Major Changes from:

LEED Canada for New Construction and Major Renovation (NC) v1.0 plus addendum to *LEED Canada NC 2009* (*LEED Canada for Core and Shell Development (CS)* changes included)

General Changes:

- Total point score out of 110 rather than 70
- Credit weightings have changed, increasing some, lowering others
- Merger of two-part credits when only difference was threshold (e.g., MR Credit 4.1 and 4.2 are now MR Credit 4 with two different threshold levels)
- LEED Canada NC and CS rating systems are merged into one document and share a common reference guide
- LEED Canada CS credits generally align with NC; however there are a few substitutions, additions and eliminations
- *LEED Canada Reference Guide for Green Building Design and Construction* contains interpretations, where appropriate, for multi-unit residential buildings, campus projects and for managing leased tenant space (previously released through individual application guides)
- *LEED Canada-NC v1.0* Credit Interpretation Requests (CIRs) have been included as interpretation bullets in reference guide, where appropriate
- Submittals available in LEED Letter Templates, with documentation guidance in Reference Guide
- The certification process has been reduced from three rounds of submissions to two, with the elimination of the audit round – all documentation (to some extent streamlined from an audit) generally required in the initial submission
- To obtain certification, all projects are required to follow general Minimum Performance Requirements (MPRs), covering such issues as site boundaries, minimum project size, minimum occupant number, etc.

Credit		Major Changes
Sustainable Sites		
Prereq 1	**Construction Activity Pollution Prevention**	• *2003 U.S. EPA Construction General Permit* replaces the *1992 U.S. EPA Storm Water Management for Construction Activities, Chapter 3*
Credit 1	**Site Selection**	• Additional requirement to not development on land that is previously undeveloped or graded land within 15.2 metres of a water body which supports or could supports fish, recreation or industrial use • Correction to definition of farmland as many provinces and territories do not have an agricultural land reserve as referenced previously – new definition better aligns with USGBC's LEED NC 2009

Credit 2	**Development Density and Community Connectivity**	• Update to list of services for community connectivity • Additional option to achieve community connectivity without the site density requirement for subset of points
Credit 3	**Brownfield Redevelopment**	-
Credit 4.1	**Alternative Transportation: Public Transportation Access**	• Distance must be measured from main building entrance • An alternate compliance path for a Transportation Demand Management plan has been added
Credit 4.2	**Alternative Transportation: Bicycle Storage & Changing Rooms**	• Bicycle storage must be covered for FTE occupants • Calculations are based on peak transient use
Credit 4.3	**Alternative Transportation: Low-Emitting & Fuel-Efficient Vehicles**	• Fuel efficient vehicle definition has changed
Credit 4.4	**Alternative Transportation: Parking Capacity**	• Projects are restricted to a parking capacity upper limit of 3.5 spaces per 93 m^2 (1000 ft^2) • Carpool requirement is based on total parking spaces (including visitor spaces)
Credit 5.1	**Site Development: Protect and Restore Habitat**	• Slightly increased requirements for greenfield sites
Credit 5.2	**Site Development: Maximize Open Space**	• Provided new pathway for sites with local zoning but no open space requirements
Credit 6.1	**Stormwater Design: Quantity Control**	• For sites with existing imperviousness 50% or less, a new option has been provided to implement a stormwater management plan that protects receiving waterways from excessive erosion by implementing velocity and quantity control strategies
Credit 6.2	**Stormwater Design: Quality Control**	• Requirement for a stormwater quality management plan has been added • Total phosphorous requirement has been removed from calculations and replaced with a nutrient management plan to minimize pollution and eutrophication of waterways (with no specific removal levels)
Credit 7.1	**Heat Island Effect: Non-Roof**	• Clarification of options and expanded to include, for example, shading from solar panels • New pathway for near zero lot line projects which achieve SS Credit 2 (all points) and SS Credit 7.2.
Credit 7.2	**Heat Island Effect: Roof**	-
Credit 8	**Light Pollution Reduction**	• Modified requirements for interior and exterior light pollution • Language added to clarify IESNA RP-33 zones • Added public rights-of-way boundary exception for zones LZ2, LZ3 & LZ4 • Clarified site boundary for luminaires in intersections • Updated referenced standard to ASHRAE/IESNA Standard 90.1-2007
Credit 9	**Tenant Design and Construction Guidelines**	• New Core & Shell credit

Water Efficiency		
Prereq 1	**Water Use Reduction, 20% Reduction**	• New to LEED 2009, based on previous WE Credit 3.1 with the addition of a building/property water meter • Updated baselines for flow rates, based on the U.S. Energy Policy Act of 1992 and subsequent rulings by the U.S. Department of Energy, requirements of the Energy Policy Act of 2005, and the plumbing code requirements as stated in the 2006 editions of the Uniform Plumbing Code or International Plumbing Code
Credit 1	**Water Efficiency Landscaping**	• Merger of WE Credit 1.1 and WE Credit 1.2 • Minimum area clarified (5% of total project site area (including building)) • Added factors for calculating mid-summer baseline case • Addressed groundwater seepage for use in irrigation • Temporary irrigation systems limited to 1 year but no restrictions on type
Credit 2	**Innovative Wastewater Technologies**	• Reduction of on-site treatment threshold to 50%
Credit 3	**Water Use Reduction**	• See WE Prerequisite 1 changes for flow rate updates • Point thresholds have been increased with 3 levels available (30%, 35% and 40%)

Energy & Atmosphere		
Prereq 1	**Fundamental Commissioning of Building Energy Systems**	• Clarified Commissioning Authority (CxA) experience
Prereq 2	**Minimum Energy Performance**	• Updated referenced standard to ASHRAE/IESNA Standard 90.1-2007 • Performance Compliance Paths (comparison to MNECB and ASHRAE) are demonstrated through total building energy cost improvements including process loads • Prescriptive Compliance Paths are available
Prereq 3	**Fundamental Refrigerant Management**	• Requirement for zero use of halons in fire suppression equipment has been incorporated into EA Credit 4 • Added alternative compliance path for campus projects using existing district chilled water plants only
Credit 1	**Optimize Energy Performance**	• As per EA Prerequisite 2 • Point thresholds have changed • Different thresholds for Core & Shell projects
Credit 2	**On-Site Renewable Energy**	• Point thresholds have been reduced but now based on total building energy cost (not only regulated loads) • Different thresholds for Core & Shell projects

Credit 3	**Enhanced Commissioning**	• Clarified Commissioning Authority (CxA) experience and independency requirements • The same CxA overseeing the enhanced commissioning tasks (EA Credit 3) must also oversee the fundamental commissioning tasks (EA Prerequisite 1) • Clarifications were made to standardize LEED Commissioning Scope of Work
Credit 4	**Enhanced Refrigerant Management**	• Fire suppression systems must be free of ozone-depleting substances • Refrigerants must comply with a maximum threshold for the combined contributions to ozone depletion and global warming potential • Added option for not using refrigerants
Credit 5	**Measurement and Verification**	• Requirement added to provide process for corrective action if M&V plan shows energy savings are not being achieved • Removed requirement for a water M&V program • Separation of tenant submetering from base building creating two credits (EA Credit 5.1 and 5.2) for Core & Shell projects
Credit 6	**Green Power**	• Point threshold has been reduced to 35%, but now includes all building electricity (not only regulated loads) • Clarified that all purchases of green power are based on the quantity of energy consumed, not cost

Materials & Resources		
Prereq 1	**Storage and Collection of Recyclables**	• Area for the collection of organic waste must be provided in municipalities that support such collection
Credit 1.1	**Building Reuse: Maintain Existing Walls, Floors, and Roof**	• Combined with previous MR Credit 1.2 • Point added for new lower threshold (55%) • Different thresholds for Core & Shell projects
Credit 1.2	**Building Reuse: Maintain Interior Non-structural Elements**	• Credit no longer available to Core & Shell projects
Credit 2	**Construction Waste Management**	-
Credit 3	**Materials Reuse**	• Only lower threshold available to Core & Shell projects (5%)
Credit 4	**Recycled Content**	• Point thresholds have been increased (10% and 20%)
Credit 5	**Regional Materials**	• Point thresholds have been increased (20% and 30%) • Products must be extracted and processed within 800 km of the manufacturer rather than site • Allowance for fractions of products to be used to achieve credit

Credit 6	**Rapidly Renewable Materials**	• Point threshold has been reduced (2.5%) • Credit no longer available to Core & Shell projects
Credit 6/7	**Certified Wood**	• Credit 6 for Core & Shell projects • No exemption from Chain-of-Custody requirements for last vendor

Indoor Environmental Quality		
Prereq 1	**Minimum Indoor Air Quality Performance**	• Updated referenced standard to ASHRAE Standard 62.1-2007
Prereq 2	**Environmental Tobacco Smoke (ETS) Control**	• Residential (Case 2) clarified to include hotels, motels, and dormitories • Added language addressing signage in Option 1 and Option 2 • Added requirement to weatherstrip exterior doors and windows in residential projects • Added requirement to weatherstrip all residential unit doors leading to common hallways – however, if the common hallways are pressurized with respect to the residential units, an allowance is provided to follow Option 2 (considering the residential unit as the smoking room) • Updated referenced standard for demonstrating acceptable sealing of residential units to Chapter 4 (Compliance Through Quality Construction) of the Residential Manual for Compliance with California's 2001 Energy Efficiency Standards
Credit 1	**Outdoor Air Delivery Monitoring**	• Updated referenced standard to ASHRAE Standard 62.1-2007 • Clarified requirement to monitor CO_2 concentrations in all densely occupied areas (Case 1 - Mechanically Ventilated Spaces) • Added requirement for outdoor airflow measurement (Case 1 - Mechanically Ventilated Spaces) • Added specific requirements for naturally ventilated spaces (Case 2 - Naturally Ventilated Spaces)
Credit 2	**Increased Ventilation**	• Credit has been changed from ventilation effectiveness to requiring outdoor air ventilation rates 30% above minimum rates required by ASHRAE Standard 62.1-2007 • Naturally ventilated spaces may alternatively meet the recommendations of the CIBSE Applications Manual • Specific compliance path (Case 3) for residential projects requiring outdoor air ducted directly to the suite with air distributed to all regularly occupied areas
Credit 3.1	**Construction Indoor Air Quality Management Plan During Construction**	• Updated referenced standard to the Sheet Metal and Air Conditioning National Contractors Association (SMACNA) IAQ Guidelines For Occupied Buildings Under Construction, 2nd Edition 2007, ANSI/SMACNA 008-2008 (Chapter 3) • Clarified that filtration media must be replaced immediately prior to occupancy • Removed requirement to make provisions for inspections of building HVAC systems

Credit 3.2	**Construction Indoor Air Quality Management Plan Before Occupancy**	• Clarified the IAQ Management Plan implementation timeline requirements • Clarified that all finishes must be installed prior to flush-out • Flush-out during occupancy ventilation rate has been increased from 0.76 to 1.54 L/s/m^2 • Threshold for formaldehyde level was revised from 50 to 27 parts per billion in Option 2, Air Testing
Credit 4.1	**Low-Emitting Materials: Adhesives and Sealants**	• Clarification on use of VOC budget • Clarification on interior of the building • VOC thresholds no longer updated to match date of building permit but set as per rating system requirements
Credit 4.2	**Low-Emitting Materials: Paints and Coatings**	• As per IEQ Credit 4.1 • Moved primers from Green Seal requirements to SCAQMD requirements
Credit 4.3	**Low-Emitting Materials: Flooring Systems**	• Requirements now reflect all low-emitting flooring materials and finishes • All flooring must comply with a minor exemption of up to 5% for speciality areas
Credit 4.4	**Low-Emitting Materials: Composite Wood and Agrifibre Products**	-
Credit 5	**Indoor Chemical and Pollutant Source Control**	• Required entryway system travel distance length increased and systems are required at regular entry points • Combinations of permanently installed systems along with walk-off mats with provisions for maintenance are allowed • Added exemption for new air filtration media for air handling equipment with a maximum flow rate of 283 L/s (600 cfm) or less provided they are equipped with the highest supply air filtration level commercially available for the specific equipment • For residential projects, carbon monoxide alarms are required in areas adjacent to combustion equipment
Credit 6.1	**Controllability of System: Lighting**	• Re-structured credit from perimeter spaces to lighting control • Credit not available to Core & Shell projects
Credit 6.2/6	**Controllability of System: Thermal Comfort**	• Re-structured credit from non-perimeter spaces to thermal comfort control • Clarification of requirements for use of operable windows • Thermal comfort controls as described by ASHRAE Standard 55-2004 • Clarification on scope for Core & Shell projects
Credit 7.1/7	**Thermal Comfort: Design**	• Increased demonstration of compliance with ASHRAE 55-2004 -now required.

Credit 7.2	**Thermal Comfort: Verification**	• An occupant thermal comfort survey is required • An alternative compliance path was added for residential buildings • Credit no longer available to Core & Shell projects
Credit 8.1	**Daylight and Views: Daylight**	• Multiple options now available – simulation, prescriptive, measurement or combination
Credit 8.2	**Daylight and Views: Views**	• Threshold decreased through removal of requirement on glazing-to-floor area ratio.

Innovation in Design		
Credit 1	**Innovation in Design**	• Expanded innovation strategies allowed from 4 to 5 • Added stipulation that no more than 3 exemplary performance points can be awarded
Credit 2	**LEED® Accredited Professional**	-

Regional Priority		
Credit 1	**Durable Building**	• Formerly MR Credit 8 in LEED Canada NC v1.0
Credit 2	**Regional Priority Credit**	• New to LEED 2009