

Council on Environmental Quality

# **Guiding Principles for Sustainable Federal Buildings**

And Associated Instructions

**December 2020**



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## I. Purpose

Since 2002, the Federal Government has outlined its intent to advance sustainable building principles and practices throughout its portfolio established through a number of statutory and executive policies that every Federal agency has integrated and utilized. These sustainable principles and practices have been incorporated into six Guiding Principles for sustainable Federal buildings (Guiding Principles), outlined below, to guide agencies in designing, locating, constructing, maintaining, and operating Federal buildings in a sustainable manner that increases efficiency, optimizes performance, eliminates unnecessary use of resources, ensures the health of occupants, protects the environment, generates cost savings, and mitigates risks to assets, consistent with Agency and Department missions.

Congress has enacted a range of statutory provisions relating to high-performance sustainable buildings, as well as energy and environmental goals and requirements that are advanced by the implementation of sustainable Federal buildings within an agency's portfolio.<sup>1</sup> Federal agencies must meet statutory requirements regarding high-performance sustainable buildings. The *Guiding Principles for Sustainable Federal Buildings and Associated Instructions* (Guidance) provide agencies with a means to meet these requirements as well as Executive Order (E.O.) 13834, *Efficient Federal Operations* (May 17, 2018) and the *Implementing Instructions for Executive Order 13834* (April 2019) (E.O. 13834 Implementing Instructions). The six Guiding Principles align with the definition of a high-performance green building established in the Energy Independence and Security Act (EISA) of 2007 ([42 U.S.C. § 17061\(13\)](#)), and serve as guidelines for Federal agencies to assess progress towards the sustainability metrics associated with their real property assets, in accordance with the statutory duties of executive agencies ([40 U.S.C. § 524](#)).

Consistent with section 3(a) and (d) of E.O. 13834 and the E.O. 13834 Implementing Instructions, this 2020 update of the *Guiding Principles for Sustainable Federal Buildings and Associated Instructions* (Guidance) consolidates, into one comprehensive set, the six Guiding Principles and improves their usability and consistency while not changing policy regarding sustainable Federal buildings. This version replaces and supersedes the previous version of the Guidance issued in February 2016, along with the *Guidance for Federal Agencies on Sustainable Practices for Designed Landscapes* (October 2011) and the *Implementing Instructions-Sustainable Locations for Federal Facilities* (September 2011).

The six Guiding Principles for sustainable Federal buildings incorporated into this Guidance were developed based on fundamental sustainable design practices and reflect progress in building design, construction, and operation best practices as well as ensuring efficient operations; protecting occupant health, wellness, and productivity; and promoting resilient buildings. The Guiding Principles ensure Federal buildings:

1. Employ Integrated Design Principles
2. Optimize Energy Performance
3. Protect and Conserve Water
4. Enhance the Indoor Environment

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<sup>1</sup> See, e.g., [42 U.S.C. § 17092](#): High-performance green Federal buildings; [42 U.S.C. § 17093](#): Federal Green Building Performance; [42 U.S.C. § 17144](#): OMB Government efficiency reports and scorecards; [42 U.S.C. 17061\(13\)](#): Definition of high-performance green building; and [42 U.S.C. § 17061\(12\)](#): Definition of high-performance building. Additional specific authorities are referenced throughout Appendices A through E.

5. Reduce the Environmental Impact of Materials
6. Assess and Consider Building Resilience

To ensure consistency, transparency, and accountability regarding sustainable Federal buildings, the E.O. 13834 Implementing Instructions provide direction on how agencies can demonstrate the implementation of sustainable design building initiatives to the Office of Management and Budget (OMB) ([42 U.S.C § 17093](#) and [42 U.S.C § 17144](#)).

The improvements made through this update address specific questions from agencies on the previous version of this Guidance, and provide additional clarity on technical applications and requirements as well as increased flexibility that recognizes the diversity of building functions and agency missions. This update simplifies multiple guidance documents to avoid confusion and inconsistent implementation. Additional direction and clarification on the use of third-party building certification systems and their relative equivalence to the Guiding Principles is also provided.

To address ambiguity under the prior version of this Guidance that exists in situations where the application life cycle cost-effectiveness or where a building's inherent function, mission, safety, or designation prevents the building from meeting the requisite criteria in order to be designated a sustainable Federal building, this update clarifies that those buildings that demonstrate a level of improved performance and sustainability, but do not meet the requisite criteria, may be designated as Federal high-performance buildings, in alignment with the statutory definition ([42 U.S.C § 17061\(12\)](#)).

As a result, this Guidance provides a streamlined practical, common sense approach to address frequently asked questions by agencies, reduce burden and costs, and increase flexibility by recognizing improved building performance.

The implementation of this Guidance can help ensure a consistent government-wide portfolio approach for Federal agencies to design, mitigate, and measure the impact of their buildings. This Guidance also provides agencies with a resource for long-term risk management and mitigation, to ensure agency portfolios remain effective and operational for the life of their facilities.

**Instructions**

The Guiding Principles, described in Section II of this Guidance, are sustainable design and operational principles that agencies can implement in both new and existing Federal buildings by following either the checklists in Appendices A and B or the third-party systems in Appendix C. These two pathways provide agencies with options to qualify a building as a sustainable Federal building consistent with the EO 13834 Implementing Instructions. The Appendices detail how to assess whether a new or existing building meets the Guiding Principles using the different assessment pathways, the reassessment process, and reporting requirements.

References for relevant statutory, regulatory, and industry standards are included in the criteria checklists provided in the appendices.

<p><b>Appendix A</b></p> <p>Assessing a Building Using the <i>Guiding Principles for Sustainable Federal Buildings Criteria Checklist for New Construction and Modernization</i></p>	<p>Directions on assessing new construction and modernization buildings using the Federal criteria checklist.</p>
<p><b>Appendix B</b></p> <p>Assessing a Building Using the <i>Guiding Principles for Sustainable Federal Buildings Criteria Checklist for Existing Buildings</i></p>	<p>Directions on assessing existing buildings using the Federal criteria checklist.</p>
<p><b>Appendix C</b></p> <p>Assessing a New Construction, Modernization, Major Renovation or Existing Building Using Third-Party Building Certification Systems</p>	<p>Directions on assessing new construction and modernizations, and major renovations or existing buildings using approved third-party building certification systems.</p>
<p><b>Appendix D</b></p> <p>Assessing a Building Using the <i>Guiding Principles for Sustainable Federal Buildings Reassessment Criteria Checklist</i></p>	<p>Directions on reassessing buildings to determine whether they continue to meet high-performance or sustainable Federal building criteria.</p>
<p><b>Appendix E</b></p> <p>Sustainable Federal Buildings Reporting Instructions</p>	<p>Instructions on tracking and reporting of sustainable Federal buildings.</p>
<p><b>Appendix F</b></p> <p>Definitions</p>	<p>Relevant definitions from statute and key building terms.</p>

## **II. Guiding Principles for Sustainable Federal Buildings**

### **1. Employ Integrated Design Principles**

#### **1.1. Integrated Design and Management**

Use a collaborative and integrated process to plan, design, construct, commission, and transition to operation each new building or modernization project. Consider design choices and operational components that improve environmental performance. Consider all stages of the building's life cycle when designing for all elements related to the Guiding Principles criteria. For existing buildings, apply integrated management principles to assess current and planned operating conditions to identify areas for optimization. Agencies should ensure plans include provisions or the ability to accommodate temporary changes to normal operating conditions due to emergencies or significant events.

#### **1.2. Sustainable Siting**

Follow an integrated site development process to conduct a site assessment that considers environmental, economic, and mission impacts and works to inform decisions on site design, construction, operations, and maintenance. Identify and mitigate current and projected site specific long-term risks through considerations that provide resilience to manmade and natural events such as hurricanes, storm surge, drought, flood, wind, and wildfire risks. Consider potential significant impacts to ensure the protection of historic properties and other cultural resources. Use historic properties available to the agency, to the maximum extent feasible, as designated by statute. Agencies should seek to find the right balance among sustainability, cost, and security considerations.

#### **1.3. Stormwater Management**

Meet statutory requirements for new construction, modernizations, and renovations, and employ strategies that reduce stormwater runoff and discharges of polluted water offsite to protect the natural hydrology and watershed health. Where feasible, use low impact development (LID) strategies to maintain or restore the natural, pre-developed ability of a site to manage rainfall.

#### **1.4. Infrastructure Utilization and Optimization**

Seek location-efficient sites, prioritizing locations that promote robust transportation choices, align with local and regional planning goals, and maximize the use of existing resources. Evaluate and provide appropriate electric vehicle charging infrastructure, consistent with current and anticipated future agency mission needs, when designing or renovating associated infrastructure, in accordance with applicable statutes, regulations, local laws, and agency policies.

#### **1.5. Commissioning**

Employ the appropriate commissioning tailored to the size and complexity of the building type and its system components to optimize and verify performance of building systems. Ensure buildings have operational policies that support continued compliance with all relevant statutory requirements for ongoing energy and water audits, where applicable.

## 2. Optimize Energy Performance

### 2.1. Energy Efficiency

Comply with all relevant statutory and regulatory requirements that establish Federal building energy efficiency standards and require the purchase, installation, and use of energy efficient products and/or equipment. Employ strategies that continue to optimize energy performance and minimize energy use throughout the operation and life of the building.

### 2.2. Energy Metering

Install building level meters for electricity, natural gas, and steam in order to track and continuously optimize energy performance. As required by statute, install advanced meters to the maximum extent practicable. Standard meters should be used when advanced meters are not appropriate.

### 2.3. Renewable Energy

Employ strategies to develop and integrate the use of life cycle cost-effective renewable electric energy and thermal renewable energy, in alignment with agency priorities to support applicable renewable energy goals.

### 2.4. Benchmarking

Benchmark building performance at least annually. Regularly monitor building energy performance against historic performance data and peer buildings to identify operating inefficiencies and conservation opportunities.

## 3. Protect and Conserve Water

### 3.1. Indoor Water Use

Minimize the use and waste of indoor potable water, and in accordance with statute, implement water conservation technologies to the maximum extent that the technologies are life cycle cost-effective. Purchase water conserving products and ensure optimized indoor water operations to the maximum extent practicable.

### 3.2. Water Metering

Install building level water meters in order to track and continuously optimize indoor potable water use, including detection of leaks.

### 3.3. Outdoor Water Use

Utilize current best practices and management strategies for water efficient landscaping, and employ, to the maximum extent practicable, water efficient irrigation strategies to track and reduce outdoor potable water consumption. Use non-irrigated, drought-tolerant native landscaping where practicable.

### 3.4. Alternative Water

Maximize the use of alternative sources of water to the extent practicable and where permitted under local laws and regulations.



## 4. Enhance the Indoor Environment

### 4.1. Ventilation and Thermal Comfort

Comply with all relevant statutory requirements to provide occupants with safe and healthy ventilation and thermal comfort, in alignment with applicable ASHRAE standards.

### 4.2. Daylighting and Lighting Controls

Maximize opportunities for and benefits of daylighting in regularly occupied space to introduce daylight and views into the spaces, except where not appropriate because of building function, mission, or structural constraints; reinforce circadian rhythms; and reduce the use of electrical lighting. Ensure appropriate lighting controls and task lighting.

### 4.3. Low-Emitting Materials and Products

Purchase, acquire, and ensure the use or application of low-emitting materials and products during the planning, construction, modification, maintenance, and operations of the facility.

### 4.4. Radon Mitigation

Ensure compliance with statutory and regulatory requirements to test for and mitigate radon in buildings, where appropriate.

### 4.5. Moisture and Mold Control

Implement moisture control strategies to minimize mold growth and associated health risks during building operations.

### 4.6. Indoor Air Quality during Construction and Operations

Implement necessary policies and protocols to prevent moisture damage to building materials and protect indoor air quality during renovations, repairs, and construction. Ensure indoor air quality procedures are in place that protect the air quality for occupants of the building during operations.

### 4.7. Environmental Smoking Control

Prohibit smoking in any form within the building and near all building entrances, operable windows, and building ventilation intakes, as specified by statute and regulations.

### 4.8. Integrated Pest Management

Implement and maintain a plan to encourage an environmentally responsible, integrated pest management approach that emphasizes proactive solutions, minimizes pesticide use, and, where chemical pesticides are needed, uses the least-toxic options.

### 4.9. Occupant Health and Wellness

Design building features and integrate programs and initiatives that promote voluntary physical health and wellness opportunities for the building occupants.

## 5. Reduce the Environmental Impact of Materials

### 5.1. Materials - Recycled Content

Use products that meet or exceed the Environmental Protection Agency's (EPA's) recycled content recommendations for building construction, modifications, operations, and maintenance, where applicable and as required by statute.

### 5.2. Materials - Biobased Content

Use products with the highest content level per the U.S. Department of Agriculture's (USDA's) bio-based content recommendations, where applicable and as required by statute.

### 5.3. Products

Procure and utilize construction materials and building supplies that have a lesser or reduced effect on human health and the environment over their life cycle when compared with competing products that serve the same purpose.

### 5.4. Ozone Depleting Substances

Comply with all relevant statutory requirements and regulations that identify substitutes for ozone-depleting substances.

### 5.5. Hazardous Waste

Ensure compliance during construction and operations with all relevant statutory requirements for hazardous waste management, including generation, storage, transport, and releases of hazardous substances.

### 5.6. Solid Waste Management

Reduce waste disposed of in landfills and incineration facilities by recovering, reusing, and recycling materials. Provide in building design, construction, renovation, and operation for the collection and storage of recyclable materials, including, as appropriate, compostable materials. Maintain a waste reduction and recycling program, and maximize waste diversion to the extent practicable. Pursue cost-effective waste minimization during the construction and renovation phase of the building, and maximize reuse or recycling of building materials, products, and supplies.

## 6. Assess and Consider Building Resilience

### 6.1 Risk Assessment

Determine the long-term mission criticality of the building and the operations to be housed in the building. Identify and assess both potential current and future regional risks to ensure resilient building design and operations and reduce potential vulnerabilities. Where applicable, align assessment and planning activities with local and regional efforts to increase community resilience.

### 6.2 Building Resilience and Adaptation

Incorporate resilient design and operational adaptation strategies that reduce the risk to and increase the resilience of the building. Avoid or mitigate the short- and long-term adverse impacts associated with projected climate changes and acute weather events, including storms, wildfires, droughts, and floods. To protect and ensure investments in Federal facilities, balance options to address current and projected risks against mission criticality, cost, and security needs over the building's intended service life.

### **III. Meeting the Guiding Principles**

#### **Applicability**

Agencies should apply this Guidance on an individual building basis. Agencies are encouraged to consider the project scope and purpose of the building as well as mission needs to determine which assessment pathway set forth below to use.

Agencies also can and should utilize portfolio-wide sustainable policies and practices, where applicable, to meet relevant criteria, supporting a consistent and uniform approach to sustainable Federal buildings across their portfolios. Additional details on the use of campus-wide or installation-wide approaches are provided in Appendices A and B.

#### **Assessment Pathways**

As set forth in the E.O. 13834 Implementing Instructions Section III.A.5, “agencies may qualify sustainable Federal buildings, including existing buildings, new construction, and major renovations, using one of the following:”

1. The Guiding Principles for Sustainable Federal Buildings and Associated Instructions (Criteria Checklists, outlined in Appendix A and B), or
2. Third-party building certification systems or standards identified by the U.S. General Services Administration’s (GSA’s) Office of High-Performance Buildings (outlined in Appendix C).

For new construction, modernizations, and major renovations projects, GSA’s recommendations are based on the criteria identified in [10 CFR § 433.300](#) or [10 CFR § 435.300](#), as applicable. A choice of assessment pathways provides agencies with flexibility to utilize whichever system can best support and align sustainable elements to their unique building and project needs. Agencies can continue to develop or utilize any available resources or tools, including those which assist in the assessments, to ensure that the building meets the criteria in Appendices A, B, or D.

Regardless of the pathway used, agencies must ensure that all building-level statutory requirements are met.

#### **Operational Impacts**

This Guidance also supports some functions inherent in building utilization, including optimizing operation and maintenance, which should be continued throughout the operational life of the building. Reassessment of building operations and performance every four years aligns with the EISA 2007 ([42 U.S.C. 8253\(f\)\(3\)\(A\)](#)) requirement for building evaluations and ensures the planned savings and impacts of sustainable Federal buildings continue to be realized.

### Life Cycle Cost-effectiveness

Agencies should apply all criteria within this Guidance where determined to be life cycle cost-effective and in alignment with agency mission and budget, and building or project scope. Certain statutory mandates reiterated through the Guiding Principles criteria also have requirements for life cycle cost-effectiveness. The term “cost-effectiveness” should include the use of benefit-cost analysis in accordance with [OMB Circular, A-11, Capital Programming Guide, 10 CFR Part 436, Subpart A](#), and [National Institute of Standards and Technology \(NIST\) and Federal Energy Management Program \(FEMP\) “Life Cycle Costing Manual for the Federal Energy Management Program” Handbook 135](#).

### Considerations for Building Mission and Unique Functions

To ensure consistency and transparency, if an agency determines that the building’s inherent function, mission, safety, or designation prevents it from meeting the minimum threshold of requisite criteria for a sustainable Federal building in a life cycle cost-effective manner as outlined in Appendices A and B or the minimum certification level in Appendix C, the building would not qualify as a sustainable Federal building under this Guidance. For the purposes of supporting the policy outlined in this Guidance, these buildings may subsequently be designated as Federal high-performance buildings ([42 U.S.C § 17061\(12\)](#)), so long as they have met as many required criteria for the building type that are determined to be life cycle cost-effective.

### Effective Date

All projects can utilize this version of the Guidance immediately upon issuance. However, in instances where an agency has already taken significant action and a change of reference could incur significant costs or result in project delays, an agency may continue to utilize the 2016 Guidance for that project. For the purposes of such a determination in relation to this Guidance, significant action means, for new constructions projects, the project budget has been appropriated, or for existing buildings, the agency has already made substantial progress in assessing the building. If the relevant threshold above is met within 180 days of issuance of this guidance, the agency may continue using the criteria in the 2016 Guidance to assess and qualify the building.

Buildings and projects assessed under a prior version of the Guidance may be considered grandfathered, and can continue to be reported as meeting the Guiding Principles so long as those buildings continue to meet the reassessment requirements established in the 2016 Guidance and outlined in Appendix D. A grandfathered building should be reassessed four years from the fiscal year it was last assessed as meeting the 2016 Guiding Principles or, if grandfathered prior to 2016, no later than four fiscal years from the issuance of this Guidance.

### Accountability

Each agency is responsible for evaluating and determining, on an individual building basis, whether its buildings meet the Guiding Principles as outlined in this Guidance. Agencies should utilize the instructions and resources provided in the Appendices to assist with their determination and documentation. It remains at the discretion of the agency to establish and maintain all processes for appropriately documenting the assessment of their buildings, whether conducted internally or using external resources. Agencies should maintain appropriate records of each building assessment to support determinations and sustainability designation of their buildings.

## **IV. General Provisions**

To accommodate future updates in technologies, industry standards, third-party certification systems and methodologies of integrating sustainability, CEQ reserves the ability to update the technical criteria in the appendices of this Guidance in the future to add additional options or pathways that could support a building in meeting the Guiding Principles.

Agencies must implement this Guidance consistent with applicable law and regulations, and subject to the availability of appropriations or other authorized funding. This Guidance does not supersede or invalidate any existing laws, regulations, or other legal requirements. If there is a conflict between the Guidance and a statute or regulation, then the statute or regulation governs. The contents of this Guidance do not have the force and effect of law and are not meant to bind the public in any way. This document is intended solely to improve the internal management of the Executive Branch. It is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable by any party against the United States, its departments, agencies, or entities, its officers, employees, or agents, or any other person.

## **APPENDICES**

- Appendix A -** Assessing a Building Using the Guiding Principles for Sustainable Federal Buildings Criteria Checklist for New Construction and Modernization
- Appendix B -** Assessing a Building Using the Guiding Principles for Sustainable Federal Buildings Criteria Checklist for Existing Buildings
- Appendix C -** Assessing a New Construction, Modernization, Major Renovation or Existing Building Using Third-Party Building Certification Systems
- Appendix D -** Assessing a Building Using the Guiding Principles for Sustainable Federal Buildings Reassessment Criteria Checklist
- Appendix E -** Sustainable Federal Buildings Reporting Instructions
- Appendix F -** Definitions

## Appendix A

### Assessing a Building Using the Guiding Principles for Sustainable Federal Buildings Criteria Checklist for **New Construction and Modernization (NC&M)**

This Guiding Principles for Sustainable Federal Buildings Criteria Checklist is a tool that agencies may use to demonstrate that a **new construction or modernization project** meets the intent of the Guiding Principles. Criteria on the checklist include both design elements and operational procedures that can be used to demonstrate continued operation as a sustainable Federal building after construction.

#### Instructions for NC&M:

The New Construction and Modernization checklist contains 30 criteria for agencies to assess in order to demonstrate that the building meets the policy outlined in this Guidance. All criteria should be considered as part of the initial assessment process and throughout the design and construction of the project.

**Core Criteria:** Eighteen core criteria, supported by statutory and regulatory requirements and green building industry standards, are considered fundamental principles for any Federal high-performance green building ([42 U.S.C. § 17061\(13\)](#)). **To qualify as a sustainable Federal building under this Guidance the building must meet all 18 of the core criteria.**

**Non-Core Criteria:** For the remaining 12 criteria that are not indicated as core, agencies must **meet a minimum of 75 percent (9 of 12)**. Agencies have flexibility to focus on the criteria that are most applicable to the building and account for life cycle cost effectiveness, mission requirements, and unique project scopes.

If an agency determines that the building’s inherent function, mission, safety, or designation precludes it from meeting the minimum threshold of requisite criteria in a life cycle cost-effective manner as outlined above, the building would not qualify as a sustainable Federal building under this Guidance. For the purposes of supporting the policy outlined in this Guidance, those buildings that have met as many of the requisite criteria that are life cycle cost-effective may be designated as a Federal high-performance building ([42 U.S.C § 17061\(12\)](#)).

Agencies should continue to ensure all Federal statutes applicable to the project or building are met, regardless of whether the building is able to achieve the minimum criteria to be qualified as a sustainable Federal building.

#### REFERENCE KEY

<b>S</b>	Criteria that are based on and reference statutory or regulatory requirements are indicated with “S” on the checklist. “S*” indicates NDAA-aligned criteria that are applicable to the U.S. Department of Defense (DoD).
<b>Std</b>	Criteria that are based on green building industry standards, rather than statutory or regulatory requirements, are indicated with “Std” on the checklist.
<b>[C/I]</b>	Criteria where campus-wide or installation-wide protocols, policies, contracts can be used to demonstrate, upon assessment, that the criteria were met at the building level are indicated on the checklist with a [C/I].

1.0 - Employ Integrated Design Principles			
NC&M Criteria 1.1	Integrated Design and Management	CORE	
		(Std)	
Establish sustainability goals as part of the project to meet the Guiding Principles and incorporate those goals into the design document and process, such as the Owner’s Project Requirements (OPR), Basis of Design (BOD), Conceptual Design Report (CDR), or relevant design documents.			
<b>AND ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	Use a collaborative, integrated process and team tailored to the size and function of the building to plan, program, design, construct, commission, and transition to operation the building project or modernization. Identify team members and roles. Ensure energy, water, materials, indoor environmental quality, recycling and composting, occupant health and wellness, transportation (including public transit, safety, parking, and electric vehicle charging), siting and landscape, the protection of historic properties and other cultural resources, community integration, and building resilience are considered while balancing the building’s function and mission throughout the design and construction of the building and into operations plans, where feasible.		
<b>Option 2</b>	Use an integrated design process consistent with <a href="#">2018 International Green Construction Code (IgCC) Appendix F Integrated Design, including F101.1.1 (F1.1.1) Charrette Process</a> (excluding F101.1.2 (F1.1.2) Design Charrette Matrix).		
NC&M Criteria 1.2	Sustainable Siting	CORE	
		(S)	[C/I]
Follow all relevant requirements of 41 CFR § 102-76.20 of the <a href="#">Federal Management Regulation</a> to make a positive contribution to the surrounding landscape, and comply with the National Environmental Policy Act of 1969, as amended, <a href="#">42 U.S.C. 4321</a> et seq., and the National Historic Preservation Act of 1966, as amended, <a href="#">54 U.S.C. Subtitle III, Division A</a> .			
<b>AND ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	In alignment with sustainable siting best practices, assess all relevant opportunities for enhancements to the site sustainability and engage building occupants and other stakeholders utilizing the site. The specific actions of the site selection and planning stage should reflect the complexity of the proposed building and include, as appropriate, the following: <b>1)</b> avoid development of prime farmland; <b>2)</b> preserve areas with permeable soils; <b>3)</b> avoid or, if not possible, minimize potential harm to or within the floodplain; <b>4)</b> protect and conserve existing landscapes, wetlands, forest, and wilderness areas; <b>5)</b> minimize site disturbance; <b>6)</b> preserve threatened or endangered species and their habitats, including pollinators’ habitats; <b>7)</b> improve linkages and connections to surrounding destinations and neighborhoods; <b>8)</b> use historic properties, especially those located in central business districts; and <b>9)</b> incorporate appropriate security design parameters. Incorporate these environmental considerations through a systematic interdisciplinary approach, and balance these concerns with cost and security. Agencies can reference additional siting resources, including <a href="#">GSA’S Sustainable Facilities Tool (SFTool)</a> and the <a href="#">Environmental Protection Agency (EPA’s) Smart Growth—Location and Green Building site</a> , the <a href="#">U.S. Department of Agriculture’s (USDA) pollinators resources</a> , and for projects involving historic properties, the <a href="#">Secretary of the Interior’s Standards for Rehabilitation &amp; Illustrated Guidelines on Sustainability for Rehabilitating Historic Buildings</a> .		
<b>Option 2</b>	Conform to 2018 IgCC <a href="#">Section 501.3.1 (5.3.1) Site Selection</a> and <a href="#">501.3.2 (5.3.2) Predesign Site Inventory and Assessment</a> .		



NC&M Criteria 1.3	Stormwater Management	CORE	
		(S)	[C/I]
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	For new construction or modernization projects disturbing a surface area of 5,000 or more square feet, use planning, design, construction, and maintenance strategies to maintain or restore the predevelopment hydrology of the property in terms of temperature, rate, volume, and duration of flow, in accordance with statutory requirements ( <a href="#">42 U.S.C. § 17094</a> ). Low impact development (LID) infrastructure solutions can be utilized to help achieve this criteria.		
<b>Option 2</b>	For new construction or modernization projects disturbing a surface area fewer than 5,000 square feet, use site planning, design, construction, and maintenance strategies such as low impact development (LID) to manage on-site stormwater and to maintain or restore hydrologic conditions after development, to the maximum extent that is technically practicable.		
<b>Option 3</b>	Conform to 2018 IgCC <a href="#">Section 501.3.4 (5.3.4) Stormwater Management</a> .		
NC&M Criteria 1.4	Infrastructure Utilization and Optimization	NON-CORE	
		(Std)	[C/I]
Evaluate and prioritize transportation strategies and associated infrastructure improvements that promote and support alternative transportation, including walking, cycling, alternative fuel and electric vehicles, and public transit over the life of the building, as feasible and consistent with the mission of the facility.			
<b>AND ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	Locate any functional entry of the project within a ¼-mile (400-meter) walking distance of existing or planned bus, streetcar, shuttle, or informal transit stops, or within a ½-mile (800-meter) walking distance of existing or planned bus rapid transit stops, light or heavy rail stations, commuter rail stations or ferry terminals, except for those facilities where their mission and function prevents mass transportation access.		
<b>Option 2</b>	Install electric vehicle charging stations for a minimum of two percent of the parking spaces created as part of the project or designated for the building occupants, where on-site vehicle parking is provided.		
<b>Option 3</b>	Designate at least five percent of the parking spaces created as part of the project or designated for the building occupants as preferred parking for alternative fuel vehicles (may include parking for agency fleet alternative fuel vehicles).		
<b>Option 4</b>	Provide an alternative transportation program to reduce congestion and the need for parking. The program may include transit services; walkability improvements including connections to transit, sidewalks, pathways, and bicycle trails; alternative transit education; designated rideshare areas; transit subsidies; telecommuting incentives; or bicycle racks and showers.		
<b>Option 5</b>	Prior to and during the space decision process, engage planning officials at the state, metropolitan, or municipal level to identify ways proposed agency actions can support community sustainability and potentially align with local and regional long range plans and objectives. Support and integrate proposed actions into the project.		
<b>Option 6</b>	Conform to 2018 IGCC <a href="#">Section 1001.3.2.4 (10.3.2.4) Transportation Management Plan</a> and <a href="#">Section 501.3.7.3 (5.3.7.3) Site Vehicle Provisions</a> .		

NC&M Criteria 1.5	Commissioning	CORE	
		(S)	
Employ commissioning, as defined per Section 432 of the Energy Independence and Security Act of 2007 ( <a href="#">42 U.S.C. 8253(f)(1)(A)</a> ), and tailored to the size and complexity of the building.			
<b>AND ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	<p>Document through a commissioning process that the building and its commissioned components, assemblies, and systems (including any renewable energy systems, thermal storage, district heating and cooling system, and cooling towers) comply with the owner’s project requirements. Conduct commissioning in accordance with the U.S. Department of Energy (DOE) Federal Energy Management Program's (FEMP) <a href="#">Commissioning for Federal Facilities</a> guidance, using ANSI/ASHRAE/IES Standard 202 or other generally accepted engineering standards, guidelines, and nationally recognized organizations.</p> <p>For less complex buildings, commissioning should be performed with generally accepted engineering standards acceptable to the agency.</p> <p>A certified commissioning provider (may include a qualified agency employee), independent of the design and construction or operating team, should provide, within one year of project completion, a final commissioning report.</p>		
<b>Option 2</b>	<p>Conform to 2018 IgCC <a href="#">Section 1001.3.1.2 (10.3.1.2) Building Project Commissioning (Cx) Process</a>.</p>		

<b>2.0 Optimize Energy Performance</b>			
<b>NC&amp;M Criteria 2.1</b>	<b>Energy Efficiency</b>	<b>CORE</b>	
		(S)	
<b>For New Construction:</b>			
<p>Ensure compliance with Federal energy efficiency performance requirements for new construction in accordance with § 109 of the Energy Policy Act of 2005 (<a href="#">42 U.S.C. § 6834(a)(3)(A)</a>) and DOE’s regulations as established under <a href="#">10 CFR parts 433, subpart A</a>, and <a href="#">10 CFR parts 435, subpart A</a>.</p> <p>Ensure installation of <a href="#">ENERGY STAR</a> and <a href="#">FEMP-designated products</a> in all procurements involving energy-consuming products and services, in accordance with <a href="#">42 U.S.C § 8259b</a> and <a href="#">10 CFR § 436.40–436.43</a>.</p>			
<b>For Modernization projects:</b>			
<p>Ensure installation of <a href="#">ENERGY STAR</a> and <a href="#">FEMP-designated products</a> in all procurements involving energy-consuming products and services, in accordance with <a href="#">42 U.S.C § 8259b</a> and <a href="#">10 CFR § 436.40–436.43</a>.</p> <p>Employ strategies to improve energy performance and reduce energy usage in accordance with <a href="#">42 U.S.C. § 8253(a)</a>.</p>			
<b>AND ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	Ensure building energy use is 20 percent below a FY 2015 energy use baseline.		
<b>Option 2</b>	Ensure building energy use is 30 percent below a FY 2003 energy use baseline.		
<b>Option 3</b>	Ensure the building has an <a href="#">ENERGY STAR</a> score of 75 or higher.		
<b>Option 4</b>	For building types not eligible to receive an <a href="#">ENERGY STAR</a> score and where adequate benchmarking data exists, demonstrate that the building is in the top quartile of energy performance for its building type.		
<b>Option 5</b>	Follow the Federal energy performance requirements established under 10 CFR Parts 433 and 435 by designing to exceed ANSI/ASHRAE/IES Standard 90.1 by at least 30 percent, where life cycle cost-effective.		
<b>NC&amp;M Criteria 2.2</b>	<b>Energy Metering</b>	<b>CORE</b>	
		(S)	
<p>Install building-level meters for electricity and advanced meters to the maximum extent practicable, as required by EAct 2005 § 103 (<a href="#">42 U.S.C. § 8253(e)</a>). Install standard or advanced meters for natural gas and steam to the maximum extent practical, in accordance with the DOE’s <a href="#">Federal Building Metering Guidance</a> and EISA 2007 § 434 (<a href="#">42 U.S.C. § 8253(e)(1)</a>).</p>			

NC&M Criteria 2.3	Renewable Energy	NON-CORE	
		(S)	[C/I]
<p>Evaluate applicable renewable electric energy strategies related to the project or building that could support, as needed, agency progress toward renewable energy goals where cost-effective, per <a href="#">42 U.S.C. § 15852(a)</a>.</p> <p><i>[Campus/Installation-wide approach can be utilized if the agency has assessed and can verify that the building will directly benefit from the renewable energy system. Alternatively, the agency should develop an internal energy accounting or tracking system to apportion renewable energy or attributes to the building to avoid any double counting.]</i></p>			
<b>AND ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	<p>Implement, as appropriate, life cycle cost-effective on-site renewable electric or thermal energy projects.</p> <p>Alternatively, utilize alternative energy systems such as waste heat, combined heat and power (CHP), or fuel cell energy systems, where life cycle cost-effective.</p> <p>If on-site renewable energy or alternative energy systems are not technically feasible or life cycle cost-effective, the agency should establish an internal energy accounting or tracking system to apportion power purchases from off-site renewable sources or renewable energy certificates (RECs) to the building, as aligned with agency plans.</p>		
<b>Option 2</b>	<p>Where appropriate and life cycle cost-effective, not less than 30 percent of the hot water demand is to be met through the installation and use of solar hot water heaters, per <a href="#">42 U.S.C § 6834(a)(3)(A)(iii)</a>.</p>		
<b>Option 3</b>	<p>Conform to 2018 IgCC <a href="#">Section 701.4.1.1 (7.4.1.1) On-Site Renewable Energy Systems</a> or equivalent, with the exception that there is no minimum energy production (kBtu/ft<sup>2</sup>) requirement.</p>		
NC&M Criteria 2.4	Benchmarking	CORE	
		(S)	
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	<p>Benchmark building performance at least annually, preferably using <a href="#">ENERGY STAR Portfolio Manager</a>, and regularly monitor building energy performance against historic performance data and peer buildings, in accordance with criteria established by DOE’s <a href="#">Federal Building Energy Use Benchmarking Guidance</a> per <a href="#">42 U.S.C. § 8253(f)(8)</a>.</p>		
<b>Option 2</b>	<p>Conform to 2018 IgCC <a href="#">Section 1001.3.2.1.3.2 (10.3.2.1.3.2) Track and Assess Energy Consumption</a>.</p>		

<b>3.0 - Protect and Conserve Water</b>			
<b>NC&amp;M Criteria 3.1</b>	<b>Indoor Water Use</b>	<b>CORE</b>	
		(S)	
<p>For new construction where water is used to achieve energy efficiency, water conservation measures must be applied to the extent that they are life cycle cost-effective in accordance with 10 CFR Parts 433 and 435. In addition to the use of water conservation technologies otherwise required by <a href="#">42 U.S.C. § 6834</a>, water conservation technologies are to be applied to the extent that the technologies are life cycle cost-effective for new construction and modernization projects, in accordance with <a href="#">42 U.S.C. § 6834(a)(3)(D)(vii)</a>.</p> <p>Eliminate the use of single-pass (also called "once-through") cooling equipment using potable water and optimize cooling tower operations to minimize makeup water.</p> <p>Agencies should refer to <a href="#">EPA's WaterSense</a>, <a href="#">GSA's SFTool: Water</a>, and <a href="#">DOE-FEMP's Water Efficiency in Federal Buildings and Campuses</a> resources for additional details on available water conservation technologies and best management practices.</p>			
<b>For New Construction:</b>			
<b>AND ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	Install WaterSense equipment or equivalent alternatives, where available, for all fixtures that are designed to be used more than once per day on average over a month. For all fixtures and fittings using potable water with planned use of more than once per day, compile cut sheet or product declarations or plumbing schedule showing flush or flow rate performance meeting WaterSense or equivalent.		
<b>Option 2</b>	Conform to 2018 IgCC <a href="#">Section 601.3.2.1 (6.3.2.1) Plumbing Fixtures and Fittings</a> or <a href="#">601.3.2.6 (6.3.2.6) Medical and Laboratory Facilities</a> (if applicable).		
<b>For Modernization projects:</b>			
<b>AND ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	Install WaterSense equipment or equivalent alternatives to demonstrate at least a 20 percent reduction when comparing installed fixture performance to a base case representing the code-minimum, using the <a href="#">FEMP Water Evaluation Data Tool</a> or other water fixture performance calculator. For all fixtures and fittings using potable water with planned use of more than once a day, compile cut sheet or product declarations or plumbing schedule showing flush or flow rate performance consistent with WaterSense or equivalent.		
<b>Option 2</b>	Conform to 2018 IgCC <a href="#">Section 601.3.2.1 (6.3.2.1) Plumbing Fixtures and Fittings</a> or <a href="#">601.3.2.6 (6.3.2.6) Medical and Laboratory Facilities</a> (if applicable).		
<b>NC&amp;M Criteria 3.2</b>	<b>Water Metering</b>	<b>CORE</b>	
		(Std)	
<b>AND ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	Install building level water meters (standard or advanced) and monitor to ensure optimized management of water use during occupancy, including detection of leaks in accordance with DOE's <a href="#">Federal Building Metering Guidance</a> .		
<b>Option 2</b>	Conform to 2018 IgCC <a href="#">Section 601.3.4.1 (6.3.4.1) Consumption Management</a> .		

NC&M Criteria 3.3	Outdoor Water Use	NON-CORE	
		(Std)	[C/I]
Evaluate and implement, as applicable, water efficient landscaping best practices that incorporate native, non-invasive, drought tolerant, and low maintenance plant species. Utilize and follow, as appropriate, landscaping best practices provided by <a href="#">GSA's SFTool - Water</a> resources, <a href="#">DOE-FEMP's Water Efficiency in Federal Buildings and Campuses</a> resources, <a href="#">EPA's WaterSense - Outdoors</a> resources, or an agency-approved tool.			
<b>AND ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	Employ water efficient irrigation strategies to reduce outdoor potable water consumption. Where installed, demonstrate that the permanent irrigation system uses 50 percent or less of the amount of potable water used in conventional practices, assuming typical annual baseline water use. Refer to <a href="#">DOE-FEMP's Water Efficiency in Federal Buildings and Campuses</a> resource on establishing a baseline. Install water meters for irrigation systems serving more than 25,000 square feet of landscaping.		
<b>Option 2</b>	If installing landscaping, utilize xeriscaping techniques or do not irrigate beyond the establishment of plantings.		
<b>Option 3</b>	Conform to 2018 IgCC <a href="#">Section 601.3.1.1 (6.3.1.1) Landscape Design</a> . If irrigation is used, conform to <a href="#">Section 601.3.1.2 (6.3.1.2) Irrigation</a> and <a href="#">Section 601.3.4.1 (6.3.4.1) Consumption Management</a> (for irrigated landscaped areas greater than 25,000 square feet).		
NC&M Criteria 3.4	Alternative Water	NON-CORE	
		(Std)	[C/I]
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	Implement life-cycle cost-effective methods to utilize alternative sources of water for indoor or outdoor use, such as harvested rainwater, treated wastewater, air handler condensate capture, grey water, and reclaimed water, where permitted by local laws and regulations.		
<b>Option 2</b>	Implement life-cycle cost-effective methods to utilize alternative sources of water that conform to the 2018 <a href="#">IgCC Definition of Water, Alternative on-site sources</a> .		

4.0 - Enhance the Indoor Environment			
<b>NC&amp;M Criteria 4.1</b>	<b>Ventilation and Thermal Comfort</b>		<b>CORE</b>
			(S)
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	In accordance with 41 CFR §§ 102-74.195 and 102-74.185 of the <a href="#">Federal Management Regulation</a> , comply with all ventilation and thermal comfort requirements. Utilize the most current version of ASHRAE "Ventilation for Acceptable Indoor Air Quality" Standard 62.1 or 62.2 and ASHRAE 55 "Thermal Environmental Conditions for Human Occupancy" as specified by the Federal Management Regulation. Agencies should refer to the <a href="#">GSA's SFTool Enhancing Health with Indoor Air</a> resources on enhancing indoor air quality.		
<b>Option 2</b>	Conform to 2018 IgCC <a href="#">Sections 801.3.1 (8.3.1) Indoor Air Quality</a> and <a href="#">801.3.2 (8.3.2) Thermal Environmental Conditions for Human Occupancy</a> .		
<b>NC&amp;M Criteria 4.2</b>	<b>Daylighting and Lighting Controls</b>		<b>NON-CORE</b>
			(S)
Design and construct the building to meet and maintain all required illumination levels, in accordance with 41 CFR § 102-74.180 of the <a href="#">Federal Management Regulation</a> , and maximize the use of automatic dimming controls or accessible manual controls in regularly occupied spaces.			
<b>AND ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	Improve access to and benefits from daylight by ensuring regularly occupied spaces along the exterior wall have fenestration, and control solar gain, daylight transmittance, and glare. If the building cannot achieve adequate daylighting due to mission or security needs, utilize circadian-effective lighting based on computer analysis or simulation tools to design optimal lighting conditions for the regularly occupied spaces. Evaluate and assess occupant workplace to allow more open space around windows, except where not appropriate because of building function, mission, or structural constraints.		
<b>Option 2</b>	Conform to 2018 IgCC <a href="#">Sections 801.3.7 (8.3.7) Glare Control</a> , <a href="#">801.4.1.1.1 (8.4.1.1.1) Minimum Daylight Area</a> , and <a href="#">801.4.1.2 (8.4.1.2) Minimum Sidelighting Effective Aperture for Office Spaces and Classrooms</a> , and <a href="#">801.4.1.3 (8.4.1.3) Shading for Offices</a> ; or <a href="#">801.5.1 (8.5.1) Daylight Simulation</a> .		
<b>NC&amp;M Criteria 4.3</b>	<b>Low-Emitting Materials and Products</b>		<b>NON-CORE</b>
			(Std) [C/I]
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	Utilize low-emitting (low or no volatile organic compound (VOC)) materials, on at least 75 percent of interior products by cost or surface area, for the following materials and products: composite wood products, flooring and carpet systems, wall panels, insulation, adhesives, sealants, interior paints and finishes, solvents, janitorial supplies, and furnishings. Agencies should refer to <a href="#">EPA's Volatile Organic Compounds' Impact on Indoor Air Quality</a> resources for information on low-emitting products.		
<b>Option 2</b>	Conform to 2018 IgCC <a href="#">Section 801.4.2 (8.4.2) Materials</a> or <a href="#">Section 801.5.2 (8.5.2) Materials</a> .		

NC&M Criteria 4.4		Radon Mitigation	CORE	
			(S)	[C/I]
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>				
<b>Option 1</b>	In accordance with 41 CFR § 102-80.20 of the <a href="#">Federal Management Regulation</a> , test for radon and mitigate high levels to maintain a level at or below 4 pCi/L (picocuries/liter).			
<b>Option 2</b>	Conform to 2018 IgCC <a href="#">Section 1001.3.1.9 (10.3.1.9) Soil-Gas Control</a> .			
NC&M Criteria 4.5		Moisture and Mold Control	NON-CORE	
			(Std)	
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>				
<b>Option 1</b>	Implement a moisture control strategy (may be part of the operations and maintenance protocols) for controlling moisture flows and condensation to prevent building damage, minimize mold contamination, and reduce health risks related to moisture.			
<b>Option 2</b>	Conform to 2018 IgCC <a href="#">Section 801.3.6 (8.3.6) Moisture Control</a> .			
NC&M Criteria 4.6		Indoor Air Quality during Construction	NON-CORE	
			(Std)	
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>				
<b>Option 1</b>	Develop and implement a plan to protect indoor air quality during construction.			
<b>Option 2</b>	Conform to 2018 IgCC <a href="#">Sections 1001.3.1.5 (10.3.1.5) IAQ Construction Management</a> , and <a href="#">1001.3.1.8 (10.3.1.8) Construction Activity Pollution Prevention: Protection of Occupied Areas</a> .			
NC&M Criteria 4.7		Environmental Smoking Control	CORE	
			(S)	[C/I]
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>				
<b>Option 1</b>	In accordance with 41 CFR § 102-74.315 and 102-74.330 of the <a href="#">Federal Management Regulation</a> , prohibit smoking in any form inside and within 25 feet of all building entrances, operable windows, and building ventilation intakes. Ensure signage is installed as appropriate.			
<b>Option 2</b>	Conform to 2018 IgCC <a href="#">Section 801.3.1.7 (8.3.1.7) Environmental Tobacco Smoke</a> .			



NC&M Criteria 4.8	Integrated Pest Management	CORE	
		(S)	[C/I]
<p>In accordance with 41 CFR § 102-74.35 of the <a href="#">Federal Management Regulation</a>, ensure effective and environmentally sensitive integrated pest management (IPM) services including the planning, development, operations, and maintenance for pest control, removal, and prevention in both indoor and outdoor spaces. Ensure that pest management contracts are effectively coordinated with the activities of other building service programs that have a bearing on pest activity, such as food service, landscaping, child care, waste management, and repairs and operations.</p> <p>Refer to <a href="#">GSA’s IPM definition</a>, <a href="#">EPA’s IPM resources</a>, and <a href="#">GSA’s SFTool Pest Management resources</a> for additional program guidance.</p>			
NC&M Criteria 4.9	Occupant Health and Wellness	CORE	
		(Std)	
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	<p>Evaluate the feasibility of implementing occupant health and wellness efforts and promote two or more strategies that are cost-effective and applicable to the building mission.</p> <p>Agencies are encouraged to assess and promote universally accepted workplace occupant health and wellness strategies most appropriate to their building and mission. Agencies should refer to <a href="#">GSA’s SFTool</a> for additional strategies and guidance on health and wellness in Federal facilities.</p> <p>Examples of common health and wellness strategies include, but are not limited to:</p> <ol style="list-style-type: none"> <li>1) Implementing biophilic design strategies that connect a majority of interior spaces with nature, using views, finishes, plants, daylighting, outdoor access, or other strategies;</li> <li>2) Providing healthy dining options in the building or on campus that support offering a variety of fresh food options for occupants, following the <a href="#">U.S Department of Health and Human Services (HHS) / GSA Health and Sustainability Guidelines for Federal Concessions and Vending Operations</a> where appropriate;</li> <li>3) Designing stairwells as a desirable option for circulation to support active occupants;</li> <li>4) Implementing a fitness program, including constructing or providing access to a fitness center or multi-use space for exercise in the building, on-site, or on campus;</li> <li>5) Installing bicycle parking with safe, secure storage;</li> <li>6) Providing adjustable-height desks or computer risers for 25 percent of the regular occupied spaces; and</li> <li>7) Providing water bottle-refilling stations, establish a process to test water quality annually, and ensure proper maintenance of the stations. Refer to <a href="#">EPA’s Drinking Water</a> resources for additional guidelines.</li> </ol>		
<b>Option 2</b>	<p>Achieve certification utilizing any <a href="#">Health &amp; Wellness Standards and Rating System</a> identified by GSA, under its authorities per <a href="#">42 U.S.C. § 17092</a>.</p>		

<b>5.0 - Reduce the Environmental Impact of Materials</b>			
<b>NC&amp;M Criteria 5.1</b>	<b>Materials - Recycled Content</b>		<b>CORE</b>
			(S) [C/I]
Use Resource Conservation and Recovery Act (RCRA) section 6002 compliant products that meet or exceed <a href="#">EPA's Comprehensive Procurement Guideline Program</a> , which provides recycled content recommendations for building construction, modifications, operations, and maintenance, in accordance with <a href="#">42 U.S.C. § 6962</a> et seq.			
<b>NC&amp;M Criteria 5.2</b>	<b>Materials - Biobased Content</b>		<b>CORE</b>
			(S) [C/I]
Use <a href="#">U.S. Department of Agriculture (USDA) BioPreferred</a> products, which are designated products with the highest content level per USDA's biobased content recommendations, in accordance with <a href="#">7 U.S.C. § 8102</a> .			
<b>NC&amp;M Criteria 5.3</b>	<b>Products</b>		<b>NON-CORE</b>
			(Std)
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	Use construction products and building supplies recommended under <a href="#">EPA's Recommendations of Specifications, Standards, and Ecolabels for Federal Purchasing</a> , as appropriate and applicable.		
<b>Option 2</b>	Conform to 2018 IgCC <a href="#">Section 901.4.1.4 (9.4.1.4) Multiple-Attribute Product Declaration or Certification</a> .		
<b>NC&amp;M Criteria 5.4</b>	<b>Ozone Depleting Substances</b>		<b>CORE</b>
			(S) [C/I]
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	Ensure compliance with <a href="#">42 U.S.C. § 7671k</a> and <a href="#">42 U.S.C. § 7671j</a> , concerning the procurement of safe alternatives for ozone depleting substances. Maximize the use of safe alternatives, where <a href="#">EPA's Significant New Alternative Policy (SNAP)</a> Program has identified acceptable substitutes and alternatives.  Refer to EPA's SNAP regulations, 40 CFR part 82, which list substitutes that have been determined unacceptable, acceptable to use conditions, and acceptable subject to narrowed use limits.		
<b>Option 2</b>	Conform to 2018 IgCC <a href="#">Section 901.3.3 (9.3.3) Refrigerants</a> .		

NC&M Criteria 5.5	Hazardous Waste	CORE	
		(S)	
<p>Ensure compliance with all relevant hazardous waste construction or operational activities that are covered by RCRA subtitle C and subtitle I and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), per <a href="#">42 U.S.C. § 9601</a> et seq. and its implementing regulations at <a href="#">40 CFR Parts 239-282</a>.</p> <p>This criterion is achieved so long as it can be demonstrated that the building has a program and procedure to manage hazardous waste, or the building does not generate, store, treat, or dispose of hazardous waste. (40 CFR §§ 260.10 and 261.3).</p>			
NC&M Criteria 5.6	Solid Waste Management	NON-CORE	
		(Std)	
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	<p>Develop and implement a construction and demolition waste management plan. Where markets exist, divert at least 50 percent of construction and demolition materials from landfills and non-energy generating incinerations, as defined by and in alignment with <a href="#">EPA's Waste Management Hierarchy</a>.</p> <p><b>AND</b></p> <p>Design the building to incorporate appropriate space, equipment, and transport accommodations for collection, storage, and staging of recyclables and, as appropriate, compostable materials.</p>		
<b>Option 2</b>	<p>Conform to 2018 IgCC <a href="#">Section 901.3.1.1 (9.3.1.1) Diversion</a>.</p> <p><b>AND</b></p> <p>Conform to 2018 IgCC <a href="#">Section 901.3.4 (9.3.4) Areas for Storage and Collection of Recyclables and Discarded Goods</a>.</p>		

6.0 - Assess and Consider Building Resilience			
NC&M Criteria 6.1	Risk Assessment	NON-CORE	
		S*	[C/I]
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	<p>Conduct a regionally tailored risk assessment for the site that, where appropriate, aims to:</p> <ol style="list-style-type: none"> <li>1. Assess long-term mission critical functions over the intended service life by incorporating considerations such as mission needs, building functions, occupants, and operations. Consider impacts to the surrounding community and to building operational needs.</li> <li>2. Assess the localized risks to the design life of the building, which involves identifying hazards, threats, vulnerabilities, and consequences. During the hazard identification step, identify and review any known observed and expected long-term weather-related and geographical hazards to inform and enhance the resilience of the building design and operations.</li> <li>3. Assess relevant stressors that could exacerbate hazards and risks to the building and operations. Account for whether the frequency is increasing, remaining the same, or decreasing in the specific region.</li> <li>4. Evaluate and consider the adaptive capacity of the building and operations to cope with shocks and stressors, or ability to adjust to new situations.</li> <li>5. Incorporate, as applicable, a comprehensive energy and water infrastructure assessment to ensure resilience and investigate alternative energy sources to serve as back-up power.</li> </ol>		
<b>Option 2</b>	<p>Ensure that the building, as well as any planned mission critical activities housed in the building, have been evaluated and integrated as part of a recent agency, facility, installation, or campus resilience or adaptation assessment. This can include any resilience and adaptation assessment activities associated with Installation Master Plans, climate adaptation plans, or equivalent agency, installation, or campus resilience or adaptation plans.</p>		
<b>Option 3</b>	<p>Utilize available Federal climate resilience planning tools to inform the decision making and design for the building project.</p> <p>Available tools include the <a href="#">U.S. Climate Resilience Toolkit</a>, the <a href="#">Naval Facilities Engineering Command’s Climate Change Installation Adaptation and Resilience Planning Handbook</a>, the <a href="#">NIST Community Resilience Planning Guide for Buildings and Infrastructure Systems</a>, the <a href="#">NIST EDGe\$ (Economic Decision Guide Software) Online Tool</a>, the <a href="#">U.S. Army Corps of Engineers climate preparedness and resilience planning tools</a>, the U.S. Department of the Army’s <a href="#">Climate Assessment Tool</a> and <a href="#">Climate Resilience Handbook</a>, FEMP’s <a href="#">Technical Resilience Navigator</a>, or any other Federal agency-developed climate resilience or adaptation planning tools that become available.</p>		

NC&M Criteria 6.2	Building Resilience and Adaptation	NON-CORE	
		S*	[C/I]
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	Utilize the risk assessment to determine and prioritize design parameters that should be incorporated to ensure resilient building design and operations over the intended service life of the building, considering mission criticality, cost, and security. Ensure the implementation of no cost and cost-effective climate resilience measures, and, where feasible, implement solutions that focus on operations. Consider in the operation plans of the building, facility, campus, or installation, the adaptive capacity of the building to cope with stressors and mitigate based on mission criticality and cost. Identify and implement measures, where appropriate, to support passive survivability and functionality during emergencies.		
<b>Option 2</b>	Ensure the implementation of cost-effective strategies identified through an agency developed resilience or adaptation plans or any other Federal agency developed climate resilience or risk assessment planning tools. (For examples of available tools, refer to criteria 6.1.)		

## Appendix B

### Assessing a Building Using the Guiding Principles for Sustainable Federal Buildings Criteria Checklist for **Existing Buildings (EB)**

This Guiding Principles for Sustainable Federal Buildings Criteria Checklist is a tool that agencies may use to demonstrate that an **existing building** meets the intent of the Guiding Principles. Criteria on the checklist include both design elements for renovation projects and operational and maintenance procedures that can be used to demonstrate continued operation as a sustainable Federal building.

#### Instructions for EB:

The Existing Buildings checklist contains 30 criteria for agencies to assess in order to demonstrate that the building meets the policy outlined in this Guidance. All criteria should be considered as part of the initial assessment process and throughout the design and construction of the project.

**Core Criteria:** Twelve core criteria, supported by statutory and regulatory requirements and green building industry standards, are considered fundamental principles for any Federal high-performance green building ([42 U.S. Code § 17061\(13\)](#)). **To qualify as a sustainable Federal building under this Guidance the building must meet all 12 of the core criteria.**

**Non-Core Criteria:** For the remaining 18 criteria that are not indicated as core, agencies must **meet a minimum of 50 percent (9 of 18)**. Agencies have flexibility to focus on the criteria that are most applicable to the building and account for life cycle cost effectiveness, mission requirements, and unique project scopes.

If an agency determines that the building’s inherent function, mission, safety, or designation precludes it from meeting the minimum threshold of requisite criteria in a life cycle cost-effective manner as outlined above, the building would not qualify as a sustainable Federal building under this Guidance. For the purposes of supporting the policy outlined in this Guidance, those buildings that have met as many of the requisite criteria that are life cycle cost-effective may be designated as a Federal high-performance building ([42 U.S.C § 17061\(12\)](#)).

Agencies should continue to ensure all Federal statutes applicable to the project or building are met, regardless of whether the building is able to achieve the minimum criteria to be qualified as a sustainable Federal building.

#### REFERENCE KEY

<b>S</b>	Criteria that are based on statutory or regulatory requirements are indicated with “S” on the checklist. “S*” indicates an NDAA aligned criteria that are applicable to the Department of Defense (DoD).
<b>Std</b>	Criteria that are based on green building industry standards, rather than statutory or regulatory requirements, are indicated with “Std” on the checklist.
<b>[C/I]</b>	Criteria where campus-wide or installation-wide protocols, policies, contracts can be used to demonstrate, upon assessment, that the criteria was met at the building level are indicated on the checklist with a [C/I].

1.0 - Employ Integrated Design Principles			
EB Criteria 1.1	Integrated Design and Management	CORE	
		(Std)	
Ensure that sustainability goals for the operation of the building are established and are incorporated into the building's Operations and Maintenance (O&M) procedures. If a renovation project is planned in the building, ensure that sustainability goals have been developed as part of the project to meet the Guiding Principles and that they are incorporated into applicable project design documents.			
<b>AND ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	Use a collaborative, integrated process team tailored to the size and function of the building to plan, program, operate, and maintain the building. Ensure opportunities to optimize energy, water, materials, indoor environmental quality, recycling and composting, occupant health and wellness, transportation (including public transit, safety, parking, and electric vehicle charging), siting and landscape, the protection of historic properties and other cultural resources, community integration, and building resilience continue to be considered, supporting the building's function and mission throughout the life of the building.		
<b>Option 2</b>	For buildings with renovation projects, use a collaborative, integrated process and team tailored to the size and function of the building to plan, program, design, construct, commission, and transition to operation the building renovation. Identify team members and roles. Ensure all opportunities from Option 1 are considered in the project.		
<b>Option 3</b>	For buildings with renovation projects, use an integrated design process consistent with 2018 <a href="#">IgCC Appendix F Integrated Design</a> .		
EB Criteria 1.2	Sustainable Siting	NON-CORE	
		(S)	[C/I]
Follow all relevant requirements of 41 CFR § 102-76.20 of the <a href="#">Federal Management Regulation</a> to make a positive contribution to the surrounding landscape, and comply with the National Environmental Policy Act of 1969, as amended, <a href="#">42 U.S.C. § 4321</a> et seq., and the National Historic Preservation Act of 1966, as amended, <a href="#">54 U.S.C. Subtitle III, Division A</a> .			
<b>AND ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	In alignment with sustainable siting best practices, assess any relevant opportunities for continued protections and potential enhancements to the site's sustainability and engage with building occupants. The specific actions of the site enhancements or optimization should reflect the scope and complexity of the proposed project or building and include, as applicable and technically feasible, the following: <b>1)</b> mitigate any potential or existing impacts to neighboring prime farmland; <b>2)</b> take action to enhance, mitigate, and preserve existing areas with permeable soils; <b>3)</b> minimize potential harm to or within the floodplain; <b>4)</b> protect and conserve existing landscapes, wetlands, forest, and wilderness areas; <b>5)</b> if impacting site, minimize site disturbance; <b>6)</b> implement policies and programs to preserve threatened or endangered species and their habitats, including pollinators' habitats; <b>7)</b> optimize linkages and connections to surrounding destinations and neighborhoods; <b>8)</b> continue use of historic properties, especially those located in central business districts; and <b>9)</b> enhance appropriate security design parameters.		

	<p>Incorporate these environmental considerations through a systematic interdisciplinary approach, and balance these concerns with cost and security. Agencies can reference additional siting resources from <a href="#">GSA'S Sustainable Facilities Tool (SFTool)</a> and the <a href="#">Environmental Protection Agency (EPA's) Smart Growth—Location and Green Building site</a>, the <a href="#">U.S. Department of Agriculture's (USDA) pollinators resources</a>, and for projects involving historic properties, the <a href="#">Secretary of the Interior's Standards for Rehabilitation &amp; Illustrated Guidelines on Sustainability for Rehabilitating Historic Buildings</a>.</p>			
<b>Option 2</b>	<p>In the case of full or partial building renovation projects, use an integrated design process to apply 2018 IgCC <a href="#">Section 501.3.1 (5.3.1) Site Selection</a> and <a href="#">Section 501.3.2 (5.3.2) Predesign Site Inventory and Assessment</a> as applicable.</p>			
<b>EB Criteria 1.3</b>		<b>Stormwater Management</b>	<b>NON-CORE</b>	
			<b>(S)</b>	<b>[C/I]</b>
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>				
<b>Option 1</b>	<p>Employ or maintain strategies, such as low impact development (LID), that reduce stormwater runoff and discharges of polluted water offsite to protect the natural hydrology and watershed health.</p>			
<b>Option 2</b>	<p>For buildings with renovation projects disturbing a surface area of 5,000 or greater square feet, use planning, design, construction, and maintenance strategies to maintain or restore the predevelopment hydrology of the property in terms of temperature, rate, volume, and duration of flow, in accordance with statutory requirements (<a href="#">42 U.S.C. § 17094</a>).</p>			
<b>Option 3</b>	<p>For buildings with renovation projects disturbing fewer than 5,000 square feet, use site planning, design, construction, and maintenance strategies, such as Low Impact Development (LID), to manage on-site stormwater and to maintain or restore hydrologic conditions after development, to the maximum extent that is technically practicable.</p>			
<b>EB Criteria 1.4</b>		<b>Infrastructure Utilization and Optimization</b>		<b>NON-CORE</b>
				<b>(Std)</b>
<p>Assess existing transit opportunities and prioritize transportation strategies that promote alternative transportation. These strategies may include commuting programs, cycling, alternative fuel vehicles, electric vehicles, walkability factors, and transit incentives applicable to the building. Include the building in any master planning related to transportation, and building occupants should be able to participate in all transport.</p>				
<b>AND ONE OF THE FOLLOWING OPTIONS:</b>				
<b>Option 1</b>	<p>Assess and develop plans to optimize or facilitate building occupants' access (within walking distance), to existing or planned bus, streetcar, shuttle, and rapid transit stops; light or heavy rail stations; commuter rail stations; or ferry terminals. Ensure a program is in place that reviews and alerts building occupants of new services and opportunities.</p>			
<b>Option 2</b>	<p>Consistent with <a href="#">42 U.S.C. § 6364</a>, establish an electric vehicle supply equipment (EVSE) policy and install one or more electric vehicle charging stations if parking is provided.</p>			
<b>Option 3</b>	<p>Verify that building occupants are able to access preferred parking for alternative fuel vehicles (may include parking for agency fleet alternative fuel vehicles).</p>			
<b>Option 4</b>	<p>Provide an alternative transportation program consisting of a combination of transit services to support walkability and connection to transportation networks, including pedestrian access to sidewalks, pathways, and bicycle trails, to reduce transportation congestion and parking. The program may include alternative transit education, preferred parking for rideshare vehicles, transit discounts, telecommuting, and bicycle racks.</p>			
<b>Option 5</b>	<p>Conform to 2018 IGCC <a href="#">Section 1001.3.2.4 (10.3.2.4) Transportation Management Plan</a> and <a href="#">Section 501.3.7.3 (5.3.7.3) Site Vehicle Provisions</a>.</p>			



EB Criteria 1.5	Commissioning	CORE	
		(S)	
Employ commissioning based on the designation of the building per Section 432 of the Energy Independence and Security Act of 2007 ( <a href="#">42 U.S.C. § 8253(f)(2)(B))</a> and tailored to the size and complexity of the building.			
<b>AND ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	<p><b>For a building identified as a “covered facility” (<a href="#">42 U.S.C. § 8253(f)(2)(B)</a>):</b>                      Ensure compliance with <a href="#">42 U.S.C. § 8253(f)(3)(B)</a> to identify and assess (re/retro-) commissioning measures for the facility in accordance with FEMP guidance, <a href="#">Facility Energy Management Guidelines and Criteria for Energy and Water Evaluations in Covered Facilities</a> and <a href="#">Commissioning for Federal Facilities</a> guidance.</p> <p>The “Exclusion of Small Facilities” pertaining to commissioning as outlined in FEMP’s <a href="#">Facility Energy Management Guidelines and Criteria for Energy and Water Evaluations in Covered Facilities</a> cannot be used to exempt the building from this criteria.</p>		
<b>Option 2</b>	<p><b>For a building not identified as a “covered facility” (<a href="#">42 U.S.C. § 8253(f)(2)(B)</a>):</b>                      Ensure the building has previously been commissioned, recommissioned, or retro-commissioned and has not had a major change in mission or function, occupancy, energy consumption, water consumption, or major facility upgrades, or renovations since previous commissioning.</p> <p>If the building has not previously been commissioned or major changes have occurred, identify and assess (re/retro-) commissioning measures for the facility, in accordance with FEMP’s <a href="#">Commissioning for Federal Facilities</a> guidance.</p>		
<b>Option 3</b>	<p><b>For either a “covered” or “non-covered” facility (<a href="#">42 U.S.C. § 8253(f)(2)(B)</a>):</b>                      Implement ongoing commissioning in accordance with FEMP’s <a href="#">Commissioning for Federal Facilities</a> guidance, which identifies on-going commissioning as an appropriate pathway for large and complex facilities with high energy use and/or frequent tenant complaints.</p> <p>For covered facilities, ensure compliance with all statutory reporting requirements, per <a href="#">42 U.S.C. § 8253(f)(3)(B)</a>, when using on-going commissioning.</p>		

2.0 Optimize Energy Performance			
EB Criteria 2.1	Energy Efficiency	CORE	
		(S)	
<p>Employ strategies to improve energy performance and reduce energy usage, and, for all procurements involving energy-consuming products and services, incorporate energy-efficiency criteria consistent with <a href="#">ENERGY STAR</a> and <a href="#">FEMP-designated energy-efficient products</a>, in accordance with <a href="#">42 U.S.C § 8259b</a> (10 CFR §§ 436.40-436.43).</p>			
<b>AND ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	<p>Ensure that the building energy use is 20 percent below a FY 2015 energy use baseline. Engineering or energy estimates based on the size, function, and complexity of the building may be used in cases where the building is part of a facility that shares a meter per DOE’s <a href="#">Federal Building Metering Guidance</a>.</p> <p>If baseline year data is not available or reliable, data from the earliest post-baseline year that is available and reliable can be used.</p>		
<b>Option 2</b>	<p>Ensure that the building energy use is 30 percent below a FY 2003 energy use baseline. Engineering or energy estimates based on the size, function, and complexity of the building may be used in cases where the building is part of a facility that shares a meter per DOE’s <a href="#">Federal Building Metering Guidance</a>.</p> <p>If baseline year data is not available or reliable, data from the earliest post-baseline year that is available and reliable can be used.</p>		
<b>Option 3</b>	<p>Ensure the building has an <a href="#">ENERGY STAR</a> score of 75 or higher.</p>		
<b>Option 4</b>	<p>For building types not eligible to receive an <a href="#">ENERGY STAR</a> score and where adequate benchmarking data exists, demonstrate that the building is in the top quartile of energy performance for its building type.</p>		
<b>Option 5</b>	<p>For buildings with renovation projects, conform to Federal design energy performance specifications established under <a href="#">10 CFR parts 433, subpart A</a>, and <a href="#">10 CFR parts 435, subpart A</a> by designing the building to exceed ANSI/ASHRAE/IES Standard 90.1 by at least 30 percent, where life cycle cost-effective.</p>		
EB Criteria 2.2	Energy Metering	CORE	
		(S)	
<p>Verify the use of existing meters or, if no meter exists, install building-level meters or advanced meters to the maximum extent practicable for electricity, and standard metering devices for natural gas and steam, in accordance with DOE’s <a href="#">Federal Building Metering Guidance</a>, per <a href="#">42 U.S.C § 8253(e)(1)</a>.</p> <p>In a case where shared infrastructure for a facility is served by one meter, the energy use of the building may be calculated and evaluated using engineering energy estimates based on the size, function, and complexity of the building.</p>			

EB Criteria 2.3		Renewable Energy		NON-CORE	
				(S)	[C/I]
<p>Evaluate applicable renewable electric energy strategies related to the project or building that could support, as needed, agency progress toward meeting renewable energy goals where cost-effective, per <a href="#">42 U.S.C. § 15852(a)</a>.</p> <p><i>[Campus/Installation-wide approach can be utilized if the agency has assessed and can verify that the building will directly benefit from the renewable energy system. Alternatively, the agency should develop an internal energy accounting or tracking system to apportion renewable energy or attributes to the building to avoid any double counting.]</i></p>					
<b>AND ONE OF THE FOLLOWING OPTIONS:</b>					
<b>Option 1</b>	<p>Implement, as appropriate, life cycle cost-effective on-site renewable electric or thermal energy projects.</p> <p>Alternatively, utilize alternative energy systems such as waste heat, combined heat and power (CHP), or fuel cell energy systems, where life cycle cost-effective.</p> <p>As provided for in section III.A.2 of the E.O. 13834 Implementing Instructions, if on-site renewable energy or alternative energy systems are not technically feasible or life cycle cost-effective, the agency should establish an internal energy accounting or tracking system to apportion power purchases from off-site renewable sources or renewable energy certificates (RECs) to the building, as aligned with agency plans.</p>				
<b>Option 2</b>	<p>For buildings with renovation projects, conform to 2018 IgCC <a href="#">Section 701.4.1.1 (7.4.1.1) On-Site Renewable Energy Systems</a>, with the exception that there is no minimum energy production (kBtu/ft<sup>2</sup>) requirement.</p>				
EB Criteria 2.4		Benchmarking		NON-CORE	
				(S)	
<p>Benchmark building performance at least annually and regularly monitor building energy performance against historical performance data and peer buildings, where feasible.</p>					
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>					
<b>Option 1</b>	<p><b>For a building identified as a “covered facility” (42 U.S.C. § 8253(f)(2)(B)):</b>                      Benchmark building performance at least annually, preferably using <a href="#">ENERGY STAR Portfolio Manager</a>, and regularly monitor building energy performance against historical performance data and peer buildings in accordance with DOE’s <a href="#">Federal Building Energy Use Benchmarking Guidance</a> per <a href="#">42 U.S.C. § 8253(f)(8)</a>.</p>				
<b>Option 2</b>	<p><b>For a building not identified as a “covered facility” (42 U.S.C. § 8253(f)(2)(B)):</b>                      Benchmark using a system consistent with agency policy, including alternative benchmarking systems and/or strategies not subject to public disclosure, if applicable. Agencies can refer to DOE’s <a href="#">Federal Building Energy Use Benchmarking Guidance</a> for additional resources.</p>				
<b>Option 3</b>	<p>For buildings with renovation projects, conform to 2018 IgCC <a href="#">Section 1001.3.2.1.3.2 (10.3.2.1.3.2) Track and Assess Energy Consumption</a>.</p>				

<b>3.0 - Protect and Conserve Water</b>				
<b>EB Criteria 3.1</b>	<b>Indoor Water Use</b>		<b>CORE</b>	
			(S)	
<p>Employ strategies that minimize water use and verify purchasing policies or procedures are in place that require water efficient fixtures.</p> <p>Agencies should refer to <a href="#">EPA's WaterSense</a>, <a href="#">GSA's SFTool - Water</a>, and <a href="#">DOE-FEMP's Water Efficiency in Federal Buildings and Campuses</a> resources for additional details on available water conservation technologies and best management practices.</p>				
<b>AND ONE OF THE FOLLOWING OPTIONS:</b>				
<b>Option 1</b>	<p>Ensure that water use is 20 percent below a FY 2007 water use baseline (from meter readings or engineering estimates).</p> <p>If baseline year data is not available or reliable, data from the earliest post-baseline year that is available and reliable can be used.</p>			
<b>Option 2</b>	<p>Conduct analysis showing at least a 20 percent reduction when comparing installed fixture performance to a base case that represents the code-minimum, using the <a href="#">FEMP Water Evaluation Data Tool</a> or water fixture performance calculator.</p>			
<b>Option 3</b>	<p>To maximize water savings in HVAC systems, single-pass (also called "once-through") cooling equipment using potable water should be eliminated or retrofitted to recirculate or recapture discharge water in other applications (such as irrigation). Cooling towers should maximize cycles of concentration in accordance with 2018 IgCC <a href="#">Section 601.3.2.3 (6.3.2.3) HVAC Systems and Equipment</a>.</p>			
<b>Option 4</b>	<p>Develop and implement a strategic water management plan in accordance with the applicable <a href="#">FEMP Best Management Practices (BMPs) for Water Efficiency</a>.</p>			
<b>EB Criteria 3.2</b>	<b>Water Metering</b>		<b>NON-CORE</b>	
			(Std)	
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>				
<b>Option 1</b>	<p>Install building level water meters (standard or advanced) and monitor to ensure optimized management of water use during occupancy, including detection of leaks, to the maximum extent practicable, in accordance with DOE's <a href="#">Federal Building Metering Guidance</a>.</p> <p>In a case where shared infrastructure for a facility is served by one meter, the water use of each building may be calculated and evaluated using engineering water estimates based on the size, function, and complexity of the building. Agencies should refer to <a href="#">DOE-FEMP</a> resources for additional details.</p>			
<b>Option 2</b>	<p>For buildings with renovation projects, conform to 2018 IgCC <a href="#">Section 601.3.4.1 (6.3.4.1) Consumption Management</a>.</p>			

EB Criteria 3.3	Outdoor Water Use	NON-CORE	
		(Std)	[C/I]
Evaluate and implement, as applicable, water efficient landscaping best practices that incorporate native, non-invasive, drought tolerant, and low maintenance plant species. Utilize and follow, as appropriate, landscaping best practices provided by <a href="#">GSA's SFTool - Water</a> resources, <a href="#">DOE-FEMP's Water Efficiency in Federal Buildings and Campuses</a> resources, <a href="#">EPA's WaterSense - Outdoors</a> resources, or an agency-approved tool.			
<b>AND ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	Employ water efficient irrigation strategies to reduce outdoor potable water consumption. Where installed, demonstrate that the permanent irrigation system uses 50 percent or less of the amount of potable water used in conventional practices, assuming typical annual baseline water use. Refer to <a href="#">DOE-FEMP's Water Efficiency in Federal Buildings and Campuses</a> resources on establishing a baseline. Install water meters for irrigation systems serving more than 25,000 square feet of landscaping.		
<b>Option 2</b>	If installing or using landscaping, utilize xeriscaping techniques or do not irrigate beyond the establishment or re-establishment of plantings.		
<b>Option 3</b>	Conform to 2018 IgCC <a href="#">Section 601.3.1.1 (6.3.1.1) Landscape Design</a> .  If irrigation is used, conform to <a href="#">Section 601.3.1.2 (6.3.1.2) Irrigation</a> , and <a href="#">Section 601.3.4.1 (6.3.4.1) Consumption Management</a> (for irrigated landscaped areas greater than 25,000 square feet).		
EB Criteria 3.4	Alternative Water	NON-CORE	
		(Std)	[C/I]
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	Implement, where technically feasible and permitted by local laws and regulations, methods to utilize alternative sources of water for indoor or outdoor use, such as harvested rainwater, treated wastewater, air handler condensate capture, grey water, and reclaimed water.		
<b>Option 2</b>	Implement methods to utilize alternative sources of water that conform to the 2018 <a href="#">IgCC Definition of Water, Alternative on-site sources</a> .		

4.0 - Enhance the Indoor Environment			
<b>EB Criteria 4.1</b>	<b>Ventilation and Thermal Comfort</b>		<b>CORE</b>
			(S)
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	In accordance with 41 CFR §§ 102-74.195 and 102-74.185 of the <a href="#">Federal Management Regulation</a> , comply with all ventilation and thermal comfort requirements. Agencies should refer to the <a href="#">GSA's SFTool - Enhancing Health with Indoor Air</a> resources on enhancing indoor air quality.		
<b>Option 2</b>	For buildings with renovation projects, conform to 2018 IgCC <a href="#">Sections 801.3.1 (8.3.1) Indoor Air Quality</a> and <a href="#">801.3.2 (8.3.2) Thermal Environmental Conditions for Human Occupancy</a> .		
<b>EB Criteria 4.2</b>	<b>Daylighting and Lighting Controls</b>		<b>NON-CORE</b>
			(S)
Verify the building maintains all required illumination levels, in accordance with 41 CFR § 102-74.180 of the <a href="#">Federal Management Regulation</a> , and maximize the use of automatic dimming controls or accessible manual controls in regularly occupied spaces.			
<b>AND ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	Maximize access to and benefits of daylight by ensuring that regularly occupied spaces along the exterior wall have fenestration, and control solar gain, daylight transmittance, and glare. Evaluate and assess occupant workplaces to allow more open space around windows with appropriate glare controls, except where not appropriate because of building function, mission, or structural constraints.		
<b>Option 2</b>	If the regularly occupied spaces do not have adequate daylighting, utilize circadian-effective lighting based on computer analysis or simulation tools to design optimal lighting conditions for regularly-occupied spaces.		
<b>Option 3</b>	For buildings with renovation projects, conform to 2018 IgCC <a href="#">Sections 801.3.7 (8.3.7) Glare Control</a> , <a href="#">801.4.1 (8.4.1) Daylighting</a> , <a href="#">801.4.1.1.1 (8.4.1.1.1) Minimum Daylight Area</a> , <a href="#">801.4.1.2 (8.4.1.2) Minimum Sidelighting Effective Aperture for Office Spaces and Classrooms</a> , and <a href="#">801.4.1.3 (8.4.1.3) Shading for Offices</a> ; or <a href="#">801.5.1 (8.5.1) Daylight Simulation</a> .		
<b>EB Criteria 4.3</b>	<b>Low-Emitting Materials and Products</b>		<b>NON-CORE</b>
			(Std) [C/I]
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	Verify policy or purchasing procedures are in place to utilize low-emitting (low or no volatile organic compound (VOC)) materials. Applicable materials and products may include common supplies and replacements for composite wood products, flooring and carpet systems, wall panels, insulation, adhesives, sealants, interior paints and finishes, solvents, janitorial supplies, and furnishings. Agencies should refer to <a href="#">EPA's Volatile Organic Compounds' Impact on Indoor Air Quality</a> resources for information on low-emitting products.		
<b>Option 2</b>	Verify policy or purchasing procedures are in place that conform to 2018 IgCC <a href="#">Section 801.4.2 (8.4.2) Materials</a> or <a href="#">Section 801.5.2 (8.5.2) Materials</a> .		

EB Criteria 4.4		Radon Mitigation	CORE	
			(S)	[C/I]
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>				
<b>Option 1</b>	In accordance with 41 CFR § 102-80.20 of the <a href="#">Federal Management Regulation</a> , test for radon in buildings and mitigate high levels to not exceed 4 pCi/L (picocuries/liter). Verify policy is in place that manages the process for testing and relevant mitigation activities to adequately protect occupant health.			
<b>Option 2</b>	Conform to 2018 IgCC <a href="#">Section 1001.3.1.9 (10.3.1.9) Soil-Gas Control</a> .			
EB Criteria 4.5		Moisture and Mold Control	NON-CORE	
			(Std)	
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>				
<b>Option 1</b>	Verify a moisture control and mitigation strategy is in place (may be part of operations and maintenance protocols) for controlling moisture flows and condensation to prevent building damage, minimize mold contamination, and reduce health risks related to moisture.			
<b>Option 2</b>	For buildings with renovation projects, conform to 2018 IgCC <a href="#">Section 801.3.6 (8.3.6) Moisture Control</a> .			
EB Criteria 4.6		Indoor Air Quality during Construction	NON-CORE	
			(Std)	
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>				
<b>Option 1</b>	Implement or verify a policy is in place to protect indoor air quality during operations as well as during any applicable renovations in the existing building. This may include strategies for having permanent entryway systems in place to capture dirt and particulates entering the building and specific procedures to protect occupants during renovations.			
<b>Option 2</b>	For buildings with renovation projects, conform to 2018 IgCC <a href="#">Sections 1001.3.1.5 (10.3.1.5) IAQ Construction Management</a> , and <a href="#">1001.3.1.8 (10.3.1.8) Construction Activity Pollution Prevention: Protection of Occupied Areas</a> .			
EB Criteria 4.7		Environmental Smoking Control	CORE	
			(S)	[C/I]
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>				
<b>Option 1</b>	In accordance with 41 CFR §§ 102-74.315 and 102-74.330 of the <a href="#">Federal Management Regulation</a> , prohibit smoking in any form inside and within 25 feet of all building entrances, operable windows, and building ventilation intakes. Ensure signage is installed as appropriate.			
<b>Option 2</b>	Conform to 2018 IgCC <a href="#">Section 801.3.1.7 (8.3.1.7) Environmental Tobacco Smoke</a> .			

EB Criteria 4.8	Integrated Pest Management	NON-CORE	
		(S)	[C/I]
<p>In accordance with 41 CFR § 102-74.35 of the <a href="#">Federal Management Regulation</a>, ensure effective and environmentally sensitive integrated pest management (IPM) services including the planning, development, operations, and maintenance for pest control, removal, and prevention in both indoor and outdoor spaces. Ensure that pest management service contracts are effectively coordinated with the activities of other building services that have a bearing on pest activity, such as food service, landscaping, child care, waste management, and repairs and operations.</p> <p>Refer to <a href="#">GSA’s IPM definition</a>, <a href="#">EPA’s IMP resources</a>, and <a href="#">GSA’s SFTool Pest Management resources</a> for additional program guidance.</p>			
EB Criteria 4.9	Occupant Health and Wellness	NON-CORE	
		(Std)	
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	<p>Evaluate the feasibility of implementing occupant health and wellness efforts and promote two or more strategies that are cost-effective and applicable to the building mission, or, if applicable, ensure continuation of already existing programs and efforts.</p> <p>Agencies are encouraged to assess and promote universally accepted workplace occupant health and wellness strategies most appropriate to their building and mission. Agencies should refer to <a href="#">GSA’s SFTool</a> for additional strategies and guidance on health and wellness in Federal facilities.</p> <p>Examples of common health and wellness strategies include, but are not limited to:</p> <ol style="list-style-type: none"> <li>1) Implementing biophilic design strategies that connect a majority of interior spaces with nature, using views, finishes, plants, daylighting, outdoor access, or other strategies;</li> <li>2) Providing healthy dining options (in the building or on campus) that support offering a variety of fresh food options for occupants, following the <a href="#">U.S Department of Health and Human Services (HHS) / GSA Health and Sustainability Guidelines for Federal Concessions and Vending Operations</a>, where appropriate;</li> <li>3) Designing stairwells as a desirable option for circulation to support active occupants;</li> <li>4) Implementing a fitness program, including constructing or providing access to a fitness center or multi-use space for exercise in the building, on-site, or on campus;</li> <li>5) Installing bicycle parking with safe, secure storage;</li> <li>6) Providing adjustable-height desks or computer risers for 25% of the regular occupied spaces; and</li> <li>7) Providing water bottle-refilling stations and establish a process to test water quality annually and ensure proper maintenance of the stations. Refer to <a href="#">EPA’s Drinking Water resources</a> for additional guidelines.</li> </ol>		
<b>Option 2</b>	<p>Complete section 2 (Health, Comfort and Performance) of <a href="#">GSA’s Total Workplace Scorecard</a> in its entirety.</p>		
<b>Option 3</b>	<p>Achieve certification utilizing any <a href="#">Health &amp; Wellness Standards and Rating System</a> identified by GSA, under its authorities per <a href="#">42 U.S.C. § 17092</a>.</p>		



<b>5.0 - Reduce the Environmental Impact of Materials</b>			
<b>EB Criteria 5.1</b>	<b>Materials - Recycled Content</b>		<b>CORE</b>
			(S) [C/I]
Verify that a policy or procedures are in place to procure and use Resource Conservation and Recovery Act (RCRA) section 6002 compliant products, which meet or exceed <a href="#">EPA's Comprehensive Procurement Guideline Program</a> , which provides recycled content recommendations, for operations and maintenance, in accordance with <a href="#">42 U.S.C. § 6962</a> et seq.			
<b>EB Criteria 5.2</b>	<b>Materials - Biobased Content</b>		<b>CORE</b>
			(S) [C/I]
Verify that a policy or procedures are in place to procure and use <a href="#">USDA BioPreferred</a> products, which are designated products with the highest biobased content level per USDA's recommendations, in accordance with <a href="#">7 U.S.C. § 8102</a> .			
<b>EB Criteria 5.3</b>	<b>Products</b>		<b>NON-CORE</b>
			(Std) [C/I]
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	Verify that a policy or procedures are in place to procure and use products recommended under <a href="#">EPA's Recommendations of Specifications, Standards, and Ecolabels for Federal Purchasing</a> , as appropriate and applicable.		
<b>Option 2</b>	<b>For buildings with renovation projects</b> , conform to 2018 IgCC <a href="#">Section 901.4.1.4 (9.4.1.4) Multiple-Attribute Product Declaration or Certification</a> .		
<b>EB Criteria 5.4</b>	<b>Ozone Depleting Substances</b>		<b>CORE</b>
			(S) [C/I]
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	Verify that a policy or procedures are in place to procure and use safe alternatives for ozone depleting substances, in accordance with <a href="#">42 U.S.C. § 7671k</a> and <a href="#">42 U.S.C. § 7671l</a> . Maximize the use of safe alternatives, where <a href="#">EPA's Significant New Alternative Policy (SNAP)</a> Program has identified acceptable substitutes and alternatives.  Refer to EPA's SNAP regulations, 40 CFR part 82, which list substitutes that have been determined unacceptable, acceptable to use conditions, and acceptable subject to narrowed use limits.		
<b>Option 2</b>	For buildings with renovation projects, conform to 2018 IgCC <a href="#">Section 901.3.3 (9.3.3) Refrigerants</a> .		

EB Criteria 5.5	Hazardous Waste	CORE	
		(S)	
<p>Verify that a program or procedures are in place to ensure compliance with all relevant hazardous waste construction or operational activities that are covered by the Resource Conservation and Recovery Act (RCRA) subtitle C and subtitle I and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), per <a href="#">42 U.S.C. § 9601</a> et seq. and its implementing regulations at <a href="#">40 CFR Parts 239-282</a>.</p> <p>This criterion is achieved if it can be demonstrated that the building has a program and procedure in place to manage hazardous waste or does not generate, store, treat, or dispose of hazardous waste. (40 CFR §§ 260.10 and 261.3)</p>			
EB Criteria 5.6	Solid Waste Management	NON-CORE	
		(Std)	[C/I]
<p>Verify a waste management and recycling policy, program, or procedures are in place.</p>			
<b>AND CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	<p>Conduct an analysis or verify one has been done of non-hazardous, non-construction waste and develop a waste management plan or industry equivalent to increase waste diversion rate. Include in or ensure that the plan estimates waste types and amounts as well as goals for waste diversion to minimize waste sent to landfill.</p>		
<b>Option 2</b>	<p>Where markets exist, ensure diversion of at least 50 percent of non-hazardous and non-construction related materials from landfill and non-energy generating incineration, in alignment with <a href="#">EPA's Waste Management Hierarchy</a>.</p>		
<b>Option 3</b>	<p>Conform to 2018 IgCC <a href="#">Section 901.3.4 (9.3.4) Areas for Storage and Collection of Recyclables and Discarded Goods</a>.</p>		
<b>Option 4</b>	<p>For buildings with renovation projects, develop and implement a construction and demolition waste management plan for construction projects. Where markets exist, divert at least 50 percent of construction and demolition materials from landfill and non-energy generating incineration, in alignment with <a href="#">EPA's Waste Management Hierarchy</a>.</p>		

6.0 - Assess and Consider Building Resilience			
EB Criteria 6.1	Risk Assessment	NON-CORE	
		S*	[C/I]
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	<p>Ensure the following are or have been incorporated into a site and facility risk assessment, where appropriate:</p> <ol style="list-style-type: none"> <li>1. Assess long-term mission critical functions over the intended service life by incorporating considerations such as mission needs, building functions, occupants, and operations. Consider impacts to the surrounding community and to building operational needs.</li> <li>2. Assess the localized risks to the operational life of the building which involves identifying hazards, threats, vulnerabilities, and consequences. During the hazard identification step, identify and review any known observed and expected long-term weather and geographic hazards to inform and enhance the resilience of the building design and/or operations.</li> <li>3. Assess relevant stressors that could exacerbate hazards and risks to the building and operations, and factor in if their frequency is increasing, remaining the same, or decreasing in the specific region.</li> <li>4. As part of any future portfolio planning, consider the potential for any adaptive capacity of the building and operations to cope with shocks, stressors, or ability to adjust to new situations.</li> <li>5. Evaluate and incorporate, as applicable, a comprehensive energy and water infrastructure assessment to ensure resilience and investigate alternative energy sources to serve as back-up power.</li> </ol>		
<b>Option 2</b>	<p>Ensure that the building, as well as any planned mission critical activities housed in the building, have been evaluated and integrated as part of a recent agency, facility, installation, or campus resilience or adaptation assessment. This can include any other resilience and adaptation assessment activities associated with Installation Master Plans, climate adaptation plans, or equivalent agency, installation, or campus resilience or adaptation plans.</p>		
<b>Option 3</b>	<p>Utilize available Federal climate resilience planning tools to complete an assessment to inform decision making for the building project.</p> <p>Available tools include the <a href="#">U.S. Climate Resilience Toolkit</a>, the <a href="#">Naval Facilities Engineering Command's Climate Change Installation Adaptation and Resilience Planning Handbook</a>, the <a href="#">NIST Community Resilience Planning Guide for Buildings and Infrastructure Systems</a>, the <a href="#">NIST EDGe\$ (Economic Decision Guide Software) Online Tool</a>, the <a href="#">U.S. Army Corps of Engineers climate preparedness and resilience planning tools</a>, the U.S. Department of the Army's <a href="#">Climate Assessment Tool</a> and <a href="#">Climate Resilience Handbook</a>, FEMP's <a href="#">Technical Resilience Navigator</a>, or any other Federal agency-developed climate resilience or adaptation planning tools that become available.</p>		

EB Criteria 6.2	Building Resilience and Adaptation	NON-CORE	
		S*	[C/I]
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	Utilize any current building or portfolio risk assessments to determine and prioritize which parameters have been or can be incorporated into the site or facility operations or planned renovation project to ensure resilient building design or operations over the intended service life, considering mission criticality, cost, and security. Consider, in the operation plans of the building, campus, or installation, the resilience and adaptive capacity of the building to cope with stressors and mitigate based on mission criticality and cost. Implement no cost and life cycle cost-effective climate resilience measures, where feasible. Consider the level of passive survivability and functionality during emergencies and integrate any applicable strategies into plans.		
<b>Option 2</b>	Implement or verify past implementation of applicable cost-effective strategies identified through an agency developed resilience or adaptation plan or any other Federal agency developed climate resilience or risk assessment planning tools. (For examples of available tools, refer to criteria 6.1.)		

## Appendix C

### Assessing a New Construction, Modernization, Major Renovation or Existing Building Using

### Third-Party Building Certification Systems

As directed in the [E.O. 13834 Implementing Instructions](#), the U.S. General Services Administration (GSA) has identified and recommended third-party building certification systems for qualifying sustainable Federal buildings for the purposes of meeting the policy outlined in this Guidance and in accordance with its authority under [42 U.S.C. § 17092\(c\)](#). The independent and public review process used by GSA in developing its recommendations is provided in [GSA’s High-Performance Building Certification System Review Findings Report](#).

If agencies choose to use a third-party certification system to qualify their buildings as a sustainable Federal buildings, as provided by [E.O. 13834 Implementing Instructions](#), agencies should use the third-party certification systems and the version or later indicated below, and agencies should ensure that the chosen system meets the criteria in 10 CFR 433.300 and 435.300, as applicable.

<b>New Construction, Modernization and Major Renovations</b>	
<b>Agencies may qualify a new construction, modernization, or major renovations project as a sustainable Federal building by obtaining certification through one of the following third-party building certification systems, at the certification level indicated or higher.</b>	
<b>Option 1</b>	LEED® v4 for Building Design and Construction (BD+C): Silver
<b>Option 2</b>	Green Globes® for New Construction, version 2013: 2 Globes
<b>Existing Buildings</b>	
<b>Agencies may qualify an existing building as a sustainable Federal building by obtaining certification through one of the following third-party building certification systems, at the certification level indicated or higher.</b>	
<b>Option 1</b>	LEED v4 for Building Operations and Maintenance (O+M): Silver
<b>Option 2</b>	Green Globes for Existing Buildings (EB), version 2013: 2 Globes
<b>Option 3</b>	BOMA BEST® Sustainable Buildings, version 3.0: Silver
<b>Option 4</b>	BOMA 360 Performance Program® for Office Buildings: Designation
<b>Option 5</b>	BREEAM® In-Use USA, version 2016: 2 star
<b>Option 6</b>	Living Building Challenge (LBCTM), version 3.1: Certification

#### Statutory Alignment:

The Guiding Principles and associated criteria include references to statutory and regulatory requirements, many of which are not specifically referenced in third-party certification systems. If an agency chooses to utilize a third-party system for the purposes of qualifying and reporting a building as a sustainable Federal building, it must also ensure that all building-level statutory and regulatory requirements are met.

GSA has developed resources to assist agencies in identifying specific credits within each third-party system that may align with meeting various statutory and regulatory requirements, as referenced in the Guidance. These GSA resources are provided for informational purposes; agencies remain responsible for ensuring that meeting the credits indicated also meet the relevant statutory and regulatory requirements. These additional resources can be found on [GSA’s SFTool: Guiding Principles for Sustainable Federal Buildings](#).

## Appendix D

### Assessing a Building Using the Guiding Principles for Sustainable Federal Buildings Reassessment Criteria Checklist

The Guiding Principles for Sustainable Federal Buildings Reassessment Criteria Checklist is a tool to evaluate whether a building previously identified as sustainable continues to meet the intent of the Guiding Principles. Agencies are to reassess buildings every four years using either the criteria in the table below, which aligns with the criteria in Appendix A and Appendix B, or by re-certification using a third-party system listed in Appendix C. Agencies are encouraged to streamline and incorporate applicable reassessment activities into campus management and operations plans, planned building EISA energy and water evaluations, and on-going building maintenance procedures.

#### Reassessing using Appendix D:

**For buildings assessed using the 2016 or 2020 versions:** Agencies should reevaluate all criteria used to initially qualify the building as meeting the Guiding Principles, and confirm that the building continues to meet all of the 12 core criteria applicable to the building and at least 50 percent (9 of 18) of the non-core criteria originally met and identified in this appendix. To accommodate changes to the building, agencies can “swap” non-core criteria, choosing non-core criteria not originally met.

**For buildings assessed using the 2006 or 2008 versions:** Agencies should reevaluate all criteria used to initially qualify the building as meeting the Guiding Principles, and confirm that the building continues to meet all of the 12 core criteria applicable to the building and as many of the non-core criteria identified in this appendix that are potentially relevant or applicable. There is no minimum number of non-core criteria that must be met.

In order to continue reporting a building as a sustainable Federal building, the agency should reassess the building as an existing building, using either the Reassessment checklist (Appendix D) or a third-party certification system (Appendix C) every four years. If upon reassessment the agency determines that the building’s inherent function, mission, safety, or designation prevents it from meeting in a life cycle cost-effective manner the minimum thresholds outlined above, the building is no longer considered a high-performance sustainable Federal building because it does not meet the policy outlined in this Guidance. However, the agency can continue to report the building as a Federal high-performance building, so long it continues to meet all criteria that are life cycle cost-effective.

#### Reassessing using Third-Party Systems:

Agencies should maintain the certification using the third-party systems referenced in Appendix C, at the specified level or higher. Agencies should follow the certifying organization’s protocols for re-certification as and when required by the organization. Agencies remain responsible for ensuring all buildings that were certified using third-party systems continue to comply with ongoing statutory requirements where they apply.

#### REFERENCE KEY

<b>S</b>	Criteria that are based on and reference statutory or regulatory requirements are indicated with “S” on the checklist. “S*” indicates an NDAA aligned criterion that is applicable to the Department of Defense (DoD).
<b>Std</b>	Criteria that are based on green building industry standards, rather than statutory or regulatory requirements, are indicated with “Std” on the checklist.
<b>[C/I]</b>	Criteria where campus-wide or installation-wide protocols, policies, contracts can be used to demonstrate, upon assessment, that the criteria were met at the building level are indicated on the checklist with a [C/I].

1.0 - Employ Integrated Design Principles			
<b>Reassessment Criteria 1.1:</b>	<b>Integrated Design and Management</b>	<b>CORE</b>	
		(Std)	
Assess that the building's Operations and Maintenance procedures are in place and continue to be utilized. Ensure, as applicable, energy, water, materials, indoor environmental quality, recycling and composting, and occupant health and wellness continue to be utilized, as applicable to the building's function and mission.			
<b>Reassessment Criteria 1.2</b>	<b>Sustainable Siting</b>	<b>NON-CORE</b>	
		(S)	[C/I]
Review building operations and ensure they continue to not adversely impact any natural resources on or adjacent to the site. Assess any relevant opportunities for enhancements to the site sustainability and continue to engage building occupants and implement any identified enhancements to optimize the site, as feasible and applicable. Where applicable, ensure that measures to enhance the sustainability of an historic property continue to be implemented in a manner that preserves the property's historic character.			
<b>Reassessment Criteria 1.3</b>	<b>Stormwater Management</b>	<b>NON-CORE</b>	
		(S)	[C/I]
Confirm that the building, campus, or installation maintains strategies that reduce stormwater runoff and discharges offsite.			
<b>Reassessment Criteria 1.4</b>	<b>Infrastructure Utilization and Optimization</b>	<b>NON-CORE</b>	
		(Std)	[C/I]
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	Confirm that any utilized strategies, policies, or programs for encouraging public transit and alternative commuting remain in place, such as cycling, walkability, and transit incentives. If applicable, ensure parking for alternative fuel vehicles and alternative fueling stations or electric charging infrastructure are still accessible.		
<b>Option 2</b>	Ensure the building conforms to or exceeds 2018 IGCC <a href="#">Section 1001.3.2.4 (10.3.2.4) Transportation Management Plan</a> and <a href="#">Section 501.3.7.3 (5.3.7.3) Site Vehicle Provisions</a> .		
<b>Reassessment Criteria 1.5</b>	<b>Commissioning</b>	<b>CORE</b>	
		(S)	
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	<b>For a building identified as a "covered facility" (42 U.S.C. § 8253(f)(2)(B)):</b> Ensure compliance with <a href="#">42 U.S.C. § 8253(f)(3)(B)</a> to identify and assess recommissioning measures for the facility, in accordance with U.S. Department of Energy's (DOE) Federal Energy Management Program's (FEMP) <a href="#">Commissioning for Federal Facilities</a> guidance.		
<b>Option 2</b>	<b>For a building not identified as a "covered facility" (42 U.S.C. § 8253(f)(2)(B)):</b> assess the building for significant changes in building operations or building performance that would require recommissioning per agency policy, or follow FEMP's commissioning best practices. If changes occurred, perform recommissioning in accordance with FEMP's <a href="#">Commissioning for Federal Facilities</a> guidance.		
<b>Option 3</b>	Perform ongoing commissioning in accordance with FEMP's <a href="#">Commissioning for Federal Facilities</a> guidance. For covered facilities, ensure compliance with all statutory reporting requirements, per <a href="#">42 U.S.C. § 8253(f)(3)(B)</a> , when using on-going commissioning.		

<b>2.0 Optimize Energy Performance</b>				
Reassessment Criteria 2.1	<b>Energy Efficiency</b>		<b>CORE</b>	
			(S)	
<p>Confirm incorporation of energy-efficiency criteria consistent with statutory requirements for procurement of <a href="#">ENERGY STAR</a> and <a href="#">FEMP-designated products</a>.</p> <p>Confirm incorporation of strategies to improve energy performance and reduce energy usage in accordance with 42 U.S.C. § 8253(a).</p>				
<b>AND ONE OF THE FOLLOWING OPTIONS:</b>				
<b>Option 1</b>	<p>Verify that the building energy use is 20 percent below a FY 2015 energy use baseline (from meter readings or engineering estimates).</p> <p>If baseline year data is not available or reliable, data from the earliest post-baseline year that is available and reliable may be used.</p>			
<b>Option 2</b>	<p>Verify that the building energy use is 30 percent below a FY 2003 energy use baseline (from meter readings or engineering estimates).</p> <p>If baseline year data is not available or reliable, data from the earliest post-baseline year that is available and reliable may be used.</p>			
<b>Option 3</b>	<p>Verify that the building has an <a href="#">ENERGY STAR</a> score of 75 or higher.</p>			
<b>Option 4</b>	<p>For building types not eligible to receive an <a href="#">ENERGY STAR</a> score and where adequate benchmarking data exists, demonstrate that the building is in the top quartile of energy performance for its building type.</p>			
<b>Option 5</b>	<p>Verify the building continues to comply with Federal design energy performance requirements established under <a href="#">10 CFR parts 433, subpart A</a>, and <a href="#">10 CFR parts 435, subpart A</a>, plus allowance for plug load to reflect actual use.</p>			
Reassessment Criteria 2.2	<b>Energy Metering</b>		<b>CORE</b>	
			(S)	
<p>Where utilized, confirm that all appropriate standard and advanced meters are still in place and operating correctly based on application of DOE's <a href="#">Federal Building Metering Guidance</a> per <a href="#">42 U.S.C § 8253(e)</a>.</p> <p>In a case where shared infrastructure for a facility is served by one meter, ensure the energy use of the building can still be tracked and evaluated using engineering energy estimates based on the size, function, and complexity of the building.</p>				



<b>Reassessment Criteria 2.3</b>		<b>Renewable Energy</b>		<b>NON-CORE</b>	
				(S)	[C/I]
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>					
<b>Option 1</b>	Confirm any installed on-site renewable energy systems or alternative energy systems continue to operate as designed.				
<b>Option 2</b>	As provided for in section III.A.2 of the E.O. 13834 Implementing Instructions, if on-site renewable energy was not installed, ensure purchases of power from offsite renewable sources or renewable energy certificates (RECs) continue and are apportioned to the building, in alignment with agency plans.				
<b>Reassessment Criteria 2.4</b>		<b>Benchmarking</b>		<b>CORE</b>	
				(S)	
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>					
<b>Option 1</b>	<p><b>For a building identified as a “covered facility” (<a href="#">42 U.S.C. § 8253(f)(2)(B)</a>):</b>                  Confirm annual benchmarking is occurring, preferably using ENERGY STAR Portfolio Manager, in accordance with DOE’s <a href="#">Federal Building Energy Use Benchmarking Guidance</a> per <a href="#">42 U.S.C. § 8253(f)(8)</a>.</p>				
<b>Option 2</b>	<p><b>For a building not identified as a “covered facility” (<a href="#">42 U.S.C. § 8253(f)(2)(B)</a>):</b>                  Confirm the building continues to be benchmarked using a system consistent with agency policy, including alternative benchmarking systems and strategies not subject to public disclosure, if applicable.</p>				
<b>Option 3</b>	Ensure the building still conforms to or exceeds 2018 IgCC <a href="#">Section 1001.3.2.1.3.2 (10.3.2.1.3.2) Track and Assess Energy Consumption, b. Track Energy Performance</a> .				

<b>3.0 - Protect and Conserve Water</b>			
Reassessment Criteria <b>3.1</b>	<b>Indoor Water Use</b>	CORE	
		(S)	
Confirm that strategies are employed to minimize water use and that policies and procedures are in place for purchase of water efficient products. Agencies should refer to <a href="#">EPA's WaterSense</a> , <a href="#">GSA's SFTool - Water</a> , and <a href="#">DOE-FEMP's Water Efficiency in Federal Buildings and Campuses</a> resources for additional details on available water conservation technologies and best management practices.			
<b>AND ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	Verify that water use is 20 percent below a FY 2007 water use baseline (from meter readings or engineering estimates).		
<b>Option 2</b>	Verify analysis showing at least a 20 percent reduction when comparing installed fixture performance to a base case representing the code-minimum, using the <a href="#">FEMP Water Evaluation Data Tool</a> or other fixture performance calculator.		
<b>Option 3</b>	Confirm or implement a strategic water management plan in accordance with <a href="#">FEMP's Best Management Practices (BMPs) for Water Efficiency</a> .		
Reassessment Criteria <b>3.2</b>	<b>Water Metering</b>	NON-CORE	
		(Std)	
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	Where utilized, confirm that building-level meters are still in place and operational. In a case where shared infrastructure for a facility is served by one meter, ensure the water use of the building can still be tracked and evaluated using engineering energy estimates based on the size, function, and complexity of the building.		
<b>Option 2</b>	Ensure the building still conforms to or exceeds 2018 IgCC <a href="#">Section 601.3.4.1 (6.3.4.1) Consumption Management</a> .		
Reassessment Criteria <b>3.3</b>	<b>Outdoor Water Use</b>	NON-CORE	
		(Std)	[C/I]
Confirm health and status of water efficient landscapes and replace where needed.			
<b>AND ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	Confirm irrigation system meters, where utilized, are still in place and operating correctly. Verify potable water use is still at or less than the planned amount.		
<b>Option 2</b>	Where xeriscaping techniques were used, confirm that no potable water is being used for irrigation, beyond re-establishment of lost plantings.		
<b>Option 3</b>	Ensure the building still conforms to 2018 IgCC <a href="#">Section 601.3.1.1 (6.3.1.1) Landscape Design</a> . If irrigation is used, conform to <a href="#">Section 601.3.1.2 (6.3.1.2) Irrigation</a> .		
Reassessment Criteria <b>3.4</b>	<b>Alternative Water</b>	NON-CORE	
		(Std)	[C/I]
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	Confirm that onsite alternative water systems continue to operate as designed.		
<b>Option 2</b>	Confirm continued use of alternative sources of water that conform to the 2018 IgCC <a href="#">Definitions of Water, Alternative on-site sources</a> .		

<b>4.0 - Enhance the Indoor Environment</b>			
<b>Reassessment Criteria 4.1</b>	<b>Ventilation and Thermal Comfort</b>	<b>CORE</b>	
		(S)	
<p>Confirm indoor air quality remains consistent with the levels determined at the previous evaluation.</p> <p>Ensure that actions are being taken to maintain or improve ventilation and thermal comfort, such as the collection of occupant feedback where feasible.</p>			
<b>Reassessment Criteria 4.2</b>	<b>Daylighting and Lighting Controls</b>	<b>NON-CORE</b>	
		(S)	
<p>Confirm all minimum illumination levels, lighting controls, daylighting, and glare control devices are operating correctly, based on occupant feedback or evaluations.</p> <p>Ensure any circadian-effective lighting installed is still in operation and utilized.</p>			
<b>Reassessment Criteria 4.3</b>	<b>Low-Emitting Materials and Products</b>	<b>NON-CORE</b>	
		(Std)	[C/I]
<p>Confirm the building continues to comply with all policies and procedures to utilize low-emitting materials and products.</p>			
<b>Reassessment Criteria 4.4</b>	<b>Radon Mitigation</b>	<b>NON-CORE</b>	
		(S)	
<p>Confirm all radon mitigation equipment and measures utilized are still in place and operational.</p> <p>No action needed if not utilized or no elevated radon was detected.</p>			
<b>Reassessment Criteria 4.5</b>	<b>Moisture and Mold Control</b>	<b>NON-CORE</b>	
		(Std)	
<p>Confirm that a moisture control and mitigation strategy is still in place for controlling moisture flows and condensation to prevent building damage, minimizing mold contamination, and reducing health risks related to moisture.</p>			
<b>Reassessment Criteria 4.6</b>	<b>Indoor Air Quality during Construction</b>	<b>NON-CORE</b>	
		(Std)	
<i>No action required for reassessment</i>			
<b>Reassessment Criteria 4.7</b>	<b>Environmental Smoking Control</b>	<b>CORE</b>	
		(S)	[C/I]
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	<p>Confirm that smoking in any form continues to be prohibited inside and within 25 feet of all building entrances, operable windows, and building ventilation intakes. Confirm that signage is still installed as appropriate.</p>		
<b>Option 2</b>	<p>Ensure the building still conforms to or exceeds 2018 IgCC <a href="#">Section 801.3.1.7 (8.3.1.7) Environmental Tobacco Smoke</a>.</p>		

Reassessment Criteria 4.8		Integrated Pest Management	NON-CORE	
			(S)	[C/I]
Confirm all building or campus/installation-level integrated pest management (IPM) practices are still in use, as applicable. Refer to <a href="#">GSA's IPM definition</a> , <a href="#">EPA's IPM resources</a> , and <a href="#">GSA's SFTool Pest Management resources</a> for additional program guidance.				
Reassessment Criteria 4.9		Occupant Health and Wellness	NON-CORE	
			(Std)	
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>				
<b>Option 1</b>	Confirm health and wellness opportunities provided to occupants are still accessible and operational.			
	Incorporate, as applicable, feedback from occupants on needed updates or revisions to health and wellness opportunities. Agencies can and are encouraged to re-evaluate opportunities and add or change as needed. Agencies should refer to <a href="#">GSA's SFTool: Buildings and Health</a> for additional strategies and guidance on health and wellness in Federal facilities.			
<b>Option 2</b>	Confirm that any previously obtained certification from a <a href="#">Health &amp; Wellness Standard and Rating System</a> identified by GSA is maintained and the building continues to follow ongoing requirements.			

<b>5.0 - Reduce the Environmental Impact of Materials</b>			
<b>Reassessment Criteria 5.1</b>	<b>Materials - Recycled Content</b>		<b>CORE</b>
			(S) [C/I]
Confirm a product purchasing policy or procedures covering recycled content are still in place. Evaluate product procurement and identify opportunities for improvement, if applicable.			
<b>Reassessment Criteria 5.2</b>	<b>Materials - Biobased Content</b>		<b>CORE</b>
			(S) [C/I]
Confirm a product purchasing policy or procedures covering biobased content are still in place. Evaluate product procurement and identify opportunities for improvement, if applicable.			
<b>Reassessment Criteria 5.3</b>	<b>Products</b>		<b>NON-CORE</b>
			(Std) [C/I]
Confirm a product purchasing policy or procedures covering relevant EPA-recommended products are still in place. Evaluate product procurement and identify opportunities for improvement, if applicable.			
<b>Reassessment Criteria 5.4</b>	<b>Ozone Depleting Substances</b>		<b>CORE</b>
			(S) [C/I]
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	Confirm a product purchasing policy or procedures are in place to ensure compliance. Evaluate product procurement and identify opportunities for improvement, if applicable.		
<b>Option 2</b>	Ensure building still conforms to or exceeds IgCC <a href="#">Section 901.3.3 (9.3.3) Refrigerants</a> .		
<b>Reassessment Criteria 5.5</b>	<b>Hazardous Waste</b>		<b>CORE</b>
			(S)
Confirm that building-level or campus/installation-level programs or procedures are still in place to ensure compliance with all relevant hazardous waste requirements.			
<b>Reassessment Criteria 5.6</b>	<b>Solid Waste Management</b>		<b>NON-CORE</b>
			(Std) [C/I]
Confirm that a waste management and recycling policy, program, or procedures are in place.			
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	Verify waste diversion rate continues to meet or exceed original planned levels of diversion, taking into account any changes in mission, building function, or recycling markets.		
<b>Option 2</b>	Conduct an analysis of non-hazardous non-construction waste and develop or update an existing waste management plan or industry equivalent to increase waste diversion rate.		

<b>6.0 - Assess and Consider Building Resilience</b>			
<b>Reassessment Criteria 6.1</b>	<b>Risk Assessment</b>	<b>NON-CORE</b>	
		<b>S*</b>	<b>[C/I]</b>
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	Confirm whether there have been changes to long-term mission criticality of the physical asset and operations to be housed in the facility. Where applicable, evaluate if those changes impact any results from the original risk assessment. Ensure updates to relevant predicted impacts are incorporated, and adjust plans as necessary based on mission criticality and cost.		
<b>Option 2</b>	Confirm that the building, as well as any planned mission critical activities housed in the building, have been evaluated and integrated as part of a recent agency, facility, installation, or campus resilience or adaptation assessment. This can include any other resilience and adaptation assessment activities associated with Installation Master Plans, climate adaptation plans, or equivalent agency, installation, or campus resilience or adaptation plans.		
<b>Reassessment Criteria 6.2</b>	<b>Building Resilience and Adaptation</b>	<b>NON-CORE</b>	
		<b>S*</b>	<b>[C/I]</b>
<b>CHOOSE ONE OF THE FOLLOWING OPTIONS:</b>			
<b>Option 1</b>	Confirm and monitor implemented resilience measures and systems to assess effectiveness of planned climate resilience strategies.		
<b>Option 2</b>	Continue to implement or verify past implementation of applicable cost-effective strategies identified through an agency developed resilience or adaptation plan or any other Federal agency developed climate resilience or risk assessment planning tools. (For examples of available tools, refer to criteria 6.1 in Appendix A or B.)		

## Appendix E

### Sustainable Federal Buildings Reporting Instructions

#### Reporting:

Agencies must report annually on sustainable Federal building status in GSA’s real property database, the [Federal Real Property Profile Management System \(FRPP MS\)](#), pursuant to [40 U.S.C. § 524\(a\)\(11\)\(B\)\(vii\)](#). Detailed instructions are issued annually by GSA in the [FRPP MS Data Dictionary](#).

Agencies should report buildings that meet the minimum criteria outlined in the *Guiding Principles for Sustainable Federal Buildings and Associated Instructions* as sustainable (YES) in the FRPP.

To assist agencies in tracking progress metrics on sustainable Federal buildings and project future progress based on planned or expected changes to the building portfolios, agencies can utilize DOE-FEMP’s Federal Sustainable Buildings Progress Calculator tool.

#### Assessment Pathways:

Agencies may qualify buildings, including new construction, modernization projects, and existing buildings, as meeting the Guiding Principles using one of the following:

1. Guiding Principles for Sustainable Federal Buildings Checklist (see Appendices A, B, and D).
2. Third-party building certifications systems or standards identified by GSA’s Office of Federal High-Performance Buildings (see Appendix C).

#### Applicability:

Agencies must report sustainability status if the building meets the following conditions:

- Federally owned;
- Equal to or greater than 10,000 gross square feet (GSF);
- Located in the United States or its territories; and
- Legal interest of owned (G) or museum trust (M).

#### Not Applicable Buildings:

A building is considered **NOT APPLICABLE (N/A)** for the purposes of FRPP reporting of sustainable Federal buildings if it meets **any** of the following conditions:

- Non-building asset;
- Located outside the United States or its territories; or
- Slated for disposal (as a status indicator of report of excess (ROE) submitted, ROE accepted, Determination to Dispose, or Surplus).

Or it meets **all** of the following conditions:

- Unoccupied: The building is occupied one hour or less per person per day on average;
- Low/No Energy Use: Total energy consumption from all sources is less than 12.7 kBtu/GSF/year; and
- Low/No Water Use: Water consumption is less than two gallons per day on average.

## Appendix F Definitions

<b>Alternative Water</b>	Alternative water is water from non-freshwater sources, such as on-site harvested rainwater and stormwater, harvested sump pump/foundation water, gray water, air-cooling condensate, reject water from water purification systems, reclaimed wastewater, or water derived from other water reuse strategies. <a href="#">E.O. 13834 Implementing Instructions.</a>
<b>ASHRAE</b>	A global professional society focused on building systems, energy efficiency, indoor air quality, refrigeration, and sustainability within the building industry through research, standards writing, publishing, and continuing education. ASHRAE was formed as the American Society of Heating, Refrigerating and Air-Conditioning Engineers by the merger in 1959 of American Society of Heating and Air-Conditioning Engineers (ASHAE) and The American Society of Refrigerating Engineers (ASRE). See <a href="#">ASHRAE, About.</a>
<b>Basis of Design (BOD)</b>	Documentation of the major thought processes and assumptions behind design decisions based on the owner’s project requirements. Can be the primary document that translates the agency’s needs into building components such as heating ventilating and air conditioning (HVAC) systems, building envelope, security systems, or building automation system; or, a document that records the concepts, calculations, decisions, and product selections used to meet the owner’s project requirements and to satisfy applicable regulatory requirements, standards, and guidelines. The BOD includes both narrative descriptions and lists of individual items that support the design process. See <a href="#">U.S. General Services Administration, Review Owner Project Requirements and Basis of Design.</a>
<b>Biophilia / Biophilic Design</b>	Biophilia addresses the human attraction to and desire to be in environments that have natural features including parks, gardens, street trees, bird feeders, flowers, big sky, and water elements. See <a href="#">U.S. General Services Administration, SFTool: Biophilia.</a>
<b>Building Automation System (BAS)</b>	An automatic control of a building’s HVAC, lighting, and other systems through a centralized building management system. See <a href="#">U.S. General Services Administration, 5.22 Building Automation Systems (BAS).</a>
<b>Charrette</b>	A collaborative planning or design session in which problems relating to a proposed project are discussed and solutions adopted in a limited time frame; or, an intensive workshop in which various stakeholders and experts are brought together to address a particular design issue. See <a href="#">National Institute of Building Sciences, Whole Building Design Guide: Planning and Conducting Integrated Design (ID) Charettes.</a>
<b>Commissioning (Retro and Re-commissioning)</b>	Systematic, quality assurance processes used in new construction or in existing buildings to verify that a building’s operating systems—mechanical, electrical, and HVAC—are designed, installed, and programmed for optimal performance or maintained and improved to enhance overall building performance. See <a href="#">U.S. Department of Energy Federal Energy Management Program (FEMP): Commissioning in Federal Buildings.</a>
<b>Conceptual Design Report (CDR)</b>	A document summarizing the concept of the proposed building design goals and mission objectives. See <a href="#">U.S. Department of Energy, Directives Program: Conceptual Design Report.</a>
<b>Energy Modeling</b>	Whole building simulation tool to model energy performance for new building design, using the Performance Rating Method found in Appendix G of ANSI/ASHRAE/IES Standard 90.1. See <a href="#">U.S. Department of Energy, About Building Energy Modeling.</a>



Guiding Principles for Sustainable Federal Buildings and Associated Instructions

<b>Federal Building</b>	A building (including a complete replacement of an existing building from the foundation up) to be constructed by, or for the use of, any Federal agency, including a building leased by a Federal agency and privatized military housing. <a href="#">42 U.S.C. § 6832(6)</a> .
<b>Federal Facility</b>	Any building, installation, structure, or other property (including any applicable fixtures) owned or operated by, or constructed or manufactured and leased to, the Federal Government. The term “facility” includes a group of facilities at a single location or multiple locations managed as an integrated operation and contractor-operated facilities owned by the Federal Government. The term “facility” does not include any land or site for which the cost of utilities is not paid by the Federal Government. <a href="#">42 U.S.C. § 8253</a>
<b>Green Building Certification System</b>	A type of building certification system that rates or rewards relative levels of compliance or performance with specific environmental goals and requirements. Rating systems and certification systems are frequently used interchangeably.  Green building rating and certification systems require an integrated design process to create projects that are environmentally responsible and resource-efficient throughout a building's life-cycle: from siting to design, construction, operation, maintenance, renovation, and demolition. See <a href="#">National Institute of Building Sciences, Whole Building Design Guide</a> : Introduction.
<b>High-Performance Building</b>	A building that integrates and optimizes on a life cycle basis all major high performance attributes, including energy conservation, environment, safety, security, durability, accessibility, cost-benefit, productivity, sustainability, functionality, and operational considerations. <a href="#">42 U.S.C. § 17061(12)</a>
<b>High-Performance Green Building</b>	A high-performance building that, during its life-cycle, as compared with similar buildings (as measured by Commercial Buildings Energy Consumption Survey or Residential Energy Consumption Survey data from the Energy Information Agency)— (A) reduces energy, water, and material resource use; (B) improves indoor environmental quality, including reducing indoor pollution, improving thermal comfort, and improving lighting and acoustic environments that affect occupant health and productivity; (C) reduces negative impacts on the environment throughout the life-cycle of the building, including air and water pollution and waste generation; (D) increases the use of environmentally preferable products, including biobased, recycled content, and nontoxic products with lower life-cycle impacts; (E) increases reuse and recycling opportunities; (F) integrates systems in the building; (G) reduces the environmental and energy impacts of transportation through building location and site design that support a full range of transportation choices for users of the building; and (H) considers indoor and outdoor effects of the building on human health and the environment, including— (i) improvements in worker productivity; (ii) the life-cycle impacts of building materials and operations; and (iii) other factors that the Federal Director or the Commercial Director consider to be appropriate. <a href="#">42 U.S.C. § 17061(13)</a>
<b>Historic property</b>	Any prehistoric or historic district, site, building, structure, or object included on, or eligible for inclusion on, the National Register [of Historic Places], including artifacts, records, and material remains relating to the district, site, building, structure, or object. <a href="#">54 U.S.C. § 300308</a>

<b>HVAC&amp;R systems</b>	Heating, ventilation, air conditioning, and refrigeration systems. See <a href="#">National Institute of Building Sciences, Whole Building Design Guide: Heating, Ventilating, Air-Conditioning, and Refrigerating Engineering.</a>
<b>Integrated Pest Management (IPM)</b>	A coordinated system of technological and management practices to control pests in a safe, environmentally sound, and economical manner. It is a process for minimizing pesticide use and risk while maximizing the control of pests that affect public health, impede operations, or damage property. See <a href="#">U.S. General Services Administration, Integrated Pest Management.</a>
<b>International Green Construction Code (IgCC)</b>	A model code to incorporate sustainability measures for a construction project and its site. It includes the technical requirements of ANSI/ASHRAE/ICC/USGBC/IES Standard 189.1, Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings. See <a href="#">International Green Construction Code.</a>
<b>Life Cycle Cost</b>	The total cost of owning, operating and maintaining a building over its useful life (including its fuel and water, energy, labor, and replacement components), determined on the basis of a systematic evaluation and comparison of alternative building systems, except that in the case of leased buildings, the life cycle cost shall be calculated over the effective remaining term of the lease. 10 CFR 436.11.  Procedures for the analysis and comparison of lifecycle cost is set out in subpart A of 10 CFR Part 436.
<b>Modernization</b>	The comprehensive replacement or restoration of virtually all major systems, interior finishes (such as ceilings, partitions, doors, and floor finishes), and building features. See generally <a href="#">U.S. General Services Administration, 8.5 Existing Construction Modernization.</a>
<b>New Federal Building</b>	A building to be constructed on a site that previously did not have a building or a complete replacement of an existing building from the foundation up, by, or for the use of, any Federal agency which is not legally subject to State or local building codes or similar requirements. <a href="#">10 CFR § 433.2</a>
<b>Owner’s Project Requirements (OPR)</b>	Documentation of requirements and expectations of how a building will function, including project goals, measurable performance criteria, cost considerations, benchmarks, success criteria, and supporting documentation to meet the designated purpose and mission. See <a href="#">U.S. General Services Administration, Define Owner’s Project Requirements with the Customer Agency.</a>
<b>Renewable Energy Certificates (RECs)</b>	Market-based instruments that represent the property rights to the environmental, social and other non-power attributes of renewable electricity generation. RECs represent the environmental attributes of one megawatt-hour (MWh) of electricity generated and delivered to the electricity grid from a renewable energy resource. See <a href="#">U.S. Environmental Protection Agency, Green Power Partnership: Renewable Energy Certificates (RECs).</a>
<b>Renovation</b>	For the purposes of this guidance, renovations are any project or activity that does not meet the definition of “modernization.”
<b>Xeriscaping</b>	A low-water landscaping practice that focuses on using native plants and little or no irrigation. See <a href="#">U.S. Environmental Protection Agency, Water-Smart Landscapes.</a>