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.

<table>
<thead>
<tr>
<th>Credit</th>
<th>Major Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prereq 1</td>
<td><strong>Construction Activity Pollution Prevention</strong></td>
</tr>
<tr>
<td>Credit 1</td>
<td><strong>Site Selection</strong></td>
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<tr>
<td></td>
<td>• 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</td>
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<tr>
<td></td>
<td>• 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</td>
</tr>
</tbody>
</table>
| 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 m² (1000 ft²)  
• 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

### 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

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

<table>
<thead>
<tr>
<th>Prereq 1</th>
<th><strong>Minimum Indoor Air Quality Performance</strong></th>
<th>• Updated referenced standard to ASHRAE Standard 62.1-2007</th>
</tr>
</thead>
</table>
| 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 CO₂ 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/m²  
• 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 specialty 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 |
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<tbody>
<tr>
<td>Credit 8.1</td>
<td><strong>Daylight and Views: Daylight</strong></td>
<td>• Multiple options now available – simulation, prescriptive, measurement or combination</td>
</tr>
<tr>
<td>Credit 8.2</td>
<td><strong>Daylight and Views: Views</strong></td>
<td>• Threshold decreased through removal of requirement on glazing-to-floor area ratio.</td>
</tr>
</tbody>
</table>

### 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 |