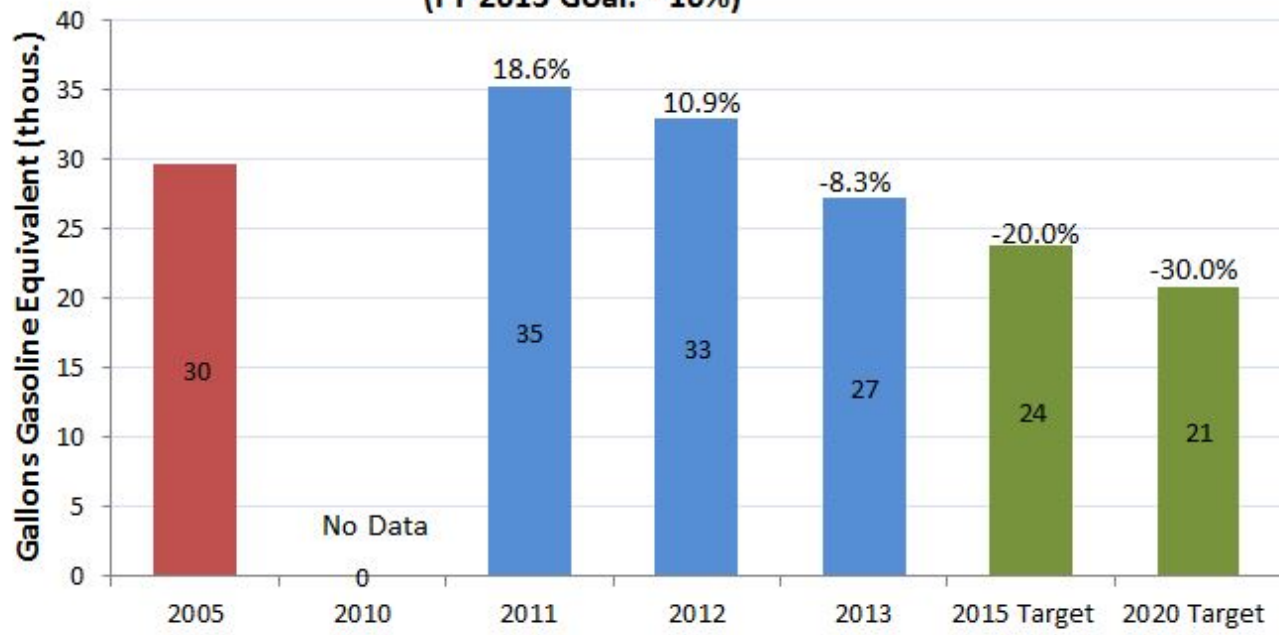
Table 2: Goal 2 Strategies &€ Sustainable Buildings

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top 5? Yes/No/NA	(C) Strategy narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in the next 12 months
Incorporate green building specifications into all new construction and major renovation projects	Yes	Revised Presidential Libray specifications again new EO 13563 to include climate change adaptation, sustainability, and LEED certification.	Working toward LEED certification for Archives II.
Redesign or lease interior space to reduce energy use by daylighting, space optimization, sensors/control system installation, etc.	Yes	Include all sustainability requirements for current ESPC project for Archives 2, 11 Presidential Libraries, and Archives at Atlanta (SE Archives).	Complete Archives II ESPC. Complete Presidential Libraries (Group 1), and 50% completion of ECMs, Presidential Libraries (Group 2).
Deploy CEQs Implementing Instructions " Sustainable Locations for Federal Facilities	Yes	EO 13514 implementation instructions are included in all new building designs and and construction.	The challenge for NARA is that presidential foundations make the siting decisions for new presidential libraries.
Include in every construction contract all applicable sustainable acquisition requirements for recycled, biobased, energy efficient, and environmentally preferable products	Yes	New contracts contain EO 13514 requirements.	NARA policy is in place requiring contractors submit recycling, reuse, and reduction requirements.
Develop and deploy energy and sustainability training for all facility and energy managers	Yes	NARA SSO is responsible for sustainability training for facility managers.	Due to budget constraints, training may be postponed until 2015. Ongoing webinar training for facility (e.g. M&V training, and ESPC project training) managers continues.

National Archives and Records Administration

Goal 3: Fleet Management

NARA Progress toward Fleet Petroleum Reduction Goals (FY 2013 Goal: -16%)



NARA Progress toward Fleet Alternative Fuel Consumption Goals (FY 2013 Goal: +114.4%)

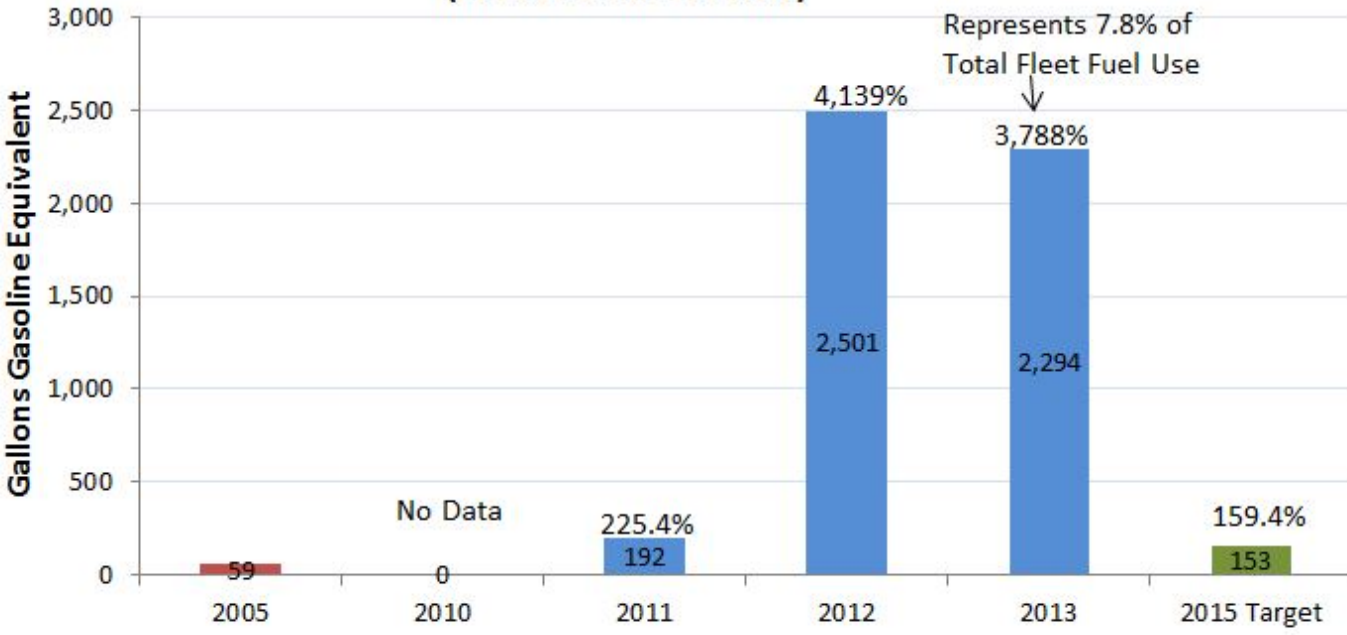


Table 3: Goal 3 Strategies &€ Fleet Management

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top 5? Yes/No/NA	(C) Strategy narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in the next 12 months
Optimize/Right-size the composition of the fleet (e.g., reduce vehicle size, eliminate underutilized vehicles, acquire and locate vehicles to match local fuel infrastructure)	Yes	The entire fleet was scrutinized for optimizing vehicle allocation	NARA goal was to reduce fleet size to 65 vehicles by FY2015. NARA is ahead in fleet goal reduction and vehicle allocation methodology (VAM). It reduced its fleet to 61 vehicles with corresponding reduction in fuel consumption.
Reduce miles traveled (e.g., share vehicles, improve routing with telematics, eliminate trips, improve scheduling, use shuttles, etc.)			
Acquire only highly fuel-efficient, low greenhouse gas-emitting vehicles and alternative fuel vehicles (AFVs)	Yes	NARA vehicles are AF capable and fuel up with AFs whenever feasible (withn 5 miles or 15 minutes of destination).	NARA has significantly increased AF fuel use and will maintain at least 8% AF fuel use.
Increase utilization of alternative fuel in dual-fuel vehicles	Yes	NARA vehicles are AF capable and fuel up with AFs whenever feasible (withn 5 miles or 15 minutes of destination).	Fleet Manager sends out monthly reports to encourage better driving habits and reduce idle time, thus maximizing mpgs.
Use a Fleet Management Information System to track fuel consumption throughout the year for agency-owned, GSA-leased, and commercially-leased vehicles	Yes	NARA uses GSA GPS tracking system to track fuel use and driving habits.	Fleet Manager sends out monthly reports to encourage better driving habits and reduce idle time, thus maximizing mpgs.
Increase GSA leased vehicles and decrease agency-owned fleet	Yes	NARA has 60 GSA leased vehicles. One vehicle is NARA owned, and is an EV.	NARA is replacing vehicles that better match the vehicle with use, including hybrid and electric vehicles.

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top 5? Yes/No/NA	(C) Strategy narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in the next 12 months
vehicles, when cost effective			

National Archives and Records Administration

Goal 4: Water Use Efficiency&Management

NARA Progress toward Potable Water Intensity Reduction Goals (FY 2013 Goal: -12%)

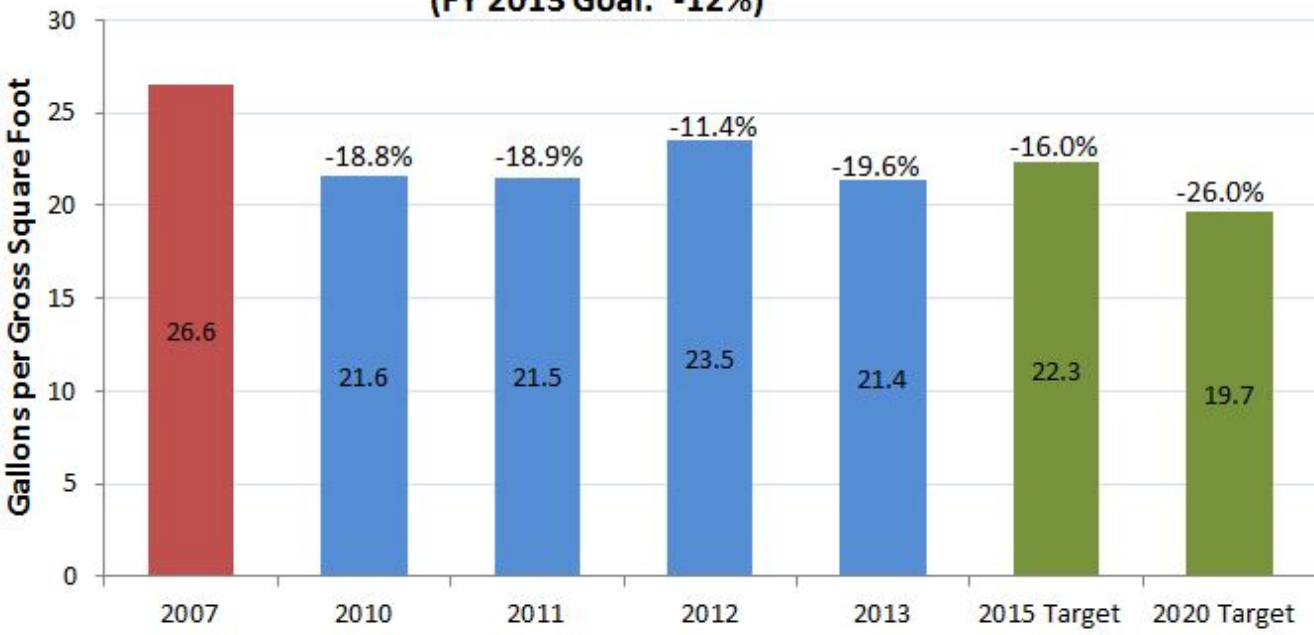


Table 4: Goal 4 Strategies & Water Use Efficiency & Management

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top 5? Yes/No/NA	(C) Strategy narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in the next 12 months
Purchase and install high efficiency technologies (e.g., WaterSense)	Yes	Agency completed retrofit of bathroom fixtures and landscaping water systems at Archives 1 and Archives 2 via ESPC contracts.	Will complete Archives 2 ESPC (Phase2) and Reagan Library with new irrigation system and controls.
Prepare and implement a water asset management plan to maintain desired level of service at lowest life cycle cost (for best practices from the EPA, go to http://go.usa.gov/KvbF)	Yes	Using LEED strategies for best water use.	Continue to reduce water use to meet or exceed EO 13423 target.
Minimize outdoor water use and use alternative water sources as much as possible	Yes	Continue to improve water efficiency using EPA and LEED best practices.	Complete Archives 2 ESPC (Phase2) with new irrigation system and controls. Water saving features also incorporated into Presidential Library ESPC projects.
Design and deploy water closed-loop, capture, recharge, and/or reclamation systems	Yes	Employ only closed loop chilled and hot water systems.	Continually maintain water savings by closely monitoring for leakage, and repairing all closed loop systems. Using most efficient settings for AHUs to control water use.
Install advanced meters to measure and monitor (1) potable and (2) industrial, landscaping and agricultural water use			
Develop and implement programs to educate employees about methods to minimize water use	Yes	Use Earth Day and America Recycles Day to encourage NARA employees and visitors to use water more efficiently.	Continue to reduce water use to meet or exceed EO 13423 target.

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top 5? Yes/No/NA	(C) Strategy narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in the next 12 months
Assess the interconnections and dependencies of energy and water on agency operations, particularly climate change's effects on water which may impact energy use			

National Archives and Records Administration

Goal 5: Pollution Prevention&Waste Reduction

Table 5: Goal 5 Strategies &“ Pollution Prevention & Waste Reduction

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top 5? Yes/No/NA	(C) Strategy narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in the next 12 months
Eliminate, reduce, or recover refrigerants and other fugitive emissions	Yes	NARA is continually reducing the need for refrigerants by going to smaller package system when feasible. NARA also recovers and clean refrigerants whenever service or replacement projects are conducted. NARA also monitors refrigerant as part of ongoing maintenance.	Maintain 5% or less annual refrigerant loss.
Reduce waste generation through elimination, source reduction, and recycling	Yes	NARA follows requirements of EO 13423 and EO 13514.	NARA goal is to reduce waste generated by at least 50% by 2020.
Implement integrated pest management and improved landscape management practices to reduce and eliminate the use of toxic and hazardous chemicals/materials	Yes	Pest management and landscape management are in place for all NARA maintenance contracts.	NARA requires contractors to submit monthly report that include al chemical used. NARA will continually eliminate the use of toxic chemicals. Agency uses IPM at each site.
Establish a tracking and reporting system for construction and demolition debris elimination	Yes	Tracking is accomplished using MAXIMO reporting system.	MAXIMO QC requires 95% compliance on all tasks.
Develop/revise Agency Chemicals Inventory Plans and identify and deploy chemical elimination, substitution, and/or management opportunities	Yes	Include in the CFM contract is a tracking system for chemicals	CFM Contractors are required to submit monthly reports for NARA COR to review, monitor, and suggest improvements.

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top 5? Yes/No/NA	(C) Strategy narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in the next 12 months
Take inventory of current HFC use and purchases			
Require high-level waiver or contract approval for any agency use of HFCs			
Ensure HFC management training and recycling equipment are available			

National Archives and Records Administration

Goal 6: Sustainable Acquisition

Percent Of Applicable Contracts Containing Sustainable Acquisition Requirements

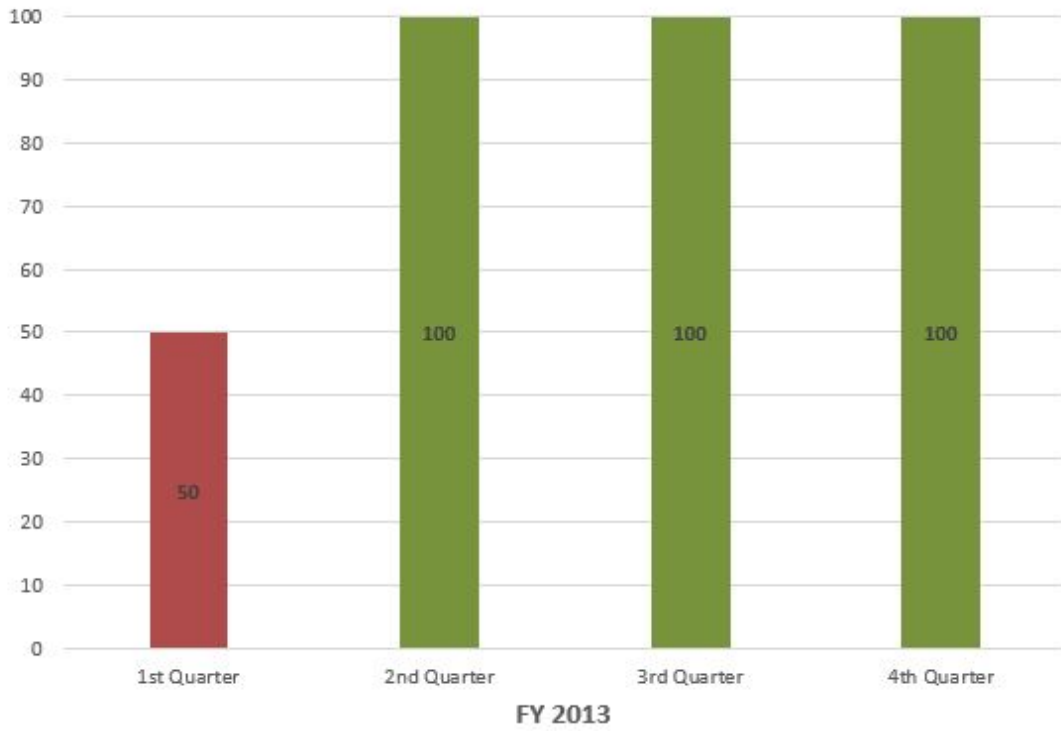


Table 6: Goal 6 Strategies &€ Sustainable Acquisition

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top 5? Yes/No/NA	(C) Strategy narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in the next 12 month
Update and deploy agency procurement policies and programs to ensure that federally-mandated designated sustainable products are included in all relevant procurements and services	Yes	NARA continues to implement all mandated sustainable products in its revisions to the Procurement Guide.	Updating of the Procurement Guide remains an ongoing process. Completion should be achieved within the next twelve months.
Deploy corrective actions to address identified barriers to increasing sustainable procurements with special emphasis on biobased purchasing	Yes	NARA continues to expand its biobased purchasing efforts.	Re-emphasizing the importance of procuring biobased products to NARA's customers during the acquisition planning process.
Include biobased and other FAR sustainability clauses in all applicable construction and other relevant service contracts	Yes	NARA continues to improve in implementing FAR sustainability clauses in allapplicable contracts.	Including biobased and other FAR sustainability clauses is a mandatory element for all NARA applicable contracts
Review and update agency specifications to include and encourage biobased and other designated green products to enable meeting sustainable acquisition goals	No		
Use Federal Strategic Sourcing Initiatives, such as Blanket Purchase Agreements (BPAs) for office products and imaging equipment, which include sustainable acquisition requirements	Yes	NARA is continually managing the utilization of Federal strategic sourcing initiatives and improving on how sustainable acquisitions requirements are administered.	NARA will continue to maximize savings to effectively accomplish its strategic initiatives concerning sustainable acquisition requirements between blanket purchase agreements (BPA), GSA federal schedules (FSS), and government-wide purchase cards (GWPC).

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top 5? Yes/No/NA	(C) Strategy narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in the next 12 month
Report on sustainability compliance in contractor performance reviews	Yes	NARA requires contractors to report on sustainability compliance.	NARA will continue to report contractor's performance concerning sustainability compliance as required.

National Archives and Records Administration

Goal 7: Electronic Stewardship&Data Centers




EPEAT	POWER MANAGEMENT	END-OF-LIFE	
			

Table 7: Goal 7 Strategies &€‘ Electronic Stewardship & Data Centers

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top 5? Yes/No/NA	(C) Strategy narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in the next 12 months
Identify agency Core and Non-Core Data	Yes	NARA had identified agency core and non-core data and developed the Data Center Consolidation plan in August 2010.	NARA plans to reduce its servers from 423 in 2010 to 299 by 2015.
Consolidate 40% of agency non-core data centers	No	NARA has only one Data Center located at Archives II, College Park, Maryland.	
Optimize agency Core Data Centers across total cost of ownership metrics			
Ensure that power management, duplex printing, and other energy efficiency or environmentally preferable options and features are enabled on all eligible electronics and monitor compliance	Yes	NARA met or exceeded its target goals for power management, duplex printing, and other energy efficiency or environmentally preferable options.	Continually maintaining current status.
Update and deploy policies to use environmentally sound practices for disposition of all agency excess or surplus electronic products, including use of certified eSteward and/or R2 electronic recyclers, and monitor compliance	Yes	NARA disposed 100% of its electronic waste products through GSA surplus and recycling programs.	Continually maintaining 100% compliance.
Ensure acquisition of 95% EPEAT registered and 100% of ENERGY STAR qualified and FEMP designated electronic office products	Yes	100% of NARA equipment acquired is EPEAT registered and /or Energy Star rated.	Continually maintaining 100% compliance.

National Archives and Records Administration

Goal 8: Renewable Energy

**NARA Use of Renewable Energy as a Percentage of Electricity Use
(FY 2013 Goal: 7.5%)**

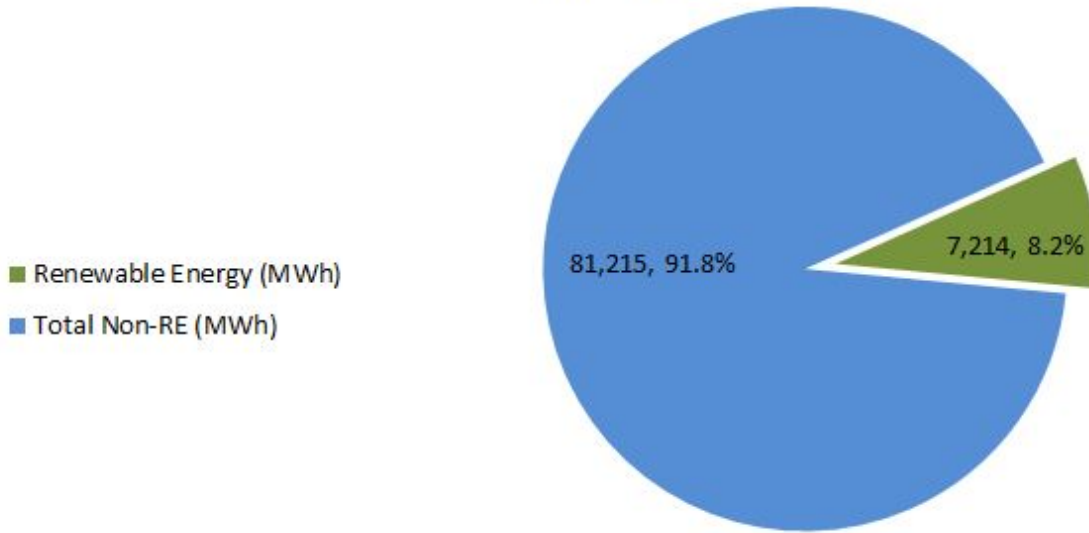


Table 8: Goal 8 Strategies &€ Renewable Energy

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top 5? Yes/No/NA	(C) Strategy narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in the next 12 months
Purchase renewable energy directly or through Renewable Energy Credits (RECs)	Yes	NARA purchases renewable energy through GSA utility packages.	Continue to purchase RECs through GSA contracts.
Install onsite renewable energy on federal sites	Yes	NARA is continually increasing the installation of on site renewable energy.	NARA will complete installation of an additional 430 KW solar/PV at Archives II, College Park, Maryland via current ESPC project.
Lease land for renewable energy infrastructure	NA	This is not economical for NARA.	
Develop biomass capacity for energy generation	NA	This is not economical for NARA.	
Utilize performance contracting methodologies for implementing ECMs and increasing renewable energy	Yes	NARA plans to add 430 KW solar/PV system through the current ESPC project at Archives II, College Park, Maryland.	NARA will complete installation of an additional 430 KW solar/PV at Archives II, by December 2014.
Work with other agencies to create volume discount incentives for increased renewable energy purchases	Yes	NARA and other agencies purchases renewable energy through GSA utility packages.	Increase the renewable energy purchased to meet latest renewable energy requirements.

National Archives and Records Administration

Goal 9: Climate Change Resilience

Table 9: Goal 9 Strategies & Climate Change Resilience

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top 5? Yes/No/NA	(C) Strategy narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in the next 12 months
Ensure climate change adaptation is integrated into both agency-wide and regional planning efforts, in coordination with other Federal agencies as well as state and local partners, Tribal governments, and private stakeholders	Yes	NARA is updating policies to reflect climate change adaptation. NARA regularly networks with other agencies and stake holders on climate change. LEED principles also help reinforce climate change adaptation planning.	NARA plans to increase the number of LEED certified buildings in it's inventory. Most improvements are being done via ESPCs as traditional funding is limited.
Update agency emergency response procedures and protocols to account for projected climate change, including extreme weather events	Yes	Agency Emergency Management Plan will be updated to include climate adaptation and mitigation.	Update the draft Emergency Management Plan again by March 2015 to include new requirements in EO 13653.
Ensure workforce protocols and policies reflect projected human health and safety impacts of climate change			
Update agency external programs and policies (including grants, loans, technical assistance, etc.) to incentivize planning for, and addressing the impacts of, climate change			
Ensure agency principals demonstrate commitment to adaptation efforts through internal communications and policies	Yes	Update Presidential Library Guidance again to include latest climate adaptation changes.	Update Presidential Library Guidance and other policies to reflect the evolving climate change adaptation initiatives.
Identify vulnerable communities that are served			

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top 5? Yes/No/NA	(C) Strategy narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in the next 12 months
by agency mission and are potentially impacted by climate change and identify measures to address those vulnerabilities where possible			
Ensure that agency climate adaptation and resilience policies and programs reflect best available current climate change science, updated as necessary	Yes	Agency plans are reviewed and updated every three years (more often, if needed).	Continue to update plans as new information becomes available, or at least every three years, whichever is less.
Design and construct new or modify/manage existing agency facilities and/or infrastructure to account for the potential impacts of projected climate change			
Incorporate climate preparedness and resilience into planning and implementation guidelines for agency-implemented projects	Yes	Agency projects already utilize LEED principles, reflecting sustainability and many climate change best practices. As new best practices become available, they will be incorporated into the planning.	Continue to update guidelines as needed on all agency projects.

National Archives and Records Administration

Goal 10: Energy Performance Contracts

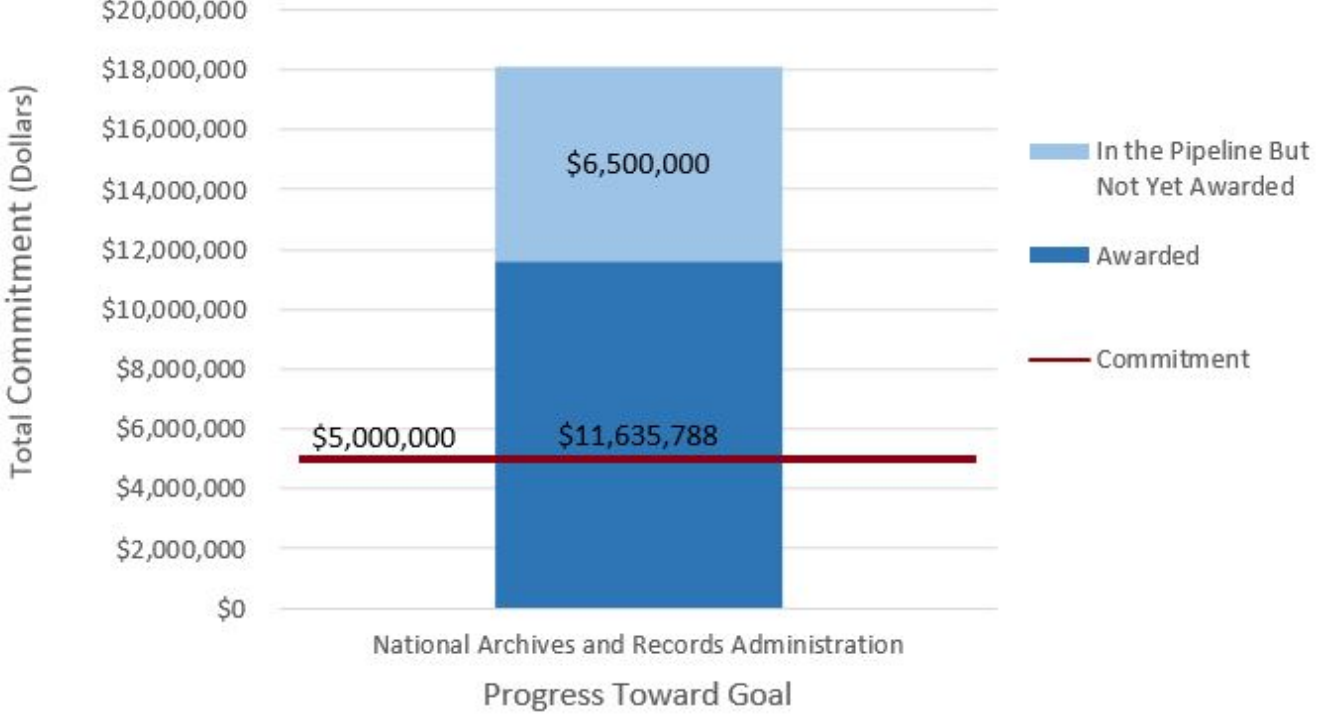


Table 10: Goal 10 Strategies - Energy Performance Contracting

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top Five? Yes/No/NA	(C) Strategy Narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in next 12 months
Evaluate 25% of agencies most energy intensive buildings for use with energy performance contracts	Yes	NARA had evaluated 100% of agency owned facilities for potential energy savings measures via ESPC projects.	Continually looking for additional energy savings measures throughout all NARA owned facilities.
Prioritize top ten projects which will provide greatest energy savings potential	Yes	NARA prioritizes ESPC projects based on the greatest energy savings potential as follow: Archives II, Archives I, Presidential libraries and Archives at Atlanta.	100% completion of the Archives II, phase-2 ESPC project and the Presidential Library Group-1 ESPC project. 50% completion of the Presidential Library Group-2 ESPC project.
Cut cycle time of performance contracting process by at least 25%			
Assign agency lead to participate in strategic sourcing initiatives	Yes	NARA agency energy manager is assigned as the project manager for all NARA ESPC projects.	Continually looking for additional energy savings measures throughout all NARA owned facilities.
Devote 2% of new commitments to small buildings (<20k sq. ft.)			
Identify and commit to include 3-5 onsite renewable energy projects in energy performance contracts	[Please Choose]		
Ensure relevant legal and procurement staff are trained by FEMP ESPC/ UESC course curriculum	Yes	NARA energy management team continually attending FEMP-ESPC webinar trainings.	100% facility managers will attend FEMP-ESPC trainings.
Provide measurement and verification data for all awarded projects	[Please Choose]		

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top Five? Yes/No/NA	(C) Strategy Narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in next 12 months
Enter all reported energy savings data for operational projects into MAX COLLECT (max.gov)	Yes	NARA has been reporting ESPC project data into MAX COLLECT system.	NARA will comply 100%.

National Archives and Records Administration

Business Support Services

Facility and Property Management Division

Climate Change Adaptation Plan

(An Attachment to the NARA Sustainability Plan)

Revised May 29, 2014

Introduction:

Earth's weather and climate system are changing, and many mistakenly consider them to be the same. It is important for understanding climate change that we make the distinction between weather and climate. Climate is defined as long-term averages (trends) and variations in weather measured over decades, whereas weather represents shorter term changes (observations of days to years, but generally < 10 years). The Earth's climate system includes the land surface, atmosphere, oceans, and ice. Aspects of global climate are changing. Evidence for change in the climate system is abundant, from the outer reaches of the atmosphere to the ocean bottom.

Worldwide, Scientists and engineers have compiled the evidence for climate change using satellites, weather balloons, devices at surface stations, and specialized observing systems (e.g. tidal buoys, glacial ice monitors, ice cores, etc.), all monitoring the Earth's weather and climate.

Research data shows that humans do influence climate change. Human influences as a primary driver to recent climate change is based on the following lines of evidence:

- 1) Fundamental understanding of how certain gases trap heat, how our climate system responds to the increases in the gases, and how human and natural factors influence climate.
- 2) Reconstructing past climates using data from tree rings, ice cores, and coral, showing global surface temperatures over the last several decades are unusual, with the last decade (2000-2009) being warmer than any time in the last 1300 years.
- 3) Outputs from climate models that simulate climate of the past century, and separate human and natural factors that influence climate. With human factors removed, models show solar and volcanic activity should have actually cooled the earth during this period, and other natural variations are too small to explain global warming. When human influences are included, models reproduce warming observed for the last 50 years.
- 4) "Fingerprint" studies attribute observed climate change to particular causes. One example is that the stratosphere (the layer above the troposphere) is cooling while the Earth's surface and lower atmosphere is warming, suggesting warming is from increased heat-trapping gases. If warming was due to increased solar output, Earth's atmosphere should have warmed throughout, including the stratosphere.

This body of evidence strongly suggests the planet has warmed, so debating if the Earth's surface is warming is meaningless. Instead, we must focus our efforts on reducing our impacts on future climate change (mitigation), and find ways to deal with present and future climate (adaptation). Global climate is projected to continue changing – how rapidly and radically

depends on the amount of heat-trapping greenhouse gases we have already emitted and continue to emit globally. The National Archives and Records Administration (NARA) is preparing to take on the challenges and opportunities of climate change mitigation and adaptation.

NARA's responsibility as a Federal agency for meeting requirements of EO 13423, EO13514, and EO13653 is clear. We must continue to search for better ways to be both sustainable and meet present and future climate change challenges. Simultaneously, we are exploiting any climate change opportunities.

It is essential that NARA both mitigate and adapt in our plans for climate change. Mitigation represents the steps we take to reduce greenhouse gasses we produce as an agency. Reduced emissions of heat trapping gases mean less future warming and reduced future impacts. Emissions can be reduced through improved energy efficiency and switching to low-carbon/non-carbon energy sources. We do this primarily by reducing the amount of energy used at our facilities, and by encouraging use of mass transit systems, telework, reduced business travel, and alternate work schedules.

On the other hand, adaptation refers to action to prepare for and adjust to new and changing conditions, thereby reducing harm or taking advantage of new opportunities. We must understand that climate change is already happening, and will continue to happen. The severity and speed of climate change depends on what we do both now and the future. Adaptation planning is important in all sectors and all levels of government and the private sector, but few measures have been implemented. Adaptation refers to the steps we must take now and in the future to protect the health and safety of people, buildings and other infrastructure, holdings, the natural system, and our communities from climate change. Adaptation and mitigation are closely linked. Without significant mitigation actions, adaptation efforts will be more far more difficult and costly.

To be successful, NARA must include climate change adaptation planning into all programs, policies, and operations. One of the first steps is to conduct agency-level and facility-level vulnerability and risk assessments. Risk assessment includes studies that estimate the likelihood

of specific sets of events occurring and/or their potential consequences. Experts often provide quantitative information regarding the nature of the climate change risk and the degree of uncertainty surrounding their estimates. Risk assessment require common sense and good data to adequately determine risk with certainty. Due to a lack of definitive localized information pertaining directly to climate change, risk assessments are difficult to conduct at the facility level. Therefore, risk assessment to date has been primarily regional in nature and mostly qualitative. This puts NARA in an uncomfortable position, as we are the protectors of our nation's irreplaceable documents and artifacts. Risk assessment focuses on the likelihood of negative consequences but does not exclude the possibility that there may also be beneficial consequences.

Given the paucity of current, granular localized data, NARA does not have resources to conduct a detailed quantitative assessment of vulnerability and risk of its mission to climate change at this time. Instead, NARA's Climate Change Adaptation Planning currently uses a common sense approach using data from widely-accepted scientific literature on regional impacts of climate change to identify our potential vulnerabilities, assess current and future risk and make suggestions for adaptive changes. The Agency is already conducting priority actions to begin integrating climate adaptation planning into all of its activities. Our actions are part of a larger Federal effort to promote a healthy and prosperous nation resilient to the changing climate.

NARA is a geographically diverse agency with two Washington DC based Archives Buildings, and many other Regional Archives, Federal Records Centers and Presidential Libraries located throughout the continental United States. NARA must continue it's mission of protecting records of the Federal Government, and making that information available to American citizens. NARA must balance our mission with future requirements dictated by a changing climate. NARA, while promoting adaptation to climate change, must continue to address the following: 1) Preserve and process records to ensure access by the public as soon as legally possible; 2) Address challenges of electronic records in Government to ensure success in fulfilling NARA's mission in the digital era; and 3) Provide prompt, easy, and secure access to our holdings anywhere, anytime. These goals and potential impacts of changing climate on maintaining

records integrity and human health, and operations of the Agency, must be considered for any NARA future climate adaptation planning.

NARA continues to improve its efforts to adapt to climate change. Long range planning is critical to making good decisions for meeting a changing climate. Since 2012, NARA has created a new plan for Presidential Libraries and Museums, and the SE Regional Archives. This new plan deals with planning, construction, and acquisition of new facilities, and for major construction or improvements at existing facilities.

NARA fully subscribes to the concepts of LEED as both sustainable and meeting needs for adapting to changing climate. Two NARA-owned facilities are now certified LEED Platinum, and two facilities are working toward LEED certification. As a result of adopting LEED strategies, NARA now requires new facilities to be built to LEED Platinum, and construction at existing facilities to be built LEED Silver. Furthermore, the agency now incorporates LEED standards and pricing into periodic building condition reports (BCRs). The BCRs help NARA plan for upcoming costs and projects needed to maintain sustainable buildings, improve building system integrity, energy, and water use, and adapt to climate change. The BCR mechanism also helps NARA plan for potential on site renewable energy, and more efficient energy systems when practicable.

NARA, with the help of DOE, awarded two significant ESPC projects in 2013. These two projects are in addition to successful earlier ESPC projects awarded in 2008 and 2009. These projects helped set NARA's energy and water use trajectories to historical lows, and helps NARA create a path to sustainability, while addressing climate change adaptation challenges.

NARA senior management is engaged in climate change adaptation planning and all other sustainability aspects. For instance, all procurements must meet rigorous standards for bio-based, environmentally preferable, Energy Star, EPEAT, and other sustainable standards. Life cycle cost and life cycle environmental impacts are considered for procurement, use, and end of life of products and services. Contractors performing services or acquiring products used for, or on NARA's behalf must also meet these acquisition standards. Other services, including

automobile and building leasing also require these products and buildings must simultaneously fulfill sustainability requirements and address climate change adaptation strategies.

NARA's Mission:

NARA's mission of preserving and protecting our documented national heritage is two-fold, and cannot be compromised. NARA serves American democracy by: 1) safeguarding and preserving the records of our Government; and 2) ensuring that the people can discover, use, and learn from this documentary heritage. We ensure continued access to essential documents of the rights of American citizens and the actions of their government. To that end, we support democracy, promote civic education, and facilitate historical understanding of our national experience.

How Climate Change Impacts Agency Mission and Strategic Goals :

Over the last 50 years global climate has changed significantly. More change, with likely severe consequences, is expected in the next 60-80 years. Impacts of the changes are also clearly being felt across the United States today. Storms are causing considerably more damage, and disrupting our lives with more frequency; droughts are more common in certain areas; and sea level is rising. Some low lying areas around Norfolk, Virginia now flood 120 days per year. This flooding is expected to increase to over 300 days per year in the next 20 years.

NARA's facilities are scattered across most of the nation, so NARA must plan for local and regional climate change. Over the last five decades, average temperature across the United States rose about 2°F, and precipitation increased an average of 5 percent. However, in spite of overall precipitation increases, in many areas, precipitation has and will continue to decrease significantly. Extreme weather cycles, heat waves, intense precipitation events and regional droughts, are becoming more frequent. One precipitation trend in the United States is for increasing frequency and intensity of heavy downpours. These events cause combined sewerage systems to fail, and localized flooding. Change in heavy downpours was responsible for much of the observed increase in overall precipitation during the last 50 years. Each climate model shows change is inevitable, but there are wide differences in how severe the changes will affect future weather events and climate. This creates uncertainty for determining our vulnerabilities and risk.

To be ready for an uncertain future, NARA must incorporate realistic climate change expectations into its programs, policies, rules, and operations to ensure they remain effective regardless of future climatic conditions.

One particular area of complexity is sea level rise, and how that rise puts our built environment and people at risk. Water expands as it warms causing sea levels to rise. Glacial and ice sheet melting also contributes to sea level rise. The sea level has also risen ~ 8 inches or more along some coastal areas of the United States, and is projected to rise another 1 to 4 feet by 2100. Although these changes are gradual and of concern (salt intrusion into drinking water systems, and creating conditions for the spread of disease, etc.) sea level rise by itself is not generally considered a catastrophic problem. However, sea level rise combined with storms (rainfall, wind speed, direction, and rotational effects) and other factors (tides, subsidence, antecedent soil moisture, changes in watersheds, and other man made built environment influences, etc.), massive property damage and loss of life may occur. Oceans absorb over 90% of atmospheric heat including those resulting from, or associated with, emissions from human activity. Precipitation since 1991 (relative to 1901-1960) increased the most in the Northeast (8%), Midwest (9%), and southern Great Plains (8%), while much of the Southeast and Southwest had a mix of areas of increases and decreases. Certain susceptible areas such as Washington D.C. and New York City have experienced extensive damage recently from the combination of sea level rise, storm surge, and tide phase. Although much of the blame is placed on the storms, the likelihood remains for repeat scenarios due to the predisposition from sea level rise in these susceptible areas.

Climate change trends and secondary influence are predicted to continue because greenhouse gases (GHGs) already deposited in the atmosphere remain for tens to hundreds of years. Even if we were able to completely eliminate man's contributions to GHGs, many of the predicted climate effects would still occur over the next few decades. Because globally, humans continue to contribute to GHGs, the effects may become more pronounced due to past, current and future emissions. Even without any future human influence, climate change will likely occur against a background of natural variations in climate. Climate models predict that in the United States, temperatures will warm substantially during the 21st century. These changes pose risks for

human and environmental systems. Certain at risk populations, systems and environmental components include: public health, air quality, drinking water sources, freshwater resources, the coastal environment, wildlife and ecosystems, infrastructure, economic activity, and cultural resources.

Best available science directs our attention to areas where NARA's mission, facilities, and operations may be adversely affected by climate change. NARA does not have the resources to conduct a detailed quantitative risk assessment of the vulnerability of its mission to climate change at each location. However, our Climate Change Adaptation Plan uses expert judgment, combined with best information available from peer-reviewed scientific literature on the impacts of climate change, to identify potential vulnerabilities. The next section summarizes the Agency's currently known mission, facility, and operational vulnerabilities. With improvements to our scientific understanding, other vulnerabilities may join the list. This summary is organized by NARA's strategic goals (listed below),

NARA's Known Vulnerabilities and Climate Related Risks

To be adequately prepared for climate change, NARA must plan not only for gradual changes (increases in temperature and sea level; moisture variability, etc.), but also catastrophic events. Assessing NARA's climate change vulnerabilities and ultimate risk is a dynamic process. The extent that vulnerabilities have been identified and understood varies across locations, due to limited data. The data is limited not only because it is not current for many localities, but it also fails to plan for the future, as the data relies on past events. Climate change science is expected to improve over time, providing ever greater weight and clarity of evidence to evaluate consequences of existing and expected impacts. To furthermore complicate local planning efforts, on the global scale, climate model simulations show consistent projections of future conditions under a range of emissions scenarios, but there is insufficient granularity to plan locally with reasonable certainty. Models project large and historically unprecedented future warming in every region of the U.S. For precipitation, models show decreases in precipitation in the subtropics and increases in precipitation at higher latitudes. The contiguous U.S. straddles the transition zone between drier conditions in the sub-tropics (south) and wetter conditions at

higher latitudes (north). Because the location of this zone varies among models, projected changes in precipitation in central areas of the U.S. range from small increases to small decreases. Clear direction of precipitation change only occurs north of the contiguous U.S. where increases are projected and in the far Southwest where significant decreases are projected.

NARA will continue to improve its understanding of known vulnerabilities and assess risk as information becomes available. NARA can then adjust activities to anticipated changing climate conditions. NARA's mission activities and the potential climate change impacts to those activities are:

1. Preserve and process records to ensure access by the public as soon as legally possible.

Potential Impacts: Increased need for cooling and humidity control to preserve documents and other archival holdings; increased risk from storm surges and long term sea level rise; and vulnerability to intense mainland wind storms and flooding; while maintaining a healthy environment for employees and visitors.

2. Address challenges of electronic records in Government to ensure success in fulfilling NARA's mission in the digital era.

Potential Impacts: Increased need for cooling and humidity control to preserve documents and other archival holdings; increased risk from storm surges and long term sea level rise; and vulnerability to intense mainland wind storms and flooding.

3. Provide prompt, easy, and secure access to our holdings anywhere, anytime.

Potential Impacts: Increased need for cooling and humidity control to preserve documents and other archival holdings; increased risk from storm surges and long term sea level rise; and vulnerability to intense mainland wind storms and flooding; while maintaining a healthy environment for employees and visitors.

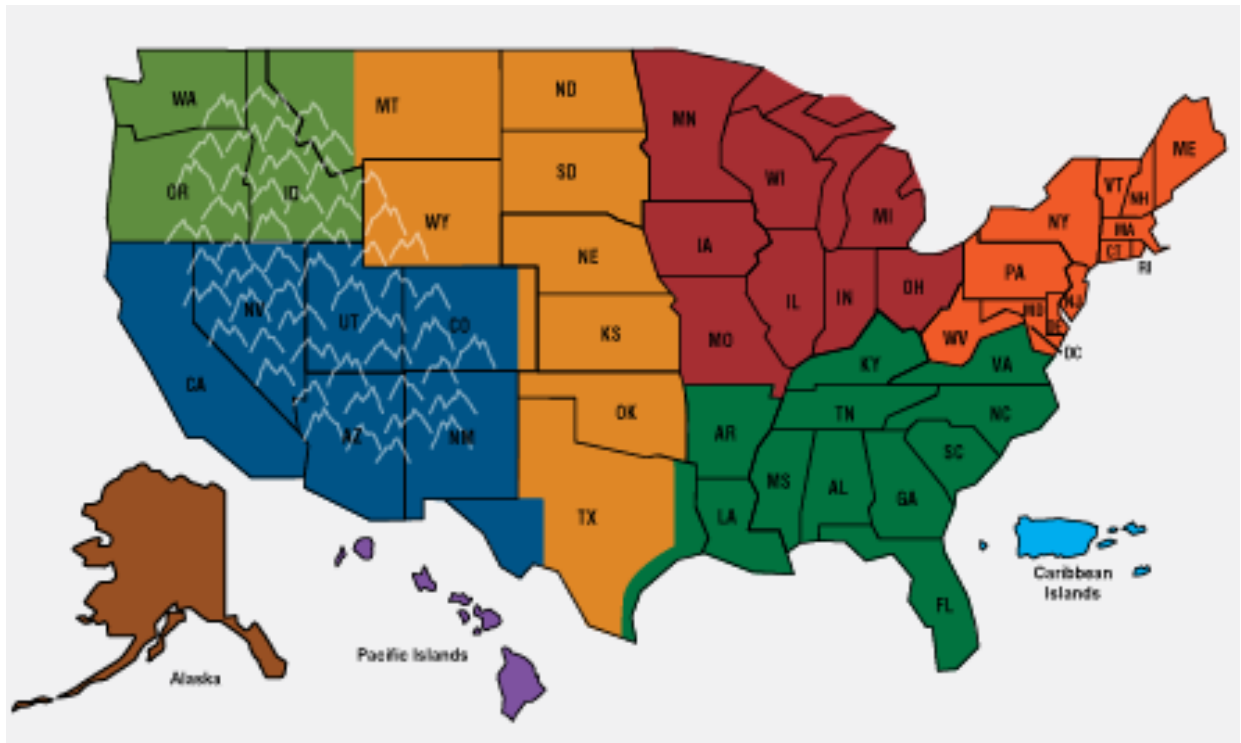
NARA's assessment of potential impacts is qualitative at this point in time, and has been done primarily at the national or geophysical regional level. The assessment identifies vulnerabilities to entire programs within NARA to help focus the Agency's climate adaptation efforts.

However, because there are widely differing geographic regional areas, severity and importance of known vulnerabilities will vary across and within regions. NARA management is concerned about the lack of local data, but will attempt to capture regional differences and identify vulnerabilities of greatest importance. Included, will be identifying the most vulnerable areas within these programs. Because regional data is the basic level of information available to date, NARA is focusing attention at the geophysical climatic regions established by the U.S. Global Change Research Program. However, as the granularity of the information improves, localized data will be used to make risk assessments, reduce our vulnerabilities, and make more informed decisions on climate adaptation for each facility. Due to the lack of granularity of information on the local level at most locations, NARA is currently basing risk on data from the following geophysical regions (see figure below):

- **Northeast-** Heat waves, heavy downpours, and sea level rise pose growing challenges to life in the Northeast. Infrastructure, agriculture, fisheries, and ecosystems will be increasingly compromised. Infrastructure will be increasingly compromised by climate-related hazards, including: sea level rise, coastal flooding, and intense precipitation events.
- **Southeast-** Sea level rise poses widespread, continuing threats to the region's economy and environment. Extreme heat will affect health, energy, agriculture, and more. Decreased water availability will have economic and environmental impacts.
- **Midwest-** Extreme heat, heavy downpours, and flooding will affect infrastructure, health, agriculture, forestry, transportation, air and water quality, and exacerbate risks to the Great Lakes.
- **Great Plains-** Rising temperatures lead to increased demand for water and energy. In parts of the region, this will constrain development, stress natural resources, and increase competition for water. Agricultural practices will need to cope with changing conditions.
- **Southwest-** Increased heat, drought, and insect outbreaks linked to climate change, have increased wildfires. Declining water supplies, reduced agricultural yields, health impacts in cities due to heat, and flooding and erosion in coastal areas are additional concerns.
- **Northwest-** Changes in the timing of streamflow reduce water supplies for competing demands. Sea level rise, erosion, inundation, risks to infrastructure, and increasing ocean

acidity post major threats. Increasing wildfire, insect outbreaks, and tree diseases are causing widespread tree die-off.

- **Coasts-** Coastal lifelines, such as water and energy infrastructure, and nationally important assets, such as ports, tourism, and fishing sites, are increasingly vulnerable to sea level rise, storm surge, erosion, flooding, and related hazards.



NARA is aware that more localized data is needed to better determine risk and prepare for climate change at each facility. For some facilities, there is no margin for error as failure to protect priceless/irreplaceable documents and artifacts would be mission failure. In the absence of localized data, planning must concentrate on worse case scenarios. This leaves NARA in a situation where we may be forced to over-protect/overbuild, thus potentially waste taxpayer dollars, to protect NARA assets.

NARA must prepare for gradual changes in climate and sudden or catastrophic climate change events. In the event of a catastrophic weather event, NARA's people, buildings and operations may be affected. Although the agency must protect the holdings, and the safe and continued operation of its buildings, other critical assets, and integrity of its procurement systems;

foremost, NARA must also ensure safety and security of its personnel, contractors, and visitors. One example of a catastrophic weather event occurred in Washington DC in June 2006, affecting operations at the main Archives building. The flooding that occurred served as a reminder of the need for high standards for safety, durability, sustainability, and climate change adaptation.

Climate models indicate increased frequency and severity of extreme weather events that may affect Agency facilities, personnel safety, physical security, continuing operations, and emergency communications. Extreme weather events are expected to become more commonplace as the climate changes, increasing occurrence of flooding, heat waves, lightning and high winds. An increase in these events would increase the risk to NARA's personnel in the field and facilities. NARA is also assessing these vulnerabilities and identified areas of potential impact:

- Severe weather and flooding could potentially damage NARA facilities and holdings.
- Floods, lightning or other weather-related events could cause outages in NARA's IT operations and/or phones, causing us to lose communication, and access to information. Any event that disrupts power, phone or internet capability could hamper us from fulfilling our mission goals.
- Extreme weather events, including severe winds and lightning could cause damage to NARA's building inventory and interior assets.
- Seasonal temperature changes and changing weather patterns can affect air quality and general comfort. Extreme heat, poor air quality or other weather conditions exacerbated by climate change may increase health risks of employees and contractors engaged in outdoor activities.
- Severe winds, lightning and other extreme weather events could cause power outages that disrupt NARA's air quality in storage and office space, security systems, outdoor lighting and emergency communication systems. Some systems are not linked to an uninterruptible power supply or backup generators. Outdoor lighting and security cameras are also vulnerable to direct impacts from high winds and other severe weather.
- An increase in the number of extreme weather events could affect planning and management of emergency operations.
- Changing water supplies may compromise the quality of water used at facilities. Water shortages and quality issues could have significant impacts on the Agency's ability to manage its facilities and conduct important research, particularly in drought-prone regions.

NARA is committed to collaborate with other agencies, and private and public organizations on climate change adaptation planning. Some examples are listed below.

Past and present agency NGO collaboration.

- a. GSA- for Records Centers
- b. Library of Congress (LoC)
- c. NPS- Presidential Libraries on Park Service property
- d. Universities – where Presidential Libraries are co-located
- e. EPA- Climate Change Adaptation Planning- Community of Practice groups
- f. NOAA- for regional data, and sea level rise information
- g. NASA- some local, but mostly regional data
- h. AOCC- collaboration and training on climate change
- i. USGBC- LEED preparation and certification

Agencies potentially facing similar impacts and climate change management challenges.

- a. GSA
- b. NPS
- c. GPO
- d. LoC,
- e. Smithsonian, etc.

Due to the irreplaceable nature of NARA's holdings, much of NARA's planning efforts are focused within our own agency; however, NARA's staff participates in interagency collaborative efforts. In spite of NARA's small size, staff is engaged in interagency efforts to anticipate and address effects of climate change, and thus help all organizations move forward to meet the demands and challenges of climate change.

How will NARA address climate change and preserve the goals of its mission? First, we must identify regional climate change effects and identify critical locations susceptible to climate change using a diverse (e.g. Engineering, Finance, Design) planning team, and accessing the most up to date and reliable geographically-relevant climate change data. Second, develop risk

management approaches and methodologies to best deal with climate change model predictions, including partnering with other agencies (e.g. NASA, NOAA, DOE, DOI, GSA, NPS, LoC, GPO, and universities with co-located Presidential Libraries) where appropriate, on near term and long term actions and investments. NARA must create flexible design standards accounting for changing climatic conditions at unique locations, and an aggressive education and outreach program. Specifically, NARA must plan for sea level rise and storm surge protection, shifting precipitation patterns, flood events, wind and other extreme weather events, and other natural disasters at each location. NARA will incorporate climate change requirements into all of its policies, and emergency planning. Finally, the agency must also consider secondary effects caused by climate change, and be prepared to deal with those effects (including loss of phone and internet). NARA must continue to protect: its holdings according to precise temperature and humidity levels as described in NARA Directive 1571, and buildings where archived materials are stored, and maintain a healthy environment for its employees, contractors, and visitors. Some examples of site specific adaptive activities include: seeking enhanced/expanded data collection; improving flood and shoreline protection; building sustainable new structures; improving old structures to make them more energy and water efficient, and resistant/sustainable to climate change; and making plans to relocate at-risk infrastructure when other adaptation strategies are not feasible.

NARA is adopting a common set of principles (see below) to guide all of its efforts to integrate climate adaptation into its programs, policies and rules. The principles affirm NARA's approach of integrating climate adaptation into existing programs and activities to ensure their effectiveness as the climate changes. They uphold NARA's core values, and using the best available science, to protect people and locations most vulnerable to climate change, and using sensible approaches to develop and implement adaptation strategies. NARA is only one partner in a broader effort that must include multiple levels of government and private partners. The principles call for ongoing evaluation of effectiveness of climate change adaptation approaches, recognizing the Agency will continue to learn how to adapt effectively over time.

Climate Change Adaptation Guiding Principles

- Adopt integrated approaches into core policies, planning, practices and programs.
- Prioritize most vulnerable areas to climate impacts.

- Use best-available science, grounded in the best-available scientific understanding of climate change risk, impacts and vulnerabilities.
- Build strong partnerships across multiple sectors building on existing efforts and knowledge of a wide range of stakeholders.
- Apply risk-management methods and tools that identify, assess and prioritize options to reduce vulnerability to potential environmental, social and economic implications of climate change.
- Maximize mutual benefits using strategies that complement or directly support other related climate or environmental initiatives. These initiatives should improve and support: disaster preparedness, sustainable resource management, and development of cost-effective technologies to reduce greenhouse gas emissions.
- Continuously evaluate performance using measureable goals and performance metrics to assess whether adaptive actions are achieving desired outcomes.

Challenges and Training Needs:

NARA is committed to personnel safety, integrity of our buildings and holdings, and the efficiency of operations. The increasing frequency and severity of extreme weather events poses risks to meeting these objectives. Climate change could disrupt Agency' programs, compromise safety of its staff, or affect integrity of its physical infrastructure. Adaptation planning to protect NARA's workforce, operations and underlying infrastructure is crucial to success of the Climate Adaption Plan.

NARA will develop and implement measures to protect its workforce and increase the resilience of its facilities and operations to climate change. For example, where possible, NARA will enhance resilience of existing facilities in coastal areas to protect them from severe weather, flood damage, and sea level rise. The Agency will also work with other government agencies, particularly the GSA, to account for climate change in design and construction of new facilities, or when new buildings are leased.

The fact that the climate will continue to change in many ways, presents challenges for decision makers. Many standard practices may no longer be effective unless they account for climate

change. For example, standard methods used for estimating the probability and expected frequency of floods for flood plain mapping, designing infrastructure systems, and estimating runoff into rivers and streams are based on assumptions of climate stability. NARA and its partners must alter practices and decisions to account for a continuously changing climate. The development of decision-support tools play a central role in NARA's overall efforts to adapt to climate change. Following the recommendations of the National Research Council, NARA is committed to developing decision-support tools to improve outcomes sensitive to changes in climate. NARA will provide training to certain individuals through the Association of Climate Change Officers (ACCO), to help lead the Agency through some of the more intricate climate change challenges. These tools will empower staff to consider climate, and changes in social and economic conditions influenced by climate change. They will enable staff to integrate climate adaptation planning into their work and decision-making processes.

Climate change poses serious threats to the economic well-being, public health, natural resources, and environment of the United States. Adverse impacts of climate change include: exacerbating air quality degradation, reduced quality and supply of potable water, sea level rise affecting coastal businesses and residences, damage to marine and terrestrial ecosystems, and increased incidence of human health-related problems. Although climate change cycles occur naturally, NARA recognizes that concerted actions are necessary to fully address the rate of climate change due to human activity, and that actions taken by NARA to reduce emissions of GHGs will have local and global effects on future climate. NARA also realizes that leading by example may help encourage others to act in a similar manner to reduce future anthropogenic effects on climate.

An organization with adaptive capacity has the ability to craft and implement ways to achieve its goals as circumstances change. NARA needs its personnel and partners to have significant adaptive capacity in the midst of climate change. NARA will help build adaptive capacity through ongoing participation and collaboration in education and training. One goal is to increase awareness about the importance of climate change adaptation, and to encourage all staff and partners to consider changing climate in the normal course of business. A second goal of

NARA's training will be to expose staff to specific approaches and tools for integrating climate adaptation into decision-making processes.

Leadership:

By exercising leadership and implementing energy conservation measures, NARA will continue efforts to reduce emissions of greenhouse gases. Investing in the development of innovative and pioneering technologies will assist NARA in achieving and surpassing Federal Agency limits on emissions of greenhouse gases established by E.O. 13514.

NARA History on Climate Change Adaptation:

Previously, NARA actions have focused primarily on mitigation; i.e. the reduction of greenhouse gases emitted to the atmosphere by NARA's facilities, normal operations (also including acquisition and disposal activities), business travel, and employee commuting. Long term, reducing greenhouse gas emissions is important; however, even with significant emissions reductions climate change impacts are inevitable, and so climate change adaptation must be considered and addressed in future planning efforts.

Future Planning:

The future of NARA Climate Change Planning will rely on identifying and developing appropriate strategies for mitigation, climate change adaptation, sustainability, and resiliency at each location. NARA to date, has performed well on mitigation via improved energy efficiency, operational, telework promotion, employee commuting on mass transit, and business travel, solid waste, and water programs; all leading to reduced GHG emissions. NARA will continue to improve these areas by devoting money via ESPCs and Agency dollars to further improve efficiency and promote renewable energy sources. This next phase to address climate change is to initiating responses to specific regional vulnerabilities through adaptation. Adaptation strategies are largely based on preparedness for and/or protection from risks that either occur over time, or are extreme (catastrophic) events. Adaptation planning stems from a solid understanding of a region's specific risks, and taking effective and timely action to alleviate the full range of climate change consequences. Risks are addressed by reducing vulnerability or exposure, thus promoting resiliency. Reducing risk is accomplished by understanding regional

changes utilizing available data, and increasing infrastructure resilience, transferring risk through appropriate future planning (e.g. building in low risk areas), partially negating risk through technological change or retreat, or via behavioral changes and revised protocols. NARA recognizes that planning now for climate change may prevent spending many times more money at a later date, responding to an avoidable catastrophe. We also recognize that issues must be prioritized. Not all issues can, or should be, addressed at once, so it is important that risks are prioritized to maximize NARA's resources to ensure timely and effective response to climate change. Although NARA's mission goals stress protection of holdings and continued availability of those holdings to the public, another important consideration is maintaining human health and safety, while maintaining NARA's basic services. Risks presenting the most serious consequences (threats to human health/safety, and maintaining viability of holdings and buildings during serious and short term threats) are generally projected to occur first, and so are given highest priority; however, timely response to serious long term risks is also important, especially if response requires substantial time or resources to implement.

NARA continues to increase its understanding of the implications climate change has on its business practices, and is building a working knowledge to ensure future decisions consider climate change impacts and do not create further vulnerabilities or liabilities. This plan incorporates NARA's Directive 1571 to protect holdings against short and long term risk. Since this Plan represents formal initiation of NARA's attempts to develop its climate adaptation response, some initiatives may be initially exploratory in nature and aim to identify appropriate changes or actions to respond to the impacts of concern not addressed in 1571. To alleviate risk to human health, emergency management and safety plans are being reviewed and revised. Reviewing current NARA protocols/practices and programs associated with risk is an early step to identify immediate adjustments to alleviate or reduce that risk. Where adjustments to current protocols/practices will not sufficiently address risk, more substantial actions will be developed and implemented in NARA programs. NARA will coordinate with other government agencies, consult with local businesses, academic institutions, environmental organizations, and other stakeholders to fully implement and refine NARA's Climate Change Adaptation Plan. This plan also addresses and strengthens NARA's attempts to meet OMB Scorecard, EO 13423, EO

13514, EO 13653, and LEED requirements (at appropriate sites). Detailed information on NARA's areas of focus for climate change adaptation are described below.

NARA Climate Change Adaptation Plan areas of focus:

Reduce Green House Gas Production

Building systems account for approximately 70 percent of NARA's GHG emissions and are a key area for improving energy use efficiency. Since 2008, NARA has had spectacular success with improving agency energy efficiency. Improving building systems efficiency provides opportunities for energy savings and greenhouse gas reductions, thus contributing to global mitigation efforts. These improvements have been, and will continue to be a major focus at the following NARA-owned buildings: Archives I, Archives II, Southeast Regional Archives and 13 Presidential Libraries and Museums. Remaining NARA locations (Federal Record Centers and other Regional and Affiliated Archives) are leased via GSA or private leases, and so are not under direct control of NARA. Although those facilities are not NARA controlled, the agency will encourage leasing entities to improve energy efficiency and promote GHG reductions at these locations, to further contribute to GHG mitigation.

NARA recognizes that even small changes in energy use practices can add up to big GHG emissions reductions. It is as easy as turning off the lights when not needed, adjusting thermostats at night in unoccupied areas, and reducing unnecessary water use in restrooms and break rooms. NARA will continue to concentrate on low cost and no cost solutions first, when planning for projects. A combination of higher cost, and longer payback period projects are also included to provide more robust savings and longer term solutions to energy and GHG reductions. NARA is using ESPC s to help improve the energy efficiency at all of the agency-owned-locations.

NARA continues to use mitigation strategies to promote energy efficiency in existing buildings. Retrofitting buildings is an excellent strategy for improving energy efficiency in older buildings. Deep energy retrofit measures such as: installing energy efficient equipment, building envelop sealing, moisture management, controlled ventilation, insulation, and solar control can result in

dramatic energy savings alongside promoting optimal building performance. NARA has committed to a 30 percent Agency-wide reduction in it's energy use.

National Archives Total Agency Utilities Cost and Energy/GHG Savings								
		Executive Order 13423			Executive Order 13514			
FY	Total Utilities Costs (to include Water)	Btu/GSF	Btu/GSF Reduction vs FY2003	FY Goal Target Reduction	Site Delivery Billion Btu	Scopes 1, 2 & 3 GHG Emission (Ton)	GHG Reduction vs FY2008	GHG Saving vs FY2008 (Ton)
2003	\$7,798,163.48	181,189	Baseline					
2006	\$13,629,555.42	156,988	-13.4%	-3.0%	637.7	82,033.0		
2007	\$14,101,762.75	150,896	-16.7%	-6.0%	612.9	80,347.0		
2008	\$15,043,427.79	130,993	-27.7%	-9.0%	575.4	76,295.4	Baseline	Baseline
2009	\$14,496,452.58	127,765	-29.5%	-12.0%	561.6	75,468.6	-1.08%	826.8
2010	\$13,825,049.86	125,033	-31.0%	-15.0%	552.2	75,926.8	-0.48%	368.6
2011	\$12,837,795.15	126,981	-29.9%	-18.0%	560.2	70,736.3	-7.86%	5,559.1

NARA has focused on lighting as another way to reduce energy use and GHG emissions. As part of the retrofitting process, NARA is expanding incandescent light replacement. NARA uses high efficiency fluorescent or LED lights wherever appropriate. High use and fixtures that are difficult to re-lamp are identified as greatest opportunities to save energy and labor (installation) costs. In addition, timers and occupancy sensors are installed as part of the retrofitting scheme. Night lighting is reduced to minimize energy use and reduce night sky light pollution. The lighting systems at Archives I & II were retrofitted under two ESPC projects. Another ESPC project is underway at Archives II to further improve lighting, replace asphaltic roof with white membranous roofing, and add additional solar arrays. NARA has awarded another ESPC project for covering 14 additional sites. Those sites include the Southeast Regional Archives and each Presidential Library or Museum.

NARA has also made strides to reduce water consumption, and is committed to improve water use efficiency in buildings as part of retrofits and in any new construction. Indoor water strategies include: installing ultra low flow restrictors/aerators on faucets, and replacing urinals

and water closets with low flush volume devices. Mechanical water strategies include water reuse for cooling towers, and capturing condensate water and rainwater for irrigation. To date, NARA water use has decreased over 19 % agency wide. Projects at specific sites have resulted in extraordinary water savings. Recovered condensate water and rainwater projects allow for reusing otherwise wasted water for irrigation. For example, rainwater and condensate water account for all water used to irrigate landscape and turf areas at AII.

National Archives Total Agency Water Savings			
FY	Gallons/GSF	Gal/GSF Reduction vs FY2007	FY Goal Target Reduction
2007	26.6	Baseline	
2008	25.4	-4.5%	-2.0%
2009	22.7	-14.7%	-4.0%
2010	21.6	-18.8%	-6.0%
2011	21.5	-19.2%	-8.0%

NARA and LEED:

NARA is looking beyond just energy conservation strategies. NARA is aligning its energy conservation, sustainability, and climate change efforts at all NARA-owned buildings with LEED strategies, and now requires new Presidential Libraries to be designed and built to LEED Platinum Level. Because LEED strategies align closely with OMB requirements, NARA is adopting LEED not only for new construction, but also any new construction projects at existing facilities must be built to LEED standards for any extensive renovation of NARA-owned property. NARA has updated the Presidential Library Design Standards and the Building Condition Reporting, performed by a third party, to include LEED language at all of it’s owned locations. In addition, the newly-leased St. Louis Records Center is a LEED building.

As part of LEED and OMB requirements, NARA promotes and installs renewable energy at each site, where feasible, and uses renewable energy by purchasing renewable energy credits from energy providers, thus further reducing GHG emissions. NARA is using many strategies to help address climate change and meet Federal mandates, NARA not only requires greater efficiency from existing energy sources, but is purchasing energy from green power sources. NARA

receives power from regional e-grids, including nuclear and renewable-generation plants. Since traditional power sources are a significant source of CO₂ emissions, especially those that use coal, NARA is purchasing at least 7-1/2% of its energy from alternative, renewable energy credits of wind power through the GSA area-wide contract.

Renewable Energy:

NARA procures renewable energy through its regional energy providers, and via onsite energy generation. NARA is utilizing and increasing the amount of self-generated energy. The existing Photovoltaic solar panels at Clinton Library produced 60,225 KWH in FY2011. The existing 4,200 SF of solar panels at the Eisenhower Library generates an average of 15,000 Btu/day for the facility hot water system. The electricity and chilled water consumed at the Reagan Library is generated by an on-site natural gas cogeneration system and absorption chillers. Photovoltaic Solar panels at Archives II produced 125,508 KWH in FY2011. The 150 KW co-generation system at Archives I was completed November 19, 2010. A 225 KW co-generation system at Archives II was also installed. The combined strategy of producing our own power and purchasing renewable energy helps NARA reduce electricity use from the grid, and simultaneously reduced GHG emissions from petroleum-based electricity generation.

Process Improvement:

LEED requires facilities to continually improve processes and procedures to promote better environmental outcomes. This is consistent with sustainability requirements for the OMB Scorecard. NARA adheres to the FAR clauses for green acquisition and includes language in its purchases (e.g. bio-based, Energy Star, EPEAT, EPP, FEMP, Water Sense, etc.). As a result, NARA anticipates continued improvement in processes associated with acquiring, use, storage, and disposal of chemicals, equipment, furniture, construction materials, office supplies, and any other products or services.

Landscapes and Hardscapes:

NARA is also making strides to reduce effects on the environment by minimizing heat island effects from its roofs and hardscapes. Many energy and heat island effect improvements can be

made at most sites. NARA is promoting the use of rooftop gardens, where applicable, and planting trees to shade existing hardscapes. Roof projects in warmer climates incorporate high albedo materials. New paving project specifications also incorporate high albedo materials when feasible, thus reducing overall community heat island effects. Reducing the amount of heat absorbed and reradiated to the atmosphere helps improve outdoor conditions near a building, but also helps reduce HVAC system loading requirements.

Fleet, Business Travel and Employee Commuting:

NARA is moving forward with fleet and commuting goals. NARA is utilizing many LEED strategies to help meet fleet, business travel and employee commuting goals. NARA is reducing fleet size and right sizing current vehicles to their appropriate tasks, and using a single vehicle to provide for multiple uses, where feasible. NARA has equipped vehicles with GPS to monitor fuel use, mpg, frequency of use, and driving patterns, including idle times, average speed, etc. Utilizing this information helps NARA determine present and future needs when time for a new vehicle lease is scheduled, and user habits, so recommendations for improvement can be easily conveyed to the users.

Each business day, NARA employees commute to and from work, and travel for business purposes. Approximately 20 percent of NARA's contributions to greenhouse gas emissions are produced by fleet cars, trucks, and buses, and travel on commercial planes and trains. To reduce GHG emissions, NARA must incorporate and promote using public transit, bicycling, walking, ride sharing, and energy-efficient vehicles in its plans. NARA business dictates that employees have many places to go, and so we need a variety of convenient, energy-efficient ways to get there.

An important first step was to do an employee commuting survey in an effort to measure use of single occupant vehicles vs. carpools, biking, walking and mass transit. NARA just completed an agency-wide survey of employee commuting and is planning strategies to further reduce its carbon footprint by promoting alternatives to single passenger vehicle commuting.

NARA encourages employees to use mass transit when feasible, to help promote mass transit improvements and to boost transit system ridership. A bus full of occupants takes about forty

single occupancy vehicles off the road for a given trip. Using mass transit clearly reduces GHG emissions vs. single occupant vehicle use, and as added benefits reduces wear and tear on personal vehicles, and lessens congestion on roadways. Over 20% of NARA employees currently use some sort of mass transit, and NARA is utilizing the DOT mass transit subsidy program to help encourage employees to use local mass transit systems where they are available. NARA encourages employees to use the program as it provides cost savings to employees, reduces GHG emissions and encourages mass transit ridership. Additionally, much of the cost incurred over the subsidy amount may be claimed as a pretax benefit to the employee. NARA will continue to provide incentives for mass transit use by employees in the future, provided they are available.

Since NARA has adopted LEED strategies for its sites, transit oriented development is part of site selection for any new location. Transit-oriented development encourages new construction to focus on neighborhoods built around public transit, and basic services within walking or bicycling distances, thus encouraging residences to be built in the area. This strategy reduces commute time and costs for employees that choose to locate in the area, building a more unified community. For locations that are outside the service area of mass transit, NARA promotes the use of car sharing, carpooling and vanpooling. NARA has established a carpool ride share board for some locations.

NARA continues to improve its fleet efficiency in accordance with E O 13514. NARA is improving fleet efficiency through consolidation and fleet reduction, acquisition of right-sized and appropriate vehicles for tasks performed, and purchase or lease of hybrid, flex fuel, and electric vehicles. In spite of ever increasing transportation demands, NARA plans to reduce its fleet size by 10% by FY2015. Besides reducing the size of the fleet through resizing/right sizing, NARA promotes continued increased Federal fuel efficiency standards. The agency supports the standards by using cars with smaller, more fuel efficient engines and transmissions, and increased use of hybrid and electric vehicles that will continue to improve NARA's fleet fuel efficiency, and America's energy security. In addition, NARA is utilizing cleaner burning, alternate fuels when feasible. All new gasoline powered vehicles acquired by the agency must be flex fuel vehicles, and policy requires vehicles fill up with E85, if available, within five miles

of the location. The NARA fleet manager regularly updates vehicle users of locally available E85 filling stations. NARA diesel powered vehicles are also using cleaner burning biodiesel. NARA supports the increased supply and use of sustainable, alternative fuels, and helps promote electric vehicles, and hybrids. Agency leaders are using electric and hybrid vehicles as their preferred choice for business transportation.

Solid Waste and Refrigerants:

Although buildings, employee commuting and business travel account for almost 90% of GHGs emissions produced directly or indirectly, NARA recognizes that most of the remaining GHGs are represented by solid waste and refrigerant use. NARA has reduced solid waste sent to landfills by over 40%, and has committed to reduce waste sent to landfills by greater than 50%. Although reducing, reusing and recycling helps achieve the waste reduction goal, NARA is committed to go farther. It is essential that both individuals and businesses join in the effort, and there are many opportunities to do so. One such project is an onsite compost system. Using this system, the payoff may yield an 80% reduction in waste trucked to landfills by the year 2015 (ultimately yield a 90 percent reduction of NARA's solid waste sent to landfills by 2020), produce a useful product to be used on site (compost for gardening), and reduce GHG emissions. Additionally, NARA has established a community garden plot, where some of the compost is used, and serves as a model of sustainability, a hands on organic garden, a way to close the loop on waste, and a source of employee pride.

In keeping with LEED requirements, NARA is shifting to devices that can be converted to alternative refrigerants, and when possible phasing out systems that contain CFCs and HCFCs. NARA requires use of non CFC/HCFC refrigerants in all new air conditioners and appliances.

Storm Water Runoff:

NARA is currently detaining at least 15% of storm water runoff at many of its sites, and installing green infrastructure to slow runoff, and to reduce pollutant loading onsite before storm water is discharged to streams. Some storm water is captured and reused on site for irrigation at some locations. This strategy will be implemented at new locations, and when feasible, at existing locations during renovation. NARA recognizes that climate change may have changed

storm water runoff requirements due to a change in frequency and intensity of storms, ocean rise and local storm surge capacity changes, and relative elevation change due to construction in other neighboring areas in the same watershed. Periodic review of each location is important to maintain a viable strategy for climate change and future mitigation or adaptation.

Advancing Climate Adaptation and Mitigation Strategies

Climate Change data shows the earth responds slowly to changes in atmospheric gases. For that reason experts predict full effects of climate change are not yet realized. Over the next few decades, NARA expects to face the combined consequences of heat-trapping gas emissions from the present and decades past. Aggressive actions by the world community will likely reduce greenhouse gas emissions in the future. NARA must do its part to reduce potential future effects of climate change by reducing emissions and incorporate decision-making in policies and strategies.

Incorporating effects of climate change in decision-making requires consideration of scientific insights and cultural and social considerations. The importance of scientific information and societal considerations suggests the need for the public, technical experts, and decision-makers to engage in mutual shared learning and shared production of relevant knowledge. A major challenge in these engagements is communicating scientific information about the risks and uncertainties of potential changes in climate. The Agency is collaborating with other organizations, and must take action by adapting to change that is already happening, while preparing to meet the challenges and opportunities in the future. The Agency's actions detailed in this plan will help NARA reduce GHG emissions, and prepare the Agency for future climate change challenges. NARA will continue to advance its GHG reduction strategies and better prepare for climate change as more data-especially local data, becomes available. NARA pledges to share its experiences with other agencies, and will continue to collaborate with other government and nongovernment groups to reduce the effects of anthropogenic-related climate change.

Additional Adaptation Strategies and Future Challenges

1. Manage Heat

NARA will update heat response planning, focusing on Agency holdings and human health, observe and complete research into local urban heat island effects, and ways to reduce facility contributions to the local heat island effect.

2. Pursue Innovative Cooling

NARA continues to seek out innovative and low cost/ no cost ideas for cooling buildings, and make green landscape and energy efficiency improvements.

3. Protect Indoor and Outdoor Air Quality

NARA goes to great lengths to reduce ozone-precursors, and other indoor air pollutants to protect holdings and human health.

4. Manage Storm Water

NARA is collaborating with Water Districts on Watershed Plans factoring climate changes and to use vacant land to manage storm water.

5. Preserve Plants and Trees

NARA plans to plant species that thrive in altered climates. NARA attempts to create landscapes that accommodate plants that can tolerate the altered climate, and share our lessons learned with other agencies and the public.

6. Engage the Public and Other Organizations

Besides sharing climate related information with other organizations, and the general public, NARA plans to investigate innovative ways to adapt to climate change. Furthermore, NARA will help its employees understand how to take steps to reduce flooding, improve energy and water use efficiency in their homes, and even manage heat waves, by installing energy efficient lighting and heating and cooling, rain barrels, faucet aerators and low flow fixtures, and back-up power for sump pumps and planting shade trees at key locations, etc.

7. Future Plans and Metrics for Evaluating Performance

NARA's future plans include: Using a combination of LEED principles and project progress, information from Building Condition Reports, and the OMB Scorecard to guide NARA implementation efforts to assess how the plan is progressing, and an avenue to recommend revisions. Furthermore, NARA's Sustainability Plan and Climate Change Adaptation Plan are updated each year to demonstrate our commitment to continual improvement. One such demonstration is a newly-awarded award for an agency-wide contract to video-teleconference across all of our facilities, thus saving additional business travel and associated GHG emissions. The efforts were overseen by the Senior Sustainability Officer (SSO) and implemented by staff in the SSO's Office.

Without measurements, progress evaluation is difficult to determine. Evaluation offers a systematic way to learn from past experience. NARA values the importance of evaluating activities and acting on lessons learned to improve performance. Through systematic evaluation, the Agency identifies where activities have the greatest impact to protect our priorities; provide the roadmap needed to replicate successes; and identify areas needing improvement.

NARA will evaluate its climate change adaptation actions on an ongoing basis. Initially, our success will be measured by progress toward our desired long-term outcome of mainstreaming climate change adaptation into the Agency's programs, policies and operations. Based on lessons learned about the most effective climate change strategies, NARA will make adjustments as necessary, to the way adaptation is integrated into its activities, and create new goals and desired outcomes to climate change adaptation planning.

NARA is not organized like much larger agencies, i.e. into National Program Offices. Instead, the agency is organized by functional groups (National Archives, Presidential Libraries and Museums, Affiliated Archives, and Records Centers and Research) that have no correlation with geographical regions. Therefore, for the purposes of Climate Change Adaptation Reporting, NARA is organizing its facilities by how they fall into the physio-geographic regions identified by the U.S. Global Change Research Program, titled "Global Climate Change Impacts in the United States". Those seven U.S. regions identified in the report are: Northeast, Southeast,

Midwest, Great Plains, Southwest, Northwest, and Coasts As more detailed, local climate data and other local information is made available to NARA, the specificity to measure climate change and subsequent adaptation at the facility level can become a reality. Until that point, NARA will restrict planning to the regional geographic level. However, NARA will likely always have only one comprehensive Climate Adaptation Plan for the Agency. Regardless, the future Climate Change Plan will contain the following areas:

1. Vulnerability assessments: an initial assessment of the implications of climate change for the organization's priorities and objectives. This assessment will build on understanding and addressing the ways climate change may affect respective missions at each facility.

2. Priority actions for climate adaptation: describing the organization-specific priorities related to climate change adaptation. At the core of each Implementation Plan will be a description of the activities that the Agency will pursue over time to integrate climate change adaptation into its programs, policies and operations; and how these activities address both organization-specific priorities and the cross-Agency priorities. The Plan will describe how facilities will work together on actions most effectively accomplished by more than one facility.

For each action, the Plan will identify the organization's key partners at the international, federal, state, local, public and private sector levels.

Activities will include short- and long-term actions. Short-term activities may include actions that are readily achievable, e.g. training needed to begin building adaptive capacity. Short-term activities may also focus on areas where the organization has relative certainty about climate impacts, and therefore feels that action cannot or should not be delayed. The more immediate actions will enable the organization to learn what works. Armed with lessons learned, the organization can move forward with insights and information as it begins to address additional issues. Long-term activities will focus on maintaining healthy, sustainable, resilient buildings, and protecting holdings, personnel, contractors and visitors.

3. Agency-wide Strategic Measures: to consider activities that address existing Agency-wide Strategic Measures to the extent they are applicable to the organization.

4. Training and outreach: All facilities will benefit from Agency-wide training activities that they will work together to develop and implement Climate Change Adaptation. The Plan will describe ways the organization will use the Agency-wide training resources to educate its staff, and how the organization will, over time, integrate climate adaptation into *existing* specific training programs.

5. Evaluation and cross-organization pilot projects: to include a process for measuring and evaluating effectiveness over time. Facilities are encouraged to partner with each other to conduct pilot projects that test climate adaptation approaches that are broadly applicable, and provide reports on these joint efforts. The ultimate goal is to learn what approaches work and why. The Plan will periodically be adjusted to improve the organization's efforts to integrate climate adaptation into its activities.

In Summary, NARA recognizes that the integration of climate adaptation planning into its programs, policies, rules, and operations will occur over time. This change will happen in stages and measures should reflect this evolution. The earliest changes in many programs will simply be changes in knowledge and awareness (*e.g.*, increase in the awareness of NARA staff). Building on this knowledge, staff can begin to change behaviors (*e.g.*, increased use of decision support tools to integrate adaptation planning into programs and policies). Over time, there will be evidence of more projects implemented as a result of increased attention to climate-related issues. Finally, in the long-term, adaptation planning efforts will lead to conditional changes (*e.g.*, percentage of flood-prone facilities increasing their resilience to storm events).