

LEED v4 for Building Operations and Maintenance

Summary of changes from LEED 2009

LOCATION AND TRANSPORTATION		
Credit	Alternative Transportation	<ul style="list-style-type: none"> • Clarified credit requirements for transient occupants. • Added Option 1 to reward projects for conducting a survey. • Added Option 3 to reward projects for implementing an alternative transportation program.
SUSTAINABLE SITES		
Prerequisite	Site Management Policy	<ul style="list-style-type: none"> • New prerequisite. • Incorporates the policy requirements of Building Exterior and Hardscape Management Plan and Integrated Pest Management, Erosion Control and Landscape Management Plan credits. • Requires the creation and implementation of a policy addressing best site management practices to reduce chemical use, energy and water waste, air pollution, solid waste, and run-off.
Credit	LEED Certified Design and Construction	<ul style="list-style-type: none"> • Credit removed.
Credit	Building Exterior and Hardscape Management Plan	<ul style="list-style-type: none"> • Credit requirements moved to Site Management Policy prerequisite and Site Management credit. • Policy requirements moved to Site Management Policy prerequisite. • Plan implementation requirements moved to Site Management credit.
Credit	Integrated Pest Management, Erosion Control and Landscape Management Plan	<ul style="list-style-type: none"> • Credits moved to Site Management Policy prerequisite and Site Management credit. • Policy requirements moved to Site Management Policy prerequisite. • Erosion control and landscape management plan implementation requirements moved to Site Management credit. • Integrated Pest Management requirements moved to Integrated Pest Management credit in EQ category.
Credit	Site Development—Protect or Restore Habitat	<ul style="list-style-type: none"> • Increased the area requirement for native or adapted vegetation to 20% of the site including the building footprint with a minimum of 5,000 sq. ft. • Added off-site conservation option that requires financial support equal to at least \$0.05 per sq. ft. of project site area.
Credit	Rainwater Management	<ul style="list-style-type: none"> • Revised requirements to include site-specific criteria focusing on frequent, low-intensity events.
Credit	Heat Island Reduction	<ul style="list-style-type: none"> • Credit is a combination of Heat Island Reduction—Nonroof and Heat Island Reduction—Roof credits. • Changed paving materials metric to Solar Reflectance (SR). • Updated the roof SRI requirements. • Added 3-year aged SRI and SR values. • Added a weighted SRI average calculation methodology.
Credit	Light Pollution Reduction	<ul style="list-style-type: none"> • Removed the interior requirements. • Clarified the fixture shielding option.
Credit	Site Management	<ul style="list-style-type: none"> • Credit is a combination of Building Exterior and Hardscape Management Plan and Integrated Pest Management, Erosion Control and Landscape Management Plan credits. • Clarified requirements and added performance criteria. • Added options addressing environmentally sensitive site

		maintenance equipment.
Credit	Site Improvement Plan	<ul style="list-style-type: none"> • New credit that addresses the long term ecological health of the site. • Requires a five year site improvement plan addressing hydrology, vegetation, and soils.
Credit	Joint Use of Facilities (Schools)	<ul style="list-style-type: none"> • New credit for Schools taken from Building Design and Construction rating system. • Encourages shared use community spaces.
WATER EFFICIENCY		
Prerequisite	Indoor Water Use Reduction	<ul style="list-style-type: none"> • Changed title from Minimum Indoor Plumbing Fixture and Fitting Efficiency. • Changed baseline calculation date from 1993 to 1995. • Changed pre-1995 baseline from 160% of UPC/IPC to 150%. • Replaced economic assessment with replacement and retrofit policy purchasing plan requiring newly install fixtures and fittings to be WaterSense labeled if eligible. • Added appliance and process water requirements for retail, hospitality, and schools projects. • Added metering option.
Prerequisite	Building-Level Water Metering	<ul style="list-style-type: none"> • New prerequisite. • Requires permanently install whole building water meter. • Water usage data shared with USGBC.
Credit	Water Performance Measurement	<ul style="list-style-type: none"> • Whole building water meter requirements moved to Building-Level Water Metering prerequisite. • Submetering options moved to Water Metering credit.
Credit	Outdoor Water Use Reduction	<ul style="list-style-type: none"> • Changed title from Water Efficient Landscaping. • Reweighted from 5 to 2 points. • Changed referenced baseline to EPA WaterSense Water Budget Tool. • Added an option for projects with no irrigation required. • Added requirement to install an irrigation water meter if project has landscape water needs. • Reduced minimum threshold to 30% reduction.
Credit	Indoor Water Use Reduction	<ul style="list-style-type: none"> • Changed title from Additional Indoor Fixture and Fitting Efficiency. • Requires newly install fixtures and fittings and appliances to meet performance standards or be WaterSense labeled if eligible. • Added an option projects with metered fixtures and fittings.
Credit	Cooling Tower Water Use	<ul style="list-style-type: none"> • Revised to require a water analysis and encourage projects to maximize the number of cooling tower cycles.
Credit	Water Metering	<ul style="list-style-type: none"> • Incorporated submetering requirements of Water Performance Measurement credit, option 2.
ENERGY AND ATMOSPHERE		
Prerequisite	Energy Efficiency Best Management Practices	<ul style="list-style-type: none"> • No changes. • Added a path for data center projects to use the DOE DC Pro Profiling Tool.
Prerequisite	Minimum Energy Performance	<ul style="list-style-type: none"> • Credit title changed from Minimum Energy Efficiency Performance. • Increased minimum required Energy Star rating from 69 to 75 in Option 1, with corresponding changes in Option 2.
Prerequisite	Building-Level Energy Metering	<ul style="list-style-type: none"> • New prerequisite. • Requires energy meters capable of providing whole building energy use data. • Energy usage data shared with USGBC.

Prerequisite	Fundamental Refrigerant Management	<ul style="list-style-type: none"> Phase out plan required to be completed within 10 years
Credit	Existing Building Commissioning—Analysis	<ul style="list-style-type: none"> Modified to track closely with current facilities requirements and building operations and maintenance plan. Added requirement for data centers to use DOE's DC Pro Energy Assessment Tool.
Credit	Existing Building Commissioning – Implementation	<ul style="list-style-type: none"> Modified to track closely with current facilities requirements and building operations and maintenance plan.
Credit	Ongoing Commissioning	<ul style="list-style-type: none"> Modified to track closely with current facilities requirements and building operations and maintenance plan.
Credit	Optimize Energy Performance	<ul style="list-style-type: none"> Credit title changed from Optimize Energy Efficiency Performance. Adjusted point thresholds to reflect new minimum requirements in prerequisite.
Credit	Performance Measurement—Building Automation System	<ul style="list-style-type: none"> Credit requirements incorporated in Advanced Energy Metering credit.
Credit	Performance Measurement—System Level Metering	<ul style="list-style-type: none"> Credit requirements incorporated in Advanced Energy Metering credit.
Credit	Advanced Energy Metering	<ul style="list-style-type: none"> New credit. Incorporates the requirements of Performance Measurement—Building Automation System and Performance Measurement—System-Level Metering credits. Requires advanced meters for all whole-building energy sources used and end uses that represent 20% or more of the total annual consumption of the building.
Credit	Demand Response	<ul style="list-style-type: none"> New credit Option 1 requires projects to have the infrastructure necessary and/or participate in a demand response program. Option 2 requires projects to shift 10% of peak loads to off-peak hours.
Credit	Renewable Energy and Carbon Offsets	<ul style="list-style-type: none"> Credit titled changed from On-site and Off-site Renewable Energy. Reduced thresholds for on-site renewable energy.
Credit	Enhanced Refrigerant Management	<ul style="list-style-type: none"> Clarified requirements. Added retail requirements addressing commercial refrigeration systems.
Credit	Emissions Reduction Reporting	<ul style="list-style-type: none"> Credit removed.
MATERIALS AND RESOURCES		
Prerequisite	Sustainable Purchasing Policy	<ul style="list-style-type: none"> Prerequisite requirements moved to Ongoing Purchasing and Waste Policy.
Prerequisite	Solid Waste Management Policy	<ul style="list-style-type: none"> Prerequisite requirements moved to Ongoing Purchasing and Waste Policy.
Prerequisite	Ongoing Purchasing and Waste Policy	<ul style="list-style-type: none"> Incorporates requirements from Sustainable Purchasing Policy and Solid Waste Management Policy prerequisites. Clarified requirements. Requires waste stream audit every five years unless other requirements are met. Added requirement for minimum recyclables storage. Added requirement for retail projects to address environmentally responsible purchasing and waste through their supply chains.
Prerequisite	Facility Maintenance and	<ul style="list-style-type: none"> New prerequisite.

	Renovations Policy	<ul style="list-style-type: none"> • Incorporates the requirements of EQ credit Indoor Air Quality Best Management Practices—Indoor Air Quality Management for Facility Alterations and Additions. • Requires policies addressing purchasing, waste, and indoor air quality for ongoing maintenance and renovations.
Credit	Purchasing—Ongoing	<ul style="list-style-type: none"> • Credit title changed from Sustainable Purchasing—Ongoing Consumables. • Incorporates purchasing requirements for electronic equipment from the Sustainable Purchasing—Durable Goods credit. • Incorporates purchasing requirements for food from the Sustainable Purchasing—Food credit. • Modified criteria to align with MR section in Building Design and Construction rating systems.
Credit	Sustainable Purchasing—Durable Goods	<ul style="list-style-type: none"> • Credit requirements for purchasing of electronic equipment moved to Purchasing—Ongoing credit. • Credit requirements for purchasing of furniture moved to Purchasing—Facility Maintenance and Renovations
Credit	Purchasing—Lamps	<ul style="list-style-type: none"> • Credit tile changed from Sustainable Purchasing—Reduced Mercury in Lamps. • Threshold reduced from 90 to 70 picograms per lumen hour.
Credit	Purchasing—Facility Maintenance and Renovations	<ul style="list-style-type: none"> • Credit title changed from Sustainable Purchasing—Facility Alterations and Additions. • Incorporates purchasing requirements for furniture from the Sustainable Purchasing—Durables Goods credit. • Modified criteria to align with MR section in Building Design and Construction. • Added an option that rewards projects for having no alternations or furniture purchasing.
Credit	Sustainable Purchasing—Food	<ul style="list-style-type: none"> • Credit requirements moved to Purchasing—Ongoing credit.
Credit	Solid Waste Management—Waste Stream Audit	<ul style="list-style-type: none"> • Credit requirements moved to Ongoing Purchasing and Waste Policy prerequisite.
Credit	Solid Waste Management—Ongoing	<ul style="list-style-type: none"> • Credit title changed from Solid Waste Management—Ongoing Consumables. • Incorporates solid waste management requirements for durable goods from the Solid Waste Management—Durable Goods credit. • Requires safe disposal of all batteries and mercury-containing lamps. • Requires waste stream audit every five years.
Credit	Solid Waste Management—Durable Goods	<ul style="list-style-type: none"> • Credit requirements for durable goods moved to Solid Waste Management—Ongoing credit. • Credit requirements for furniture moved to Solid Waste Management—Facility Maintenance and Renovations.
Credit	Solid Waste Management—Facility Maintenance and Renovations	<ul style="list-style-type: none"> • Credit title changed from Solid Waste Management—Facility Alterations and Additions. • Incorporates solid waste management requirements for furniture from Solid Waste Management—Durable Goods credit.
INDOOR ENVIRONMENTAL QUALITY		
Prerequisite	Minimum Indoor Air Quality Performance	<ul style="list-style-type: none"> • Extended time frame for ventilation measurements. • Added reference to Section 8 of ASHRAE 62.1-2010 for HVAC system maintenance.
Prerequisite	Environmental Tobacco	<ul style="list-style-type: none"> • Removed smoking room allowance.

	Smoke Control	<ul style="list-style-type: none"> Residential option no longer applicable to hospitality projects. Reduced the maximum allowable leakage rate for compartmentalized residential units. Prohibited smoking on the entire site for schools.
Prerequisite	Green Cleaning Policy	<ul style="list-style-type: none"> Incorporated requirements of Green Cleaning—High-Performance Cleaning Program credit. Added requirement to implement the policy Added option to contract third party certified cleaning contractors.
Credit	Indoor Air Quality Management Program	<ul style="list-style-type: none"> Credit title changed from Indoor Air Quality Best Management Practices—Indoor Air Quality Management Program. Clarified language to require an I-BEAM audit at least once every five years. Encourage projects to incorporate IAQ management program in the project's current facilities requirements and operations and maintenance plan.
Credit	Indoor Air Quality Best Management Practices—Outdoor Air Delivery Monitoring	<ul style="list-style-type: none"> Credit requirements moved to Enhanced Indoor Air Quality Strategies credit.
Credit	Indoor Air Quality Best Management Practices—Increased Ventilation	<ul style="list-style-type: none"> Credit removed.
Credit	Indoor Air Quality Best Management Practices—Reduce Particulates in Air Distribution	<ul style="list-style-type: none"> Credit requirements moved to Enhanced Indoor Air Quality Strategies credit.
Credit	Indoor Air Quality Best Management Practices—Indoor Air Quality Management for Facility Alterations and Additions	<ul style="list-style-type: none"> Credit requirements moved to MR Prerequisite: Facility Maintenance and Renovation Policy and required as a policy only.
Credit	Enhanced Indoor Air Quality Strategies	<ul style="list-style-type: none"> New credit comprised of IAQ Best Management Practices—Outdoor Air Delivery Monitoring, IAQ Best Management Practices—Reduce Particulates in Air Distribution, and Green Cleaning—Indoor Chemical and Pollutant Source Control credits. Added paths for data centers and warehouse and distribution centers.
Credit	Thermal Comfort	<ul style="list-style-type: none"> Credit title changed from Occupant Comfort—Thermal Comfort Monitoring. Updated reference standard to ASHRAE 55-2010.
Credit	Interior Lighting	<ul style="list-style-type: none"> Credit title changed from Controllability of System—Lighting. Added requirement for three controllable lighting levels. Added an option addressing lighting quality.
Credit	Daylight and Quality Views	<ul style="list-style-type: none"> Removed simulation and prescriptive paths from daylight option. Revised compliant daylighting levels to 300-3,000 lux. Added requirement to take daylight measurements at two different times of the year. Added criteria to define a quality view, adopted from LEED 2009 Views exemplary performance. Allow views into atria for 30% of area. Added a warehouse and distribution center path for quality views.
Credit	Green Cleaning—High-Performance Cleaning Program	<ul style="list-style-type: none"> Credit requirements moved to Green Cleaning Policy prerequisite.

Credit	Green Cleaning— Custodial Effectiveness Assessment	<ul style="list-style-type: none"> • Encourage projects to perform routine inspections verifying the implementation of the green cleaning policy. • Changed the APPA audit threshold from 3 to 2.5.
Credit	Green Cleaning—Products and Materials	<ul style="list-style-type: none"> • Credit title changed from Green Cleaning—Purchase of Sustainable Cleaning Products and Materials. • Increased the compliance threshold from 30% to 75% of purchases. • Added provisions for ionized water cleaning. • Updated the referenced standards used as criteria.
Credit	Green Cleaning— Equipment	<ul style="list-style-type: none"> • Credit title changed from Green Cleaning—Sustainable Cleaning Equipment. • Added a required threshold for compliant equipment at 40%. • Added a required phase-out plan for existing non-compliant equipment. • Clarified criteria.
Credit	Green Cleaning—Indoor Chemical and Pollutant Source Control	<ul style="list-style-type: none"> • Credit requirements moved to Enhanced Indoor Air Quality Strategies credit.
Credit	Integrated Pest Management	<ul style="list-style-type: none"> • Credit title changed from Green Cleaning—Indoor Integrated Pest Management. • Incorporates outdoor integrated pest management requirements from Integrated Pest Management, Erosion Control and Landscape Management Plan credit. • Clarified required elements of the IPM plan. • Landscape maintenance requirements • Added allowance for certified IPM providers.
Credit	Occupant Comfort Survey	<ul style="list-style-type: none"> • Credit title changed from Occupant Comfort—Occupant Survey. • Requires a survey at least once every two years.