	A	B	C	D	E	F
1		**EMP Action Items - FY 2020 Q2**				NOTES
2		**Sustainability (Benefit) High Priority**				
3		**Met on February 10, 2020: M. Simko, K. Busquets, T. Meyer, K. Webb, Harold White**				s ill need to address water
4						
5		**Objective**: Increase use of sustainable practices to reduce WFF impact on the environment				
6						
7		**Targets**:				
8		1) Reduce energy intensity 30% from FY2003 baseline with annual reductions 0 5% reduction for FY2020				
9		2) Acquire 7 5% of total electricity from renewable sources				
10		3) Increase energy awareness at Wallops				
11		4) At least 17% of contract actions and at least 21% of contract obligations have statutory environmental requirements (bio-based, recycled content)				844-467-6272 109753#
12		5) Increase sustainable practices and use of Energy and Utility Performance Savings Contracts				
13		6) At least 15% of buildings or gross square footage (GSF) meets Federal Guiding Principles for High Performance Sustainable Buildings, 22% of buildings or 27 6% of GSF for FY2020				
14		7) Divert 50% of both non-construction and construction demolition debris solid waste				
15		8) Reduce fuel consumption by 20% relative to 2005; 0% increase for FY2020				
16		**Actions**	**Start**	**Completion/ Ongoing**	**Responsibility**	
17		**1) Reduce energy intensity 30% from FY2003 baseline with annual reductions. 0.5% reduction for FY2020**	**FY Q2 2014**	**FY Q4 2020**	**H. White E. Baca**	
18		a) N-159 Waterside Economizer Low Ambient Dry Cooler	FY Q2 2014	FY Q3 2020	H White E Baca	geothermal well complete
19		b) 300 ton Waterside Economizer Low Ambient Dry Cooler	FY Q3 2014	FY Q3 2020	H White E Baca	Work in progress
20		c) U-25/U-30 Geothermal HVAC	FY Q3 2014	FY Q3 2020	H White E Baca	Work in progress
21		d) Retro-commissioning for buildings F-5, F-6, E-100, and J-20	FY Q3 2018	FY Q4 2020	K Busquets	In progress
22		**2) Acquire 7.5% of total electricity from renewable sources**	**FY Q1 2015**	**FY Q4 2025**	**H. White**	
23		a) Purchase renewable energy certificates	FY Q1 2019	FY Q3 2020	L Hendershot H White E Baca	may not be needed in FY2020
24		b) Construct 13 megawatt ground-mounted solar field at WFF	FY Q1 2015	FY Q4 2021	H White	Project up and running on or before March 1

	A	B	C	D	E	F
25		**3) Increase energy awareness at Wallops**	**FY Q1 2020**	**FY Q4 2020**	**E. Baca M. Simko**	
26		a) Articles in Environmental/Safety newsletter	FY Q1 2020	FY Q4 2020	M Simko	
27		b) Implement energy outreach activity	FY Q1 2020	FY Q1 2020 Complete	E Baca M Simko K Busquets	October 16 - Energy Awareness Day, Main gate banner
28		**4) At least 17% of contract actions and at least 21% of contract obligations have statutory environmental requirements (bio-based, recycled content)**	**FY Q1 2020**	**FY Q4 2020**	**T. Patterson M. Simko**	
29		a) Develop training module for SATERN	FY Q1 2020	FY Q4 2020	M Simko T Patterson	
30		**5) Increase sustainable practices and use of Energy and Utility Performance Savings Contracts.**	**FY Q1 2020**	**FY Q4 2020**	**K. Busquets**	
31		a) Establish a UESC	FY Q1 2020	FY Q4 2020	K Busquets	Approved by NASA and utility RFP to be released Q2
32		**6) At least 15% of buildings or gross square footage meets Federal Guiding Principles for High Performance Sustainable Buildings, 22% of buildings or 27.6% of GSF for FY2020**	**FY Q2 2015**	**FY Q1 2020**	**K. Busquets**	
33		a) Pursue retro-commissioning to meet Federal Guiding Principles for Buildings F-5, F-6, E-100, and J-20	FY Q2 2018	FY Q4 2020	M Hurney	Need water meters connected to Metasys
34		b) Pursue LEED certification at WFF	FY Q1 2012	FY Q4 2020	K Busquets	
35		i) MARS PPF and Rocketlab facilities will meet LEED guidelines	FY Q1 2019	FY Q4 2020	K Busquets	
36		**7) Divert 50% of both non-construction and construction demolition debris solid waste**	**FY Q2 2016**	**FY Q4 2020**	**M. Simko D. Bruner W. Redmond K. Busquets**	
37		a) Work with WICC and NASA Code 228 to increase emphasis on recycling in construction projects	FY Q2 2016	FY Q4 2020 Ongoing	D Bruner M Simko K Busquets M Hurney	Added recycling and solid waste reporting to WICCII subcontracted tasks Reporting added to project closeout sheets/etc
38		b) Implement one new outreach activity for single stream recycling	FY Q2 2016	FY Q1 2020 Complete	D Bruner M Simko K Busquets	America Recycles Day event
39		**8) Reduce fuel consumption by 20% relative to 2005; 0% increase for FY2020**	**FY Q1 2020**	**FY Q4 2025**	**K. Webb K. Busquets**	Pursue electric vehicles in next budget cycle
40		a) Research employee vehicle plug-in program for POVs	FY Q2 2016	FY Q4 2020	K Busquets	
41		b) Install government vehicle charging stations	FY Q2 2016	FY Q4 2020	K Busquets	May be included with WFF solar project Phase II
42		c) Add language to O&M contract to increase Alternative Fuel Vehicles to contractor fleet at WFF	FY Q4 2018	FY Q4 2020	K Busquets	
43		d) Increase fleet of zero-emission vehicles and plug-in hybrids	FY Q2 2016	FY Q4 2020	K Webb	No budget but Kirk to check if golf carts count against our fleet size

	A	B	C	D	E	F
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45	**Resources**:					
46	People: 1 25 FTE (civil servant); 1/4 FTEs (contractors)					
47	Money: ~ $ /year					
48	Other: WICC contract and outside consultants/contractor					
49						
50						
51	**Training**:					
52	LEED-EB Training through US Green Building Council					
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55	**Monitoring and Measurement**:					
56	See Targets above					
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59	**Records**:					
60	Quarterly NETS Reporting					
61	Minutes from Sustainability Working Group Meeting					
62	Record of procurement for 1500MWh of electricity					
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43	K. Webb 2/10/2020 Did some checking with our guys at Greenbelt. They have two Global Electric Motorcars (GEM). They cost about $14,500 each. Contrary to what I had heard they have not had any major issues with reliability at Greenbelt. These vehicles would not count against our "fleet" numbers.

Principle	Guiding Principle ID	Status
1. Employ Integrated Design Principles		
Integrated Design. *Use a collaborative, integrated planning and design process*	**EIM.1**	Unknown
	EIM.2	Unknown
	EIM.3	Unknown
	EIM.4	Unknown
Commissioning	**EIM.5**	Ongoing
Energy Efficiency	**OEP.1**	draft due at 90% design
	OEP.2	Unknown
Onsite Renewable Energy	**OEP.3**	Unknown

	OEP.4	Could be addressed at center level
Measurement and Verification	**OEP.4**	Complete
Benchmarking	**OEP.5**	Occupancy
Indoor Water	**PCW.1**	Unknown
	PCW.2	Unknown
	PCW.3	Could be addressed at center level
Outdoor Water	**PCW.4**	Conforming at center level
	PCW.5	
Stormwater	**PCW.6**	Unknown
	PCW.7	Unknown
Process Water	**PCW.8**	Complete
Water Efficient Products	**PCW.9**	Unknown

Ventilation and Thermal Comfort	**IEQ.1**	Unknown
Moisture Control	**IEQ.2**	Unknown
Daylighting and Lighting Controls	**IEQ.3**	Unknown
	IEQ.4	Unknown
Low-Emitting Materials	**IEQ.5**	Unknown
Protect Indoor Air Quality during Construction	**IEQ.6**	Unknown
Tobacco Smoke Control	**IEQ.7**	Conforming at center level
Recycled Content	**EIM.1**	Unknown

Bio-based Content	**EIM.2**	Unknown
Environmentally Preferred Products	**EIM.3**	Unknown
Waste and Materials Management	**EIM.4**	Unknown
	EIM.5	Unknown
	EIM.6	Unknown
Ozone Depleting Compounds	**EIM.7**	Unknown

Requirement	Suggested Doumentation
Initiate and maintain an integrated project team as described by the Whole Building Design Guide <http://www.wbdg.org/design/engage_process.php> in all stages of a project's planning and delivery	Team Roster or equivalent --Completed "Responsible Team Member" fields --Other
Integrate the use of OMB's A-11, Section 7, Exhibit 300: Capital Asset Plan and Business Case Summary	--Copy of OMB's A-11, Section 7, Exhibit 300 --Other
Establish performance goals for siting, energy, water, materials, and indoor environmental quality along with other comprehensive design goals and ensures incorporation of these goals throughout the design and lifecycle of the building.	--Copy of building design criteria --Narrative describing how performance goals were pursued --Other
Consider all stages of the building's lifecycle, including deconstruction.	--Narrative demonstrating how lifecycle considerations were accommodated in project planning and design --Other
Employ commissioning practices tailored to the size and complexity of the building and its system components in order to verify performance of building components and systems and help ensure that design requirements are met. This should include an experienced commissioning provider, inclusion of commissioning requirements in construction documents, a commissioning plan, verification of the installation and performance of systems to be commissioned, and a commissioning report.	--Commissioning plan and report --Other
Establish a whole building performance target that takes into account the intended use, occupancy, operations, plug loads, other energy demands, and design to earn the ENERGY STAR® targets for new construction and major renovation where applicable. For new construction, reduce the energy use by 30 percent compared to the baseline building performance rating per the American National Standards Institute (ANSI)/American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., (ASHRAE)/Illuminating Engineering Society of North America (IESNA) Standard 90.1-2007, Energy Standard for Buildings Except Low-Rise Residential. For major renovations, reduce the energy use by 20 percent below pre-renovations 2003 baseline. Laboratory spaces may use the Labs21 Laboratory Modeling Guidelines.	--Portfolio Manager Statement of Energy Design Intent (SEDI) --Other
Use ENERGY STAR® and FEMP-designated Energy Efficient Products, where available.	--Construction specifications --As-built equipment specs --Other
Per the Energy Independence and Security Act (EISA) Section 523, meet at least 30% of the hot water demand through the installation of solar hot water heaters, when lifecycle cost effective.	--Design specs and photos --Justification that not lifecycle effective --Other

Per Executive Order 13423, implement renewable energy generation projects on agency property for agency use, when lifecycle cost effective.	--Design specs and photos --Justification that not lifecycle effective --Other
Per Executive Order 13423, implement renewable energy generation projects on agency property for agency use, when lifecycle cost effective.	Design specs and photos -- Justification that not lifecycle effective -- Other
Compare actual performance data from the first year of operation with the energy design target, preferably by using ENERGY STAR® Portfolio Manager for building and space types covered by ENERGY STAR®. Verify that the building performance meets or exceeds the design target, or that actual energy use is within 10% of the design energy budget for all other building types. For other building and space types, use an equivalent benchmarking tool such as the Labs21 benchmarking tool for laboratory buildings.	Portfolio Manager Benchmark Performance Report (or PM Baseline Comparison Report for two comparative periods) -- Current Portfolio Manager Statement of Energy Performance -- Labs 21 Analyes -- Other
Employ strategies that in aggregate use a minimum of 20 percent less potable water than the indoor water use baseline calculated for the building, after meeting the EPAct 1992, Uniform Plumbing Codes 2006, and the International Plumbing Codes 2006 fixture performance requirements.	--Watergy analyses --LEED water calculator analysis --Other
Consider installing water meters is to allow for the management of water use during occupancy. *Also required by 12/5/13 Presidential Memo*	--Narrative describing effort to address the requirement --Other
The use of harvested rainwater, treated wastewater, and air conditioner condensate should also be considered and used where feasible for nonpotable use and potable use where allowed.	--Narrative describing effort to address the requirement --Other
Use water efficient landscape and irrigation strategies, such as water reuse, recycling, and the use of harvested rainwater, to reduce outdoor potable water consumption by a minimum of 50 percent over that consumed by conventional means (plant species and plant densities).	--Submit documentation to demonstrate that no water is used for irrigation. --Other
The installation of water meters for locations with significant outdoor water use is encouraged.	
Employ design and construction strategies that reduce storm water runoff and discharges of polluted water offsite.	--Storm Water Pollution Prevention Plan (SWPP) --SWPP inspection reports summary. --Other
Per EISA Section 438, to the maximum extent technically feasible, maintain or restore the predevelopment hydrology of the site with regard to temperature, rate, volume, and duration of flow using site planning, design, construction, and maintenance strategies.	--Proof of implementation of EISA Section 438 technical guidance --Other
Per the Energy Policy Act of 2005 Section 109, when potable water is used to improve a building's energy efficiency, deploy lifecycle cost effective water conservation measures.	--Narrative describing where water is used to improve efficiency, and associated efforts to conserve water in such applications. --Other
Specify EPA's WaterSense-labeled products or other water conserving products, where available. Choose irrigation contractors who are certified through a WaterSense labeled program.	--Construction specifications. --As-built equipment specs. --Other

Meet ASHRAE Standard 55-2004, Thermal Environmental Conditions for Human Occupancy, including continuous humidity control within established ranges per climate zone, and ASHRAE Standard 62.1-2007, Ventilation for Acceptable Indoor Air Quality.	--Documentation form licensed architect or engineer --Other
Establish and implement a moisture control strategy for controlling moisture flows and condensation to prevent building damage, minimize mold contamination, and reduce health risks related to moisture.	--Documentation form licensed architect or engineer --Other
Provide automatic dimming controls or accessible manual lighting controls, and appropriate glare control.	Schematic of floor layout showing automated lighting controls -- Other
Achieve a minimum daylight factor of 2 percent (excluding all direct sunlight penetration) in 75 percent of all space occupied for critical visual tasks.	Indoor light measurements -- Glazing factor calculations -- Computer simulations -- Other
Specify materials and products with low pollutant emissions, including composite wood products, adhesives, sealants, interior paints and finishes, carpet systems, and furnishings.	--Construction specifications. --As-built equipment specs. --Other
Follow the recommended approach of the Sheet Metal and Air Conditioning Contractor's National Association Indoor Air Quality Guidelines for Occupied Buildings under Construction, 2007. After construction and prior to occupancy, conduct a minimum 72-hour flush-out with maximum outdoor air consistent with achieving relative humidity no greater than 60 percent. After occupancy, continue flush-out as necessary to minimize exposure to contaminants from new building materials.	--Documentation form licensed architect or engineer --Other
Implement a policy and post signage indicating that smoking is prohibited within the building and within 25 feet of all building entrances, operable windows, and building ventilation intakes during building occupancy.	--Environmental tobacco smoke control policy --Schematic demonstrating no-smoking areas and example signage --Other

Per Section 6002 of the Resource Conservation and Recovery Act (RCRA), for EPA-designated products, specify products meeting or exceeding EPA's recycled content recommendations. For other products, specify materials with recycled content when practicable. If EPA-designated products meet performance requirements and are available at a reasonable cost, a preference for purchasing them shall be included in all solicitations relevant to construction, operation, maintenance of or use in the building. EPA's recycled content product designations and recycled content recommendations are available on EPA's Comprehensive Procurement Guideline web site at <www.epa.gov/cpg>.	--Construction specifications. --As-built equipment specs. --Other

Per Section 9002 of the Farm Security and Rural Investment Act (FSRIA), for USDA-designated products, specify products with the highest content level per USDA's biobased content recommendations. For other products, specify biobased products made from rapidly renewable resources and certified sustainable wood products. If these designated products meet performance requirements and are available at a reasonable cost, a preference for purchasing them shall be included in all solicitations relevant to construction, operation, maintenance of or use in the building. USDA's biobased product designations and biobased content recommendations are available on USDA's BioPreferred web site at <www.usda.gov/biopreferred>.	--Construction specifications. --As-built equipment specs. --Other
Use products that have a lesser or reduced effect on human health and the environment over their lifecycle when compared with competing products or services that serve the same purpose. A number of standards and ecolabels are available in the marketplace to assist specifiers in making environmentally preferable decisions. For recommendations, consult the Federal Green Construction Guide for Specifiers at <www.wbdg.org/design/greenspec.php>.	--Construction specifications. --As-built equipment specs. --Other
Incorporate adequate space, equipment, and transport accommodations for recycling in the building design.	--schematic demonstrating accommodations for storing, processing and transporting recyclables. -Other
During a project's planning stage, identify local recycling and salvage operations that could process site-related construction and demolition materials.	--Construction/demolition recycling plan. --Other
During construction, recycle or salvage at least 50 percent of the non-hazardous construction, demolition and land clearing materials, excluding soil, where markets or onsite recycling opportunities exist. Provide salvage, reuse and recycling services for waste generated from major renovations, where markets or onsite recycling opportunities exist.	--Construction/demolition recycling report. --Other
Eliminate the use of ozone depleting compounds during and after construction where alternative environmentally preferable products are available, consistent with either the Montreal Protocol and Title VI of the Clean Air Act Amendments of 1990, or equivalent overall air quality benefits that take into account lifecycle impacts.	Purchasing policy -- Construction specifications -- Affirmative procurement reports -- Other

Responsible Organization	Action
228/Engr	Develop documentation
221	
221, 228/Engr	
224, 228/O&M	
GMB/ SBP	
GMB	Model to be developed by SBP
Ron Simko & GMB/SBP	verify Energy star and FEMP
GMB	Will not persue solar hot water due to building usage schedule. GMB to provide cost estimate for SWH installation.

Energy Manager, 228/Engr	Renewable energy prduction is perused at Center Level. Ron Simko to provide
Energy Manager	Metering at building level. Document.
Energy Manager	No LEED NC match. Meter all utilities and follow DOE's Guidance for Benchmarking: http://www1.eere.energy.gov/femp/pdfs/eisa432_guidance.pdf
Energy Manager, 228/Engr	Use water conserving products where available. Will not persue other strategies such as harvesting rainwater (no irrigation on site), Storm Run off (below grade BMP is to be utilized for dtorm runoff, not feasible for above grade storm water retention),
Energy Manager, 228/O&M	Proivde documentation for compliance with EISA
GMB	
GMB	
228/Engr	No potable water used
GMB, Constr Submital	Use other water conserving products, water sense labled flush-ometers not available. Provde documentation.

GMB/A&S	Document meets ASRAE 55 and 62
GMB	Humidity control strategy at O/A AHU.
Ron Simko	Will not comply due to mission constrraints. Document
Ron Simko	
GMB	Bid option or provide actual material specifications.
GMB & A&S	Provide spefications to comply
NASA Office of the Chief Health and Medical Officer	NASA to document
GMB	Options and/or speify actual materials to be provided during construction.

GMB	Options and/or speify actual materials to be provided during construction.
GMB	Options and/or speify actual materials to be provided during construction.
GMB	Verify and provide documentation.
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GMB	Verify and provide documentation.