



**THE RESORT MUNICIPALITY OF WHISTLER
COUNCIL POLICY**

POLICY NUMBER:	G-23	DATE OF RESOLUTION:	MONTH DD, 2022
NAME: GREEN BUILDING POLICY			

1.0 OBJECTIVE

This Green Building Policy is a flexible, performance-based framework with performance-based guidelines and criteria, targets, and information submission requirements for rezoning projects, which seeks to help achieve the sustainability and climate action goals established in the Climate Action Big Moves Strategy and the Official Community Plan (OCP). The Policy provides guidance and requirements for the design, construction, and operation of buildings and their surrounding landscapes, to reduce environmental impact and greenhouse gas emissions from new construction and contribute to Whistler's sustainability and climate action goals.

The Green Building Policy responds to OCP Policy 10.3.1.1: to maintain, update, and apply the Green Building Policy to reflect leading practices in energy efficiency and local government jurisdiction, including a broad, progressive integration of the BC Energy Step Code.

The Policy will help Whistler achieve key sustainability goals from the OCP, specifically reduction of greenhouse gas (GHG) emissions from buildings and infrastructure, reduction of environmental and energy impacts at a neighborhood level, and promoting land development that minimizes impacts on the natural environment. The Policy advances implementation of Big Moves #1 and #2 by requiring that new development addresses active transportation and electric vehicle infrastructure, and Big Moves #4 and #6 by aligning with the BC Energy Step Code to accelerate the transition toward zero emission buildings and by lowering the carbon consumption associated with building construction and operations.

The Green Building Policy includes a definition of key terms attached as Schedule A, the Green Building Policy Checklist attached as Schedule B, and best practice guidelines and resources for each of the six sections attached as Schedule C.

2.0 SCOPE OF POLICY

This policy addresses new construction at the scale of individual buildings and sites. It establishes performance guidelines that also include targets where appropriate for new construction in buildings under Part 9 (houses and small buildings) and Part 3 (large and complex buildings) of the BC Building Code. The performance guidelines are grouped thematically and organized in six sections:

1. Energy and Emissions

2. Building Materials
3. Sustainable Site Design
4. Green Mobility
5. Water Conservation and Rainwater Management
6. Solid Waste

Considering that the RMOW's most significant opportunity to require specific commitments in respect of sustainability features is through its discretionary authority to enact and amend zoning bylaws, the policy focuses on establishing guidelines and requirements to achieve higher sustainability standards as a condition for rezoning applications. The policy will also be used as a tool to assess the sustainable features of Development Permit applications and Building Permit applications for single family homes over 465 square metres.

3.0 PROCEDURE

3.1 Application Information

3.1.1 Application Checklist

Rezoning applications must include a completed Green Building Policy Checklist and letter of intent summarizing how the project addresses each section of the Green Building Policy.

3.1.2 Green Building Commitment

Green building provisions will be secured by a S.219 covenant, as a condition of rezoning.

3.2 Application Types

3.2.1 Zoning Amendment

Projects must submit a Green Building Policy Checklist and sustainability narrative for processing and approval of zoning amendments. Green building provisions will be secured through covenant.

3.2.2 Development Permit

Projects are requested to submit a Green Building Policy Checklist and sustainability narrative with Development Permit applications in the Whistler Village, Whistler Creek, Multi-Family Residential, Intensive Residential, and Industrial Development Permit Areas to demonstrate alignment with the Green Building Policy. Green building provisions will be encouraged however, not be secured through covenant at the Development Permit stage.

3.2.3 Building Permit

Projects are requested to submit a Green Building Policy Checklist and sustainability narrative with building permit applications for buildings greater than 465m² of floor area. Green building provisions will be encouraged however, not be secured through covenant at the Development Permit stage.

The application procedures and associated green building information requirements are summarized in Table 1 below:

Table 1 Summary of Green Building Policy Information Requirements

Application Information	Rezoning	Development Permit	Building Permit - greater than 465m ² floor area
Application Checklist Submit a completed Green Building Policy checklist and a narrative for the project.	Required	Recommended	Recommended
Green Building Commitment S.219 covenant requirement development consistent with the Green Building Policy.	Required	Not required	Not required

4.0 ENERGY AND EMISSIONS

4.1 Objective and Intent

This section aims to substantially reduce GHG emissions from new building and infrastructure, and by doing so, to reduce the environmental and energy impacts of residential neighbourhoods. This will help the RMOW meet its target that by 2030, annual emissions do not exceed 66,500 t-CO₂e. Additionally, by advancing the BC Energy Step Code implementation, this section addresses Big Move #4: Build zero emissions buildings of the Whistler's 2020 Climate Action Big Moves Strategy. Furthermore, this section is aligned with the RMOW *Building and Plumbing Bylaw* and will help Whistler meet the provincial goal for all buildings to be net-zero energy ready by 2032.

This section encourages all new buildings subject to a rezoning to be built with environmentally sustainable methods, standards and technologies including by implementing the BC Energy Step Code. The guidelines and performance targets in this section require strategies to decrease energy requirements and associated GHG emissions, and lower the share of energy supplied by non-renewable sources.

4.2 Performance Guidelines

4.2.1 Building Performance and Emissions

- 4.2.1.1 For new developments subject to a rezoning, all new buildings must be built one step higher than the current energy step code requirements in Whistler as required by the RMOW *Building and Plumbing Bylaw* and the BC Energy Step Code.
- 4.2.1.2 New developments subject to rezoning must use a Low Carbon Energy System as the primary space and water heating source.
- 4.2.1.3 If a backup heating system or equipment is necessary, it must be modelled to its full output capacity when calculating the system

coefficient of performance (COP) and Greenhouse Gas Intensity (GHGI) limits required for a Low Carbon Energy System (LCES).

- 4.2.1.4 Where a combination of fuel sources is proposed for backup heating equipment in Part 3 residential building, additional information may be requested by the RMOW to demonstrate that the fuel-fired equipment is appropriately modelled.

4.2.2 Passive Design Strategies

- 4.2.2.1 Projects must employ Passive Design Strategies to minimize heating and cooling loads and improve occupant comfort. Incorporate passive design elements where possible to optimize comfort and minimize overall energy use.

4.2.3 Ventilation and Air Filtration

- 4.2.3.1 Ventilation systems must include filtration devices with a Minimum Efficiency Reporting Value (MERV) of 13, as defined by ANSI/ASHRAE 52.2, prior to introduction of outdoor air into indoor occupied spaces.

- 4.2.3.2 All major ventilation systems must include heat recovery with a minimum sensible heat recovery effectiveness of 75%. Option of air bypass or other means of stopping heat transfer should be considered for all heat recovery systems to utilize shoulder season or summer night time cooling.

- 4.2.3.3 Wherever practically possible, all Part 3 buildings should be provided with a central Heat Recovery Ventilation system or systems.

4.2.4 Interior and Outdoor Lighting

- 4.2.4.1 Use high-efficacy lamps for light fixtures in new dwelling units, and commercial and industrial space.

- 4.2.4.2 Minimize light pollution by using high-efficacy lamps for all outdoor light fixtures.

- 4.2.4.3 Except as required for safety and security, control all outdoor lights with motion detectors.

5.0 BUILDING MATERIALS

5.1 Objective and Intent

This section aims to encourage low carbon design, low-carbon material use, and low-carbon construction practices in new buildings. Solid waste reduction measures during demolition and construction are outlined, and the use of environmentally-friendly and local building materials is encouraged. By incentivizing meaningful measures to

minimize solid waste and carbon intensive materials during design, demolition and construction, this section supports Climate Action Big Moves #6 to close the loop and shift toward lower carbon consumption.

5.2 Performance Guidelines

5.2.1 Demolition Waste Management

- 5.2.1.1 New rezoning applications that include demolition must target a minimum 60% demolition waste diversion rate and submit a Demolition Waste Diversion Report describing waste diversion over the course of a demolition.
- 5.2.1.2 Applicants are encouraged to conduct a salvage assessment of buildings planned for removal.

5.2.2 Construction Waste Management

- 5.2.2.1 To maximize construction waste recycling and solid waste diversion, recyclable materials must be separated on site and stored in wildlife-proof containers.
- 5.2.2.2 Provide a Construction Waste Management Plan for demolition waste, including measures to increase recycling and diversion rate.

5.2.3 Low-Emitting Materials

- 5.2.3.1 Projects should use only low- or no-VOC (volatile organic compounds) paints, carpets, adhesives and other low- or no-VOC interior materials/finishes.
- 5.2.3.2 Minimize or eliminate the use of interior materials containing added urea formaldehyde resins.

5.2.4 Embodied Emissions and Refrigerant Emissions

- 5.2.4.1 All projects should report the life-cycle equivalent carbon dioxide emissions (i.e. global warming potential impact, or 'embodied carbon') of each building, in $\text{kgCO}_2\text{e}/\text{m}^2$, as calculated by a whole-building life-cycle assessment (LCA). For consistency in LCA calculations, projects should use the NRC Whole Building LCA Guidelines.
- 5.2.4.2 All projects should calculate and report the life-cycle equivalent annual carbon dioxide emissions of each building, in $\text{kgCO}_2\text{e}/\text{m}^2$, from the emissions of refrigerants.
- 5.2.4.3 To reduce embodied carbon and emissions in building materials, incorporate low-carbon and plant-based building materials where feasible.

5.2.4.4 Rezoning application must include a description of specific measures that will be explored during design to reduce embodied emissions.

5.2.5 Certified Wood

5.2.5.1 Use certified sustainably harvested wood for wood building components and other wood based materials (e.g. framing, plywood, floors) where feasible.

5.2.6 Locally Sourced Materials

5.2.6.1 Use materials produced in British Columbia for major materials (e.g. exterior walls or floors, windows, doors) and/or systems (e.g. insulated panels, lighting, heating) where feasible.

6.0 SUSTAINABLE SITE DESIGN

6.1 Objective and Intent

This section aims to implement land development approaches that minimize negative impacts on the natural environment to protect Whistler's sensitive ecosystems, wildlife, habitat and biodiversity. Reducing threats such as habitat fragmentation, destruction, pollution and the introduction of invasive species help enhance the natural resilience of natural areas to climate change.

Principles of sustainable site design should be applied to site land development and management practices. During development, the preferred outcome is avoidance of negative environmental impacts, followed by minimization or mitigation, thirdly, by restoration and, lastly, by compensation for impacts. Sustainable site design is linked to rainwater and groundwater management and proposed designs should reflect this by providing integrated solutions. Including nature in the built environment improves the health and wellbeing of the community, provides habitat, enhances ecosystem function and services, and creates public open spaces for people to gather and socialize.

6.2 Performance Guidelines

6.2.1 Site Planning

6.2.1.1 Site planning should minimize habitat fragmentation and maximize biodiversity through the development. Site and landscape plans should identify existing adjacent natural areas and provide continuous connection between these areas through the project site where possible.

6.2.1.2 New development should be sited on previously-disturbed areas where possible to minimize excavation, grading and soil disturbance.

- 6.2.1.3 Site design should be compact to minimize site disturbance and locate new buildings to maximize retention of mature trees, plants, and shrubs.
- 6.2.1.4 Minimize surfaces covered by turf grass and prioritize drought-tolerant ground-covering plants rather than turf grass.
- 6.2.1.5 Design landscaping for all seasons to provide year-round opportunities for interaction with nature.

6.2.2 Soils and Fill

- 6.2.2.1 Retain and maximize reuse of uncontaminated topsoil on-site. Maintain a sufficient depth of quality topsoil in order to absorb runoff and ensure plants survive and thrive.

6.2.3 Setbacks for Underground Parking Structures

- 6.2.3.1 Reductions to setbacks for underground structures are generally not supported, due to the following benefits that are achieved by maintaining suitable setbacks from property lines:
 - Access to continuous soil volumes for rainwater management practices;
 - Soil conservation by minimizing site disturbance;
 - Significant tree retention;
 - Establishing long lived trees, planting and habitat.

7.0 GREEN MOBILITY

7.1 Objective and Intent

This section aims to substantially reduce GHG emissions from vehicles and transportation. Personal vehicles are Whistler's largest source of GHG emissions, accounting for 54% of Whistler's total emissions in 2019. Moving beyond car-based transport to active transport and accelerating the transition to electric vehicles are key opportunities to reduce transport related emissions. The intent is to encourage sustainable transportation and reduce reliance on private automobiles.

Designing developments that are well connected to local transit, active transportation infrastructure, green space, amenities and services is critical to ensure that Whistler transitions from a predominantly car based town, to one where most trips are done by active transport and transit use. Projects should provide active and sustainable transportation infrastructure such as bicycle parking, end of trip facilities, and electric vehicle charging infrastructure. This will contribute to improving the travel conditions and to make cycling more convenient. It will also contribute to improved air quality and resident health.

7.2 Performance Guidelines

7.2.1 EV Charging Infrastructures

- 7.2.1.1 New single-family dwellings, two-family dwellings, townhouses, single-family or two-family dwellings with secondary suites or lock-off units subject to a rezoning must be provided with at least one energized electrical outlet capable of providing Level 2 charging or higher to the parking space.
- 7.2.1.2 All residential parking spaces for new multi-family and mixed-use development, excluding visitor parking spaces, must be provided with an energized electrical outlet capable of providing Level 2 EV charging or higher to the parking space.
- 7.2.1.3 At least 20% of visitor parking stalls in multi-family residential development must include Level 2 electric vehicle charging equipment or greater.
- 7.2.1.4 In non-residential development, at least 25% of parking spaces must be provided with an energized outlet capable of providing Level 2 charging or higher.
- 7.2.1.5 Where an electric vehicle energy management system is implemented, the RMOW may specify a minimum performance standard to ensure a sufficient rate of electric vehicle charging.

7.2.2 Pedestrian Friendliness

- 7.2.2.1 Maximize pedestrian and cycling connections to adjacent sidewalks, pedestrian paths, trails, open space, and transit stops.
- 7.2.2.2 All non-vehicular routes should be fully accessible. Design on-site sidewalks, crosswalks and walkways to be continuous, universally accessible, barrier-free and clearly delineated. Sidewalks and pathways should be wide enough for wheelchairs and should include a tactile strip for the visually impaired where appropriate. Curb-cuts and curb let-downs should be provided in appropriate locations to facilitate safe, convenient, and direct access from parking spaces to buildings for people with disabilities.
- 7.2.2.3 Provide streetscape amenities such as benches and waste receptacles.

7.2.3 Short Term Bicycle Parking

- 7.2.3.1 New multi-family residential, industrial, commercial and institutional buildings subject to a rezoning must provide at least 6 short term bicycle parking spaces near the building entrance in a weather-protected and well-lit area at grade.

7.2.4 Long Term Bicycle Parking

- 7.2.4.1 Multi-family residential developments subject to a rezoning must provide sufficient long term bicycle parking spaces in a bicycle

storage facility or within each residential dwelling unit. At least 1 long-term bicycle parking space should be provided for each dwelling unit under 45 m² and at least 2 long-term bicycle parking spaces for each dwelling unit greater than 45 m².

7.2.4.2 Non-residential buildings subject to a rezoning must have sufficient long term bicycle parking spaces. At least 1 long-term bicycle parking space should be provided for each 150 m² of gross floor area.

7.2.4.3 Long term bicycle parking spaces must be near the main entrance in a weather protected and well-lit area with controlled access or secure enclosures.

7.2.4.4 At least 25% of required long-term bicycle parking spaces must be equipped with an electric outlet to support electric bicycle charging and other e-mobility devices.

7.2.5 End of Trip Facilities

7.2.5.1 New non-residential developments larger than 500 m² subject to a rezoning should provide an end of trip facility in order to facilitate growth in bicycle commute trips and improve commuting conditions.

7.2.6 Active Transportation Amenities

7.2.6.1 In order to facilitate growth in bicycle commute trips and improve commuting conditions, multi-family residential developments subject to a rezoning should have an outdoor faucet for occupants to wash bicycles.

8.0 WATER CONSERVATION & RAINWATER MANAGEMENT

8.1 Objective and Intent

This section aims to reduce potable water consumption and to protect water quality and quantity in Whistler's water bodies, streams and groundwater. Whistler's Community Vision and Official Community Plan requires the RMOW to balance water conservation efforts with increasing supply. Increased water efficiency can help reduce the burden on municipal water supply and wastewater systems. In addition, reducing water consumption decreases the amount of water that requires treatment and storage, which reduces energy use and infrastructure costs.

This section also addresses stormwater management. Applicants are asked to manage stormwater runoff volumes and rate so as to not exceed a naturalized (i.e. undeveloped) condition. Green infrastructure approaches are to be maximized on site to the greatest extent possible, with onsite infiltration and rainwater re-use being the most preferred approach, and detention being the least preferred.

8.2 Performance Guidelines

8.2.1 Integrated Potable Water Management Approach

8.2.1.1 Reduce the total volume of potable water used for buildings by adopting an integrated approach for potable water management. The reduction should be achieved through a combination of water conservation, efficiency and/or onsite non-potable water re-use.

8.2.2 Indoor Potable Water Use

8.2.2.1 All newly installed toilets, urinals, faucets, and showerheads must be high performance (e.g. low-flush or dual-flush toilets).

8.2.2.2 Provide energy efficient certified products for water-consuming appliances (e.g. Energy Star certified appliances).

8.2.3 Outdoor Potable Water Use

8.2.3.1 New developments subject to rezoning should eliminate potable water use for irrigation and avoid installing permanent potable water irrigation systems.

8.2.3.2 If an irrigation system is installed, it should integrate rainwater collection/reuse systems such as rainwater harvesting systems, cisterns and rain barrels to utilize non-potable water and reduce potable water consumption.

8.2.4 Stormwater Management

8.2.4.1 To reduce pollution and contamination during construction and development, the Green Building Checklist must include:

- A site plan showing the following:
 - Location of the RMOW's storm sewer connection (if applicable);
 - Location of impervious surfaces such as buildings, patios, walkways, decks, and driveways, and impervious areas, such as gardens, lawn areas, and undisturbed forest;
 - Drainage facilities including locations of roof leaders, splash pads, storage tanks, rock pits, overflow locations, lawn basins, etc.
 - Upslope interception ditches (if applicable) to reduce surface runoff draining off site.
- Area calculation showing the proposed change in connected impervious area;
- Calculation of volume and rate of runoff from the existing site (excluding natural forested areas);
- Calculation of volume and rate of runoff from the proposed development on the site (excluding natural forested areas);
- Description, drawing, and sizing of the stormwater source controls to be used including any tanks, infiltration systems, rain gardens, and permeable pavements;

- If an infiltration facility is proposed for the site, supporting documents must be submitted.

8.2.4.2 Manage stormwater runoff volumes and rate as to not exceed the naturalized (i.e. undeveloped) condition. Applicants should demonstrate strategies to remove total suspended solids (TSS) from runoff leaving the site.

8.2.5 Impervious Surfaces

8.2.5.1 Minimize impervious surfaces on the site area to facilitate on-site water retention and infiltration.

8.2.5.2 Maximize the use of Low Impact Development measures such as:

- Permeable pavement;
- Bioswales;
- Infiltration trenches / bio-retention areas;
- Rain gardens;
- Draining roofs to pervious areas;
- Other innovative stormwater management strategies.

9.0 SOLID WASTE

9.1 Objective and Intent

This section aims to improve solid waste reduction and landfill diversion during building operational phase by requiring new development to incorporate better waste infrastructure and management plans. The goal is to move the RMOW closer to its zero waste goal and continue to reduce all streams of waste.

The guidelines are intended to encourage ongoing waste reduction and increased diversion of products and materials from the waste stream through avoidance, re-use, composting and recycling. They encourage innovative measures to support waste diversion and minimize the environmental impacts of waste collection activities. New development should provide increased opportunities to properly dispose of different types of waste and sufficient space for collection of materials.

9.2 Performance Guidelines

9.2.1 Residential Waste Storage Area

9.2.1.1 For every residential unit, provide a garbage and recycling area no less than 0.3 m³ located in or adjacent to the kitchen and equipped with at least 3 collection bins (garbage, recycling, organics).

9.2.2 Operational Waste Reduction and Management

9.2.2.1 Multi-family residential and non-residential developments subject to a rezoning must develop and implement a Solid Waste Management Plan demonstrating the proposed operational waste reduction and management strategies.

9.2.2.2 Rezoning must demonstrate adequate access routes and turning radius for collection vehicles.

9.2.2.3 Garbage containers in common areas (e.g. lobby and corridors) in multi-family residential, industrial, commercial and institutional building should always be placed with recycling and organics containers.

9.2.2.4 In mixed-use buildings containing a residential use, provide a separate waste, recycling and organics storage/collection space for residential and commercial use.

9.2.3 Additional Zero Waste Initiatives

9.2.3.1 Consider installing a compactor system to reduce trip frequency and associated GHG emissions related to collection.

9.2.3.2 Consider allocating space in the building and outfit a designated area for residents to repair items for re-use.

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SCHEDULE A DEFINITIONS

Active Transportation	Forms of overland travel that are self-propelled, including walking, jogging, cycling, hand-propelled wheelchair use, cross country skiing, ski touring, inline skating and skateboarding.
Bylaw	Local ordinances within the municipal jurisdiction, enacted by municipal council but approved by the province.
Coefficient of Performance (COP)	A number that describes the effectiveness of heat pumps, refrigerators, or air conditioners. The COP describes a ratio of useful heating or cooling provided to energy provided.
Community Energy and Climate Action Plan (CECAP)	A document that describes the RMOW's efforts to reduce both corporate and community emissions to meet mandated emission reduction targets.
Deconstruction	An alternative to demolition, this system requires dismantling of buildings in a way that preserves the ability of the materials to be kept separate and reused or recycled to the highest degree possible.
Detached Dwelling	A building containing one principal dwelling unit.
Diversion	The process of recycling or composting generated waste rather than burying or burning it.
Duplex Dwelling	A building consisting of two principal dwelling units placed one above the other or attached side-by-side.
Dwelling Unit	A self-contained set of habitable rooms with one set of cooking facilities.
Embodied Carbon	Embodied carbon is the carbon dioxide (CO ₂) emissions (or equivalents) associated with materials and production processes throughout the whole lifecycle of food, a product or building.
Energy Step Code	Means the Province of British Columbia's performance-based standard for energy efficiency in new construction requiring energy modeling and on-site testing to demonstrate minimum performance against metrics for building envelope; equipment and systems; and airtightness requirements; and including Step 1, Step 2, Step 3, Step 4 and Step 5, as defined in Sections 9.36.6 and 10.2.3 of the British Columbia Building Code, all as amended or re-enacted from time to time.
EV	Electric Vehicle
Greenhouse gases (GHGs)	Any gas that has the property of absorbing infrared radiation (net heat energy) emitted from Earth's surface and radiating it back to Earth's surface, thus contributing to the greenhouse effect.

Human activities like burning fossil fuels have added carbon dioxide, methane and nitrous oxide to our atmosphere, creating a “greenhouse effect” that traps energy from the sun and causes Earth’s temperature to rise.

Greenhouse Gas Intensity (GHGI)

Means a measure of a building’s GHG performance using the definition, calculation, and fuel type emissions factors established in the energy modeling guidelines referenced by the Energy Step Code that is a calculated value determined through energy modeling and reported in kilograms of carbon-dioxide-equivalent per square meter per year (kgCO₂e/m²/yr.).

Hazardous Material

Any item or agent (biological, chemical, physical) that has the potential to cause harm to humans, animals, or the environment, either by itself or through interaction with other factors.

Heat Recovery Ventilation system (HRV)

Heat recovery ventilation (HRV), also known as mechanical ventilation heat recovery (MVHR), is an energy recovery ventilation system which works between two sources at different temperatures.

High-Efficacy Lamps

Lamps have traditionally been referred to as light bulbs. By definition, high-efficacy is determined by the lumens (light emitted) per watts (W) of power to produce the light. The acceptable ratio of lumens to watts depends on the wattage of the lamps. For example, a 60-watt or greater lamp must produce at least 60 lumens/W to be considered high efficacy. Examples of high-efficacy lamps are compact fluorescent lamps (CFLs), T-8 linear fluorescent lamps and LED lamps.

Heating, Ventilation, Air Conditioning system (HVAC)

HVAC is an acronym for heating, ventilation and air-conditioning systems. This includes products like furnaces, air handlers, packed units, heat pumps, air conditioners and whole-home ventilators. The ductwork connected to these pieces of equipment is another component of HVAC, as well as thermostats and other home comfort controls.

Life Cycle Assessment (LCA)

Life Cycle Assessment (LCA) is a standardized, science-based tool for quantifying the impact in order to assess lifetime environmental impact. LCA takes into consideration all the steps that lead from raw material through manufacture distribution and usage to final disposal. An LCA can both measure a building’s lifetime impacts and, at the same time, quantify the impact of a single material in the building. Calculating greenhouse gas emissions (or a carbon footprint) is just one dimension of an LCA, which can also assess impacts such as ozone depletion, eutrophication, impact on human health and much more. Results obtained via an LCA can be trusted as they are based on international standards, ISOs 14040 and 14044. This helps to ensure consistency, reliability and independence from commercial pressure.

Long Term Bicycle Parking

Means a bicycle parking space for employees or residents of the building. For bicycle parked for longer periods (i.e. more than 4 hours), typically requiring more secure parking.

Low Carbon Energy System (LCES)	<p>Means a professionally operated and maintained, highly efficient mechanical system that supplies a building's space heating, cooling, and domestic hot water heating demand primarily from low-carbon energy sources with the following characteristics:</p> <ul style="list-style-type: none">• A system seasonal average coefficient of performance greater than two;• Modelled Greenhouse Gas Intensity no more than 3 kg CO₂e/m²/yr; and• Any natural gas-fired peak demand heating equipment is appropriately sized to augment the primary low carbon system under peak demand conditions.
Low-Carbon Building Material	<p>Low-carbon building materials are sourced from materials with both low embodied energy and carbon I their production, assembly, and transportation processes. Due to the broad-based definition, low-carbon building materials are interpreted differently in different contexts. For example, metal products are considered to be high-embodied carbon materials because the extraction and refinement processes involved are carbon intensive. However, recycled metal products used in new buildings can be considered low-carbon.</p>
Low-Impact Development (LID)	<p>Low-impact development is an approach to managing stormwater runoff that emphasizes on-site natural features to protect water quality, by replicating the natural land cover hydrologic regime of watersheds, and addressing runoff close to its source. Examples include better site design principles (e.g. minimizing land disturbance, preserving vegetation, minimizing impervious surfaces), and design practices (e.g. rain gardens, vegetated swales and buffers, permeable pavement, rainwater harvesting, soil amendments). These are engineered practices that may require specialized design assistance.</p>
Minimum Efficiency Reporting Value (MERV)	<p>Minimum Efficiency Reporting Value (MERV) is a measurement scale designed in 1987 by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) to report the effectiveness of air filters in more detail than other ratings.</p>
Official Community Plan (OCP)	<p>Whistler's Official Community Plan (OCP) describes the long-term vision of the community. It is a statement of objectives and policies that guide decisions on municipal planning and strategies, addressing such matters including transportation, housing, sustainability or the impacts of climate change.</p>
Plant-Based Building Material	<p>Plant-based refers to materials and products that are partially or wholly derived from plants or other renewable agricultural, aquatic, or forestry inputs. That includes natural inputs like algae, corn, hemp, or potatoes. These inputs are then turned into usable building materials.</p>
Short Term Bicycle Parking	<p>Means a bicycle parking space for visitors of the building. For bicycle parked for a short period (i.e. less than 4 hours) in locations that are easily accessible.</p>
Solar Reflectance Index (SRI)	<p>The Solar Reflectance Index (SRI) is a measure of the solar reflectance and emissivity of materials that can be used as an indicator of how hot they are likely to become when solar radiation is incident on their surface. The lower the SRI, the hotter a material is likely to become in the sunshine.</p>

Stormwater Management Plan

Means a comprehensive plan designed to reduce the discharge of pollutants from stormwater during development and construction activities, and after the site has undergone final stabilization following completion of development activities.

Sustainable Site Design

Sustainable Site Design seeks to reduce negative impacts on the environment, and the health and comfort of building occupants, thereby improving building performance. The basic objectives is to create healthy, continuous and productive environments.

Universal Design

The design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design. Universal Design is based on seven principles:

1. Equitable Use: The design is useful and marketable to people with diverse abilities.
2. Flexibility in Use: The design accommodates a wide range of individual preferences and abilities.
3. Simple and Intuitive Use: Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills or current concentration level.
4. Perceptible Information: The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.
5. Tolerance for Error: The design minimizes hazards and the adverse consequences of accidental or unintended actions.
6. Low Physical Effort: The design can be used efficiently and comfortably and with a minimum fatigue.
7. Size and Space for Approach and Use: Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture or mobility. (Mace 1985) (Centre for Excellence in Universal Design).

Whistler's Climate Action Big Moves Strategy

The Climate Action Big Moves Strategy focuses on transportation, buildings, and waste, and articulates the key strategies Whistler will need to further reduce greenhouse gas emissions to meet its targets.

SCHEDULE B
Green Building Policy Checklist

Energy and Emissions				
Performance Area	Performance Guideline	Met?	Supporting Documentation	Comments
Building Performance and Emissions	For new development subject to a rezoning, all new buildings must be built one step higher than the current energy step code requirements in Whistler as prescribed by the RMO Building and Plumbing Bylaw and the BC Energy Step Code.	Choose an item.	<input type="checkbox"/> Energy strategy/rationale and/or other documentation demonstrating compliance with BC Energy Step Code and Low Carbon Energy System requirements	
	New development subject to rezoning must use a Low Carbon Energy System as the primary space and water heating source	Choose an item.		
	If a backup heating system or equipment is necessary, it must be modelled to its full output capacity when calculating the system COP and GHGI limits required for a Low Carbon Energy System.	Choose an item.		
Passive Design Strategies	Projects must employ Passive Design Strategies to minimize heating and cooling loads and improve occupant comfort. Incorporate passive design elements where possible to optimize comfort and minimized overall energy use.	Choose an item.	<input type="checkbox"/> Building and site plan(s) indicating passive design strategies implemented	
Ventilation and Air Filtration	Ventilation systems must include filtration devices with a MERV of 8, as defined by ANSI/ASHRAE 52.2, prior to introduction of outdoor air into indoor occupied spaces.	Choose an item.	<input type="checkbox"/> Building plan(s) and/or any other documentation indicating the proposed ventilation and air filtration system	
Interior and Outdoor Lighting	Maximize the use of high efficiency lamps for light fixtures in new dwelling units, and commercial and industrial space.	Choose an item.	<input type="checkbox"/> Building plan(s) and/or any other documentation indicating interior lighting details	
	Minimize light pollution by using high/efficacy lamps colors for all outdoor light fixtures.	Choose an item.		
	Except as required for safety and security, control all outdoor lights with motion detectors.	Choose an item.		

Building Materials				
Performance Area	Requirement	Met?	Supporting Documentation	Comments
Demolition Waste Management	New rezoning application that includes a demolition must target a minimum 60% demolition waste diversion rate.	Choose an item.	<input type="checkbox"/> Demolition Waste Diversion Bylaw requirements	
Construction Waste Management	To maximize construction waste recycling and solid waste diversion, recyclable materials must be separated on-site and stored in wildlife-proof containers.	Choose an item.	<input type="checkbox"/> Construction Waste Management Plan	
	Provide a Construction Waste Management Plan including measures to increase recycling and diversion rate.	Choose an item.		
Low-Emitting Materials	Projects should use only low- or no-VOC (volatile organic compounds) paints, carpets, adhesives and other low- or no-VOC interior materials/finishes.	Choose an item.	<input type="checkbox"/> Materials schedule(s) and/or any other documentation demonstrating the use of low-emitting materials	
	Minimize or eliminate the use of interior materials containing added urea formaldehyde resins.	Choose an item.		
Embodied and Refrigerant Emissions	All projects should assess and report the life-cycle equivalent carbon dioxide emissions (i.e. global warming potential impact, or 'embodied carbon') of each building, in kgCO ₂ e/m ² , as calculated by a whole-building life-cycle assessment (LCA).	Choose an item.	<input type="checkbox"/> Life Cycle Assessment <input type="checkbox"/> Materials schedule(s) and/or any other documentation demonstrating the use of low-emitting materials	
	All projects should calculate and report the life-cycle equivalent annual carbon dioxide emissions of each building, in kgCO ₂ e/m ² , from the emissions of refrigerants.	Choose an item.		
	To reduce embodied carbon and emissions in building materials, incorporate low-carbon and plant-based building materials where feasible.	Choose an item.		
	Rezoning application must include a description of specific measures that will be explored during design to reduce embodied emissions.	Choose an item.		

Certified Wood	Use certified sustainably harvested wood for wood building components and other wood based materials (e.g. framing, plywood, floors).	Choose an item.	<input type="checkbox"/> Materials schedule(s) and/or any other documentation demonstrating the use of certified sustainably harvested wood	
Locally Sourced Materials	Use materials produced in British Columbia for major materials (e.g. exterior walls or floors, windows, doors) and/or systems (e.g. insulated panels, lighting, heating).	Choose an item.	<input type="checkbox"/> Materials schedule(s) and/or any other documentation demonstrating the use of locally sourced materials.	

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Sustainable Site Design				
Performance Area	Requirement	Met?	Supporting Documentation	Comments
Site Planning	Site planning should minimize habitat fragmentation and maximize biodiversity through the development. Site and landscape plans should identify existing adjacent natural areas and provide continuous connection between these areas through the project site where possible.	Choose an item.		
	New development should be sited on previously-disturbed areas where possible to minimize excavation, grading and soil disturbance.	Choose an item.	<input type="checkbox"/> Site planning written rationale and landscaping strategy	
	Site design should be compact to minimize site disturbance and locate new buildings to maximize retention of mature trees, plants, and shrubs.	Choose an item.	<input type="checkbox"/> Site and landscape plan(s) indicating adjacent natural areas, continuous connections and vegetation buffer,	
	Minimize surfaces covered by turf grass and prioritize drought-tolerant ground-covering plants rather than turf grass.	Choose an item.		
	Design landscaping for all seasons to provide year-round opportunities for interaction with nature.	Choose an item.		
Soils and Fill	Retain and maximize reuse of uncontaminated topsoil on-site. Maintain a sufficient depth of quality topsoil in order to absorb runoff and ensure plants survive and thrive.	Choose an item.	<input type="checkbox"/> Written rationale and landscaping strategy	

Green Mobility				
Performance Area	Requirement	Met?	Supporting Documentation	Comments
EV Charging Infrastructures	New single-family dwellings, two-family dwellings, townhouses, single-family or two-family dwellings with secondary suites or lock-off units subject to a rezoning must be provided with at least one energized electrical outlet capable of providing Level 2 charging or higher to the parking space.	Choose an item.		
	All residential parking spaces for new multi-family and mixed-use development, excluding visitor parking spaces, must be provided with an energized electrical outlet capable of providing Level 2 EV charging or higher to the parking space.	Choose an item.	<input type="checkbox"/> Parking and building plan(s) indicating the location of EV chargers and publicly accessible fast charging hub. <input type="checkbox"/> Parking table or schedule indicating parking totals and charging capacity that demonstrate compliance with the requirement(s)	
	At least 20% of visitor parking stall in multi-family residential development must include Level 2 electric vehicle charging equipment or greater.	Choose an item.		
	In non-residential development, at least 25% of parking spaces must be provided with an energized outlet capable of providing Level 2 charging or higher.	Choose an item.		
Pedestrian Friendliness	Maximize pedestrian and cycling connections to adjacent sidewalks, pedestrian paths, trails, open space, and transit stops.	Choose an item.		
	All non-vehicular routes should be fully accessible. Design on-site sidewalks, crosswalks and walkways to be continuous, universally accessible, barrier-free and clearly delineated. Sidewalks and pathways should be wide enough for wheelchair and should include a tactile strip for the visually impaired where appropriate. Curb-cuts and curb let-downs should be provided in appropriate locations to facilitate safe, convenient, and direct access from parking spaces		<input type="checkbox"/> Site and building plan(s) indicating pedestrian and cycling connections clearly identified. <input type="checkbox"/> Site plan(s) indicating streetscape amenities	

	to buildings for people with disabilities.			
	Provide streetscape amenities such as benches and waste receptacles.	Choose an item.		
Short Term Bicycle Parking	New multi-family residential, industrial, commercial and institutional building subject to a rezoning must provide at least 6 short term bicycle parking spaces near the building entrance in a weather-protected and well-lit area at grade.	Choose an item.	<input type="checkbox"/> Site and building plan(s) indicating location, number and type of bicycle parking spaces <input type="checkbox"/> Parking table or schedule indicating parking totals and charging capacity that demonstrate compliance with the requirement(s)	
Long Term Bicycle Parking	Multi-family residential developments subject to a rezoning must provide sufficient long term bicycle parking spaces in a bicycle storage facility or within each residential dwelling units. At least 1 long-term bicycle parking space should be provided for each dwelling unit under 45 m ² and at least 2 long-term bicycle parking space for each dwelling unit greater than 45 m ² .	Choose an item.	<input type="checkbox"/> Site and building plan(s) indicating location, number and type of bicycle parking spaces. <input type="checkbox"/> Parking table or schedule indicating parking totals and charging capacity that demonstrate compliance with the requirement	
	Non-residential buildings subject to a rezoning must have sufficient long term bicycle parking spaces located either in a bicycle storage facility or in a weather protected and well-lit area near the main entrance with controlled access or secure enclosures. At least 1 long-term bicycle parking space should be provided for each 150 m ² of gross floor area.	Choose an item.		
	Long term bicycle parking spaces must be in a weather protected and well-lit area with controlled access or secure enclosures.	Choose an item.		
	At least 25% of required long-term bicycle parking spaces must be equipped with an electric outlets to support electric bicycle charging and other e-mobility devices.	Choose an item.		
End of Trip Facilities	New non-residential developments larger than 250 m ² subject to a rezoning	Choose an item.	<input type="checkbox"/> Site and building plan(s) indicating the location and details of end of trip facilities	

	should provide an end of trip facility in order to facilitate growth in bicycle commute trips and improve commuting conditions.		<input type="checkbox"/> Written rationale of the proposed strategy describing the offer	
Active Transportation Amenities	Multi-family residential developments subject to a rezoning should have an outdoor faucet for occupants to wash bicycles.	Choose an item.	<input type="checkbox"/> Site and building plan(s) indicating the location and details of active transportation amenities	

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Water Conservation & Rainwater Management				
Performance Area	Requirement	Met?	Supporting Documentation	Comments
Integrated Potable Water Management Approach	Reduce the total volume of potable water used for buildings by adopting an integrated approach for potable water management. The reduction should be achieved through a combination of water conservation, efficiency and/or onsite non-potable water re-use.	Choose an item.	<input type="checkbox"/> Calculations demonstrating water use reduction over baseline fixtures <input type="checkbox"/> Site and landscaping plan(s) indicating water conservation and low-impact irrigation strategies implemented	
	All newly installed toilets, urinals, faucets, and showerheads must be high performance (e.g. low-flush or dual-flush toilets).	Choose an item.	<input type="checkbox"/> Documentation demonstrating certified products installation	
Indoor Potable Water Use	Provide energy efficient certified products for water-consuming appliances (e.g. Energy Star certified appliances).	Choose an item.	<input type="checkbox"/> Plumbing fixtures specifications and/or other documentation demonstrating high-performance fixtures and appliances installation	
	New developments subject to rezoning should eliminate outdoor potable water use for irrigation and avoid installing permanent potable water irrigation system.	Choose an item.	<input type="checkbox"/> Site and landscaping plan(s) indicating if an irrigation system is proposed and its water source	
Outdoor Potable Water Use	If an irrigation system is installed, it should integrate rainwater collection/reuse systems such as rainwater harvesting systems, cisterns and rain barrels to utilize non-potable water and reduce potable water consumption.	Choose an item.		

<p>Stormwater Management</p>	<p>Manage stormwater runoff volumes and rate as to no exceed a naturalized (i.e. undeveloped) condition. Development should aim to remove at least 80% of Total Suspended Solids (TSS) from all runoff leaving the site.</p>	<p>Choose an item.</p>	<p><input type="checkbox"/> Site and landscaping plan(s) showing the following:</p> <ul style="list-style-type: none"> • Location of the RMOW's storm sewer connection (if applicable); • Location of impervious surfaces such as buildings, patios, walkways, decks, and driveways, and impervious areas, such as gardens, lawn areas, and undisturbed forest; • Drainage facilities including locations of roof leaders, splash pads, storage tanks, rock pits, overflow locations, lawn basins, etc. • Upslope interception ditches (if applicable) to protect property from surface runoff potentially draining onto site from upslope. <p><input type="checkbox"/> Area calculation showing the proposed change in connected impervious area</p> <p><input type="checkbox"/> Calculation of volume and rate of runoff from the existing site (excluding natural forested areas);</p> <p><input type="checkbox"/> Calculation of volume and rate of runoff from the proposed development on the site (excluding natural forested areas);</p> <p><input type="checkbox"/> Description, drawing, and sizing of the stormwater source controls to be used including any tanks, infiltration systems, rain gardens, and permeable pavements;</p> <p><input type="checkbox"/> If an infiltration facility is proposed for the site, supporting document must be submitted.</p>	
<p>Pervious Surfaces</p>	<p>Maximize pervious surfaces on the site area not occupied by a building or structure in order to facilitate on-site water retention and infiltration.</p>	<p>Choose an item.</p>	<p><input type="checkbox"/> Site and landscaping plan(s) indicating LID measures implemented, permeable and unpaved areas</p>	

	Maximize the use of Low Impact Development measures			
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Solid Waste				
Performance Area	Requirement	Met?	Supporting Documentation	Comments
Residential Waste Storage Area	For every residential unit, provide a garbage and recycling area no less than 0.3 m3 located in or adjacent to the kitchen and equipped with at least 3 collection bins (garbage, recycling, organics).	Choose an item.	<input type="checkbox"/> Building plan(s) indicating residential waste storage area for every unit	
Operational Waste Reduction and Management	Multi-family and non-residential developments subject to a rezoning must develop and implement a Solid Waste Management Plan demonstrating the proposed operational waste reduction and management strategies.	Choose an item.	<input type="checkbox"/> Solid Waste Management Plan <input type="checkbox"/> Building and/or site plan(s) indicating waste management facility and showing the functional design	
	Rezoning must demonstrate adequate access route and turning radius for collection vehicles.	Choose an item.		
	Garbage containers in common areas (e.g. lobby and corridors) in multi-family residential, industrial, commercial and institutional building should always be placed with recycling and organics containers.	Choose an item.		
	In mixed-use buildings containing a residential use, provide a separate waste, recycling and organics storage/collection space for residential and commercial use.	Choose an item.		

SCHEDULE C

Best Practices and Resources

ENERGY AND EMISSIONS

Building Performance and Emissions

BC Energy Step Code Builder Guide

- Outlines key strategies and approaches used to meet Step Code requirements for houses and low-rise wood-frame residential buildings up to six storeys

BC Energy Step Code Design Guide

- Learn about benefits and impacts of key design strategies necessary to achieve each step of the Step Code, including both mechanical and envelope strategies;
- Provides detailed implementation tactics related to heating, ventilation, and air-conditioning (HVAC) solutions and strategies.

More guides and handbooks for builders are available at:

- <https://energystepcode.ca/builder-guides/>

Passive Design Strategies

The application of passive design must be carefully considered within the specific constraints and opportunities of each project. The key passive design recommendations for buildings in Whistler are summarized below:

- Design each façade specific to its orientation.
- For better energy performance, attempt to limit windows to 50% on any façade (for best performance, limit windows to 30%), taking into account other aesthetic and livability criteria. If higher window to wall area ratios are desired, incorporate high performance windows or a double façade and optimize shading.
- Use an air-tight envelope to minimize uncontrolled infiltration
- Use heat-recovery ventilation during heating season only, and design for natural ventilation and cooling by natural ventilation throughout the rest of the year.
- For residential buildings, use clear glass with good insulating value (low U-value with low-e coating). Mitigate unwanted solar gains with external shading and allow for passive cooling by natural ventilation.
- For commercial buildings, use either clear glass with effective external shading elements or dark or reflective glass (low shading coefficient) to control unwanted solar gains. Regardless of shading option, the glass should have a good insulating value (low U-value with low-e coating). Remove internal heat gains with other passive elements (e.g. natural ventilation).
- Incorporate operable external shading.
- Use thermal mass that is exposed to the conditioned space and combine it other passive elements to achieve its full energy-savings and comfort potential.
- Incorporate buffer spaces on all exposures whenever possible to optimize comfort and reduce both peak load and overall heating and cooling energy requirements.
- Design for cooling by natural ventilation in all building types.

BUILDING MATERIALS

Demolition Waste Management

The Demolition Waste Diversion Report must describe waste diversion over the course of a demolition that includes, at a minimum, the following information:

- Material disposed in a landfill, by volume
- Wood waste delivered to a recycling facility or reused, by volume
- Metal waste delivered to a recycling facility or reused, by volume
- Drywall, gypsum, associated material, delivered to a recycling facility or reused by volume
- Concrete or asphalt waste delivered to a recycling facility, by volume.

The report should include tracking tools used to organize diverted materials, and weigh bills confirming receipt of diverted materials. The Demolition Waste Diversion Report Template is available [here](#).

If your site has an existing structure that needs to be removed, consider these alternatives to demolition:

- **Adaptive Reuse and House Moving**
 - Building reuse helps preserve historical architecture, reduce waste, and offset consumption of raw materials required for new construction.
 - An old building can be reused for a different purpose than it was designed. As successful adaptive reuse project requires collaboration and planning between developers and municipalities.
 - Alternatively, if a building is no longer needed at the site it sits on, it could still be structurally sound and used at another location.
- **Deconstruction**
 - Compared to traditional demolition, deconstruction salvages and redistributes building materials, diverting up to 95% for reuse or recycling. Deconstruction is also quieter and reduces dust generation.
 - If a building can't be restored or relocated, consider deconstructing the structure
 - A deconstruction contractor can help determine if full deconstruction is suitable for your project.
- **Salvage**
 - Salvaged building materials can be reused onsite, taken to used building materials stores, donated to non-profit organizations, or sold directly to local builders.
 - If full deconstruction is not viable, it is possible to recover architectural pieces before demolition.
 - An appraiser can help identify materials that can be recovered and estimate the value of items that can be donated to charity.
- **Reuse of building materials**
 - Builder can use reclaimed building materials to add character to a construction through the use of heritage historic materials, support local small businesses, and reduce your project's carbon footprint.
 - Reclaimed lumber is highly valued and can be reused as flooring, wall cladding, or to manufacture furniture.

Hazardous Spills and Environmental Protection

Ensure that adequate containment facilities and clean-up equipment is available and utilized on site where use of such materials is necessary. Construction practices should aim to eliminate potential pollutant inputs (spillage of fuels, toxic construction materials, and other toxic waste) into stormwater runoff, surface waters or public right of way, during construction.

Construction Waste Disposal Station

The following table contains helpful tips when planning storage and transport of recyclable and discarded materials at a site.

Choose a collection option	Choose a hauling option	Organize the recycling program	Monitoring and continuous improvement
<p>Source separation Recyclable materials are separated on site and stored in separate bins or compartments and taken to a recycling facility. Source separated loads are typically charged lower tipping fees</p> <p>Commingled collection Waste materials are collected in a single bin and taken to a recycling facility for sorting. Commingled loads are typically charged a higher tipping fee</p> <p>Collection frequency For space-constrained sites, consider using smaller bins paired with more frequent collection.</p>	<p>Hauling Services Hire a hauler to provide the bins, collection schedule, and services you require. Some haulers also offer live loading and on-site source separation of recyclable materials and reusable items.</p> <p>Self-haul Using company staff and trucks to collect and haul recyclables works best for smaller sites.</p>	<p>Recycling station layout You can reduce contamination by designating a recycling area next to garbage bins and making sorting recyclables easier. You may also want to consider the bins you need based on the waste generated during each phase. On-site recycling stations will also make tracking waste for your recycling compliance report more efficient.</p> <p>Signage Place large, weatherproof signs for all bins to clearly communicate the intended material.</p>	<p>Monitor Progress Monitor waste management activities on an ongoing basis to ensure materials are salvaged, recycled and disposed of as specified in the waste management plan.</p> <p>Evaluate your project Ask your demolition, deconstruction or salvage contractor to provide you with the following information to track the volumes and cost of your project:</p> <ul style="list-style-type: none"> ▪ Type and quantity of materials salvaged, recycled and disposed. ▪ The name and location of the recycling and disposal facilities. ▪ Copies of receipts from recycling and disposal facilities and credits from material sales.

Low-Emitting Materials

Select low emitting materials and products for interior paints, coatings, adhesives, sealants, flooring, composite wood, ceilings, walls, and thermal and acoustic insulation.

1. Paints and coatings must meet Canadian Volatile Organic Compound (VOC) Concentration Limits for Architectural Coatings Regulations (SOR/2009-264)
2. Adhesives, and sealants must meet SCAQMD Rule 1168, effective July 1, 2005.
3. Paints, coatings, adhesives and sealants must not contain methylene chloride and perchloroethylene.
4. Stone, ceramic, powder-coated metals, plated or anodized metal, glass, concrete, clay brick and unfinished or untreated solid wood flooring must not include integral organic-based surface coatings, binders or sealants.
5. Composite Wood to comply with California Air Resources Board (CARB) ultra-low-emitting formaldehyde (ULEF) resins or no added formaldehyde resins. Composite wood cannot

exceed 0.05 ppm of formaldehyde as tested under EN-717-1:2004, ISO 16000-3:2010, ISO 16000-6:2011, ISO 16000-9:2006, ISO 16000-11:2006 or CEN/TS 16516:2013.

Embodied Emissions

For consistency in Life Cycle Assessment calculations, projects should use the National Research Council National guidelines for whole-building life cycle assessment available [here](#).

For projects pursuing LEED v4, calculations created to demonstrate achievement of the Life-cycle Impact reduction credit, Option 4, and reporting of the proposed building results, are acceptable to meet the intent of this requirements.

Certified Wood

Project should aim to use FSC certified sustainably harvested wood for a minimum of 25% of wood building components or at least one major structural or finishing application (e.g. framing, plywood, floors). To find FSC Products and Suppliers visit: [Find FSC Products & Suppliers | Forest Stewardship Council](#)

Locally Sourced Materials

Project should aim to incorporate at least 5 major materials (e.g. exterior walls or floors, windows, doors) and/or systems (e.g. insulated panels, lighting, heating) produced in British Columbia.

SUSTAINABLE SITE DESIGN

Habitat and Ecosystem

Restoration and enhancement of this site following development activities could include removal of invasive species and replacement with appropriate noninvasive species, creating connections between adjacent existing parks or biodiversity hotspots in order to minimize habitat fragmentation, while focusing on maintaining the interconnected components, functions and processes of local ecosystems within and surrounding the site.

Refer to provincial guidelines, Develop with care: Environmental Guidelines for Urban and Rural Land Development in British Columbia for best management and construction practices.

Trees and Landscape Plants

Ensure all natural areas are free of invasive plant species. Invasive plant species must be eradicated at the time of construction. Noninvasive vegetation and soils must be left undisturbed to the greatest extent operationally feasible. Mechanical removal of invasive plants must be chosen over chemical treatment to the greatest extent operationally feasible. Depending on the extent, type and density of invasive plant cover, pre-planting treatments shall be undertaken and may include removal, repeated mowing during the growing season, and regulated herbicide treatment.

Refer to “Plant Materials Suitable for the Whistler Climate” and “Bear Attractants Overview” for bear attractant plants and non-native species that will not be approved.

Soils and Fill

In order to absorb runoff and ensure plants survive and thrive, maintain a minimum 15cm/6” quality topsoil.

Outdoor Lighting

For guidance on outdoor lighting, see resources provided by the International Dark-Sky Association: <https://www.darksky.org/our-work/lighting/>

Urban Heat Island Mitigation

Many communities are taking action to reduce urban heat islands using the following strategies:

- Using trees and vegetation to reduce heat islands
 - Trees and other plants help cool the environment, making vegetation a simple and effective way to reduce urban heat islands.
 - Trees and vegetation lower surface and air temperatures by providing shade and through evapotranspiration. Shaded surfaces, for example, may be 11 to 25°C cooler than the peak temperatures of unshaded materials. Evapotranspiration, alone or in combination with shading, can reduce peak summer temperatures by 1 to 5° C.
 - Trees and vegetation are most useful as a mitigation strategy when planted in strategic locations around buildings or to shade pavement in parking lots and on streets. Researchers have found that planting deciduous trees or vines to the west is typically most effective for cooling a building, especially if they shade windows and part of the building’s roof.

- Using green roofs to reduce heat islands
 - A green roof, or rooftop garden, is a vegetative layer grown on a rooftop. Green roofs provide shade, remove heat from the air, and reduce temperatures of the roof surface and surrounding air. Using green roofs in built environments can moderate the heat island effect, particularly during the day. Green roof temperatures can be 1 to 5°C lower than those of conventional roofs and can reduce city-wide ambient temperatures. In addition, green roofs can reduce building energy use compared to conventional roofs, reducing peak electricity demand and leading to annual savings on operation costs.
- Using cool roofs to reduce heat islands
 - A high solar reflectance, or albedo, is the most important characteristic of a cool roof as it helps to reflect sunlight and heat away from a building, reducing roof temperatures. A high thermal emittance also plays a role, particularly in climates that are warm and sunny. Together, these properties help roofs to absorb less heat and stay up to 28 to 33°C cooler than conventional materials during peak summer weather.
 - Building owners and roofing contractors have used cool roofing products for more than 20 years on commercial, industrial, and residential buildings. They may be installed on low-slope roofs (such as the flat or gently sloping roofs typically found on commercial, industrial, and office buildings) or the steep-sloped roofs used in many residences and retail buildings.
- Using cool pavements to reduce heat islands
 - Cool pavements include a range of established and emerging technologies that communities are exploring as part of their heat island reduction efforts. The term currently refers to paving materials that reflect more solar energy, enhance water evaporation, or have been otherwise modified to remain cooler than conventional pavements.
 - Conventional paving materials can reach peak summertime temperatures of 48 to 67°C, transferring excess heat to the air above them and heating stormwater as it runs off the pavement into local waterways. Due to the large area covered by pavements in urban areas, they are an important element to consider in heat island mitigation.
 - Cool pavements can be created with existing paving technologies (such as asphalt and concrete) as well as newer approaches such as the use of coatings or grass paving. Cool pavement technologies are not as advanced as other heat island mitigation strategies, and there is no official standard or labeling program to designate cool paving materials.

GREEN MOBILITY

EV Charging Infrastructures

Government rebates are available for EV charging infrastructures which can substantially reduce the costs of planning and deployment. The Province of British Columbia's CleanBC program offers three rebate streams to support EV charging infrastructures:

1. EV-ready plans rebates – fund the planning and design of an EV charging system;
2. EV-ready infrastructure rebates – assist the installation of electrical equipment required for charging (e.g. electrical panels, breakers, conduit, wiring, etc.);
3. Charging stations rebates – support acquisition and installation of networked Level 2 EV chargers.

More information on these rebates is available at:

- <https://goelectricbc.gov.bc.ca/>
- <https://pluginbc.ca/incentives/>

Short and Long Term Bicycle Parking

Increased uptake in cycling as a viable travel mode may not reach its full potential if bicycle parking security is not considered at the planning and design stages. Bicycle parking should consider all types of bicycles and be designed to meet the needs of All Ages and Abilities (AAA). To that end, there are several fundamental guiding principles that influence how both bicycle parking is located and accessed:

<i>Well-located</i>	Convenient, accessible, as close as possible to the destination, and weather protected. Ideally within 15 m of pedestrian building access points.
<i>Stair-free Access</i>	Provision of ramps or elevators large enough to accommodate all types of bicycles. Slopes should be limited to 6%.
<i>Minimum Widths</i>	Appropriate widths should be provided along all routes required to access bicycle parking facilities, including along ramp accesses, at doorways, and aisle widths in bicycle parking rooms. A minimum clear width of 2 m should be targeted.
<i>Signage</i>	Integrated, high-quality, and simple bicycle parking signage should be provided to indicate the availability and location of an off-street bicycle parking area.
<i>Visibility</i>	The location selected for bicycle parking shall be easily identifiable by cyclists as they are riding. It will also help to reduce theft and vandalism
<i>Barrier-free</i>	Access to bicycle parking facilities should be direct and free from obstacle to accommodate all users. Provide breaks in long lengths or span of bicycle racks to allow users a more convenient path for access and egress.
<i>Detectability</i>	Design should take into consideration users with physical, sensory, or cognitive impairments and should ensure the facilities are both easily detectable for these users and do not create obstacles.

Lighting Quality lighting shall be provided to ensure facilities are well-lit to improve the overall security of all bicycle parking facilities. Tamper-proof features should be considered to prevent vandalism

Security Racks in visible, well-lit places that have high levels of natural surveillance.

End of Trip Facility

Providing showers and change rooms is a common amenity to encourage bicycle use, particularly for commuter trips. End of trip facilities typically contain a changing room equipped with lockers for the storage of personal items and shower rooms. Shower rooms should include:

- Mirrors, electrical outlets, first-aid kits, hooks and/or bench
- Location for a clothes dryer for wet gear in a well ventilated area
- Non-slip surfaces, heating, privacy, security, adequate lighting and ventilation

Active Transportation Amenities

Bicycle repair station can support both short and long-term bicycle parking by making it more convenient to cycle. This type of amenity help to address challenges or concerns that bicycle users experience such as needing a place to inflate tires and make minor repairs. For adequate clearance to maneuver and make bicycle repairs, recommended clear area of a bicycle repair stand is 2.4 meters by 1.2 meters, with the back of the repair stand placed at least 0.3 meters from the wall. A basic bicycle repair stand is recommended to have:

- Supporting arm to hold a bicycle without causing damage
- Basic tools attached to the stand with tamper-proof hardware
- An air pump attached to the stand with tamper-proof hardware

For design guidelines, refer to the British Columbia Active Transportation Design Guide (2019 Edition)

WATER CONSERVATION & RAINWATER MANAGEMENT

Integrated Potable Water Management Approach

Integrated approach to water management at the site and building scale should be used and be demonstrated through the production of a Water Balance for the building(s) and parcel that quantifies water inputs, uses, and outputs. The Water Balance should include input water sources including potable water, and rainwater, and outflows to the sanitary, combined, and storm sewers. The Water Balance should be produced for the 'baseline' and 'proposed' scenarios and demonstrate compliance with the minimum potable water use reductions over baseline specified in this policy, achieved by taking an integrated approach to water management at the site scale.

Indoor Potable Water Use

Whenever possible, new water fixtures that are eligible for labeling should be WaterSense® labeled. For guidance on WaterSense labeling, visit the EPA Watersense website:

<https://www.epa.gov/watersense/watersense-label>

SOLID WASTE

Design Considerations for Waste Management Facility

In order to ensure sufficient space is allocated for collection of materials and to create efficient centralized collection areas the following considerations should be implemented:

- Install a roll-up door to ensure there is enough space to move and collect/empty containers
- The facility must be able to accommodate an appropriate number of containers that will not overflow between collection days
- Total area of the facility should be about 2.0 to 2.25 times the physical footprint of the containers to allow for adequate space for maneuvering
- Must be configured to allow each garbage and recycling container to be individually accessed, removed and replaced without having to take out other containers.
- Must have adequate ventilation for reduced smell and odor, and be in compliance with the BC Building Code requirements for ventilation
- Must be equipped with locked doors or the containers should also be locked if they are accessible from outside the building to avoid illegal dumping
- Must be at grade and accessible to all occupants, including those with restricted mobility. If an auxiliary area is designated for the facility outside the building, the area must be located adjacent to an entry point into the building for easy access by users, including those with restricted mobility

In order to provide appropriate access route and turning radius for collection vehicles, the following design elements should be implemented:

- The driveway access must have a minimum width of 6 metres at the points of entrance and exit for the site
- The slope of access must not exceed 6%
- The vehicle access route must have a minimum width of 4.5 metres and a minimum vehicle clearance of 4.5 metres must be maintain throughout the entire access route
- Provide the collection vehicle a minimum turning radius of 12.5 metres throughout the entire access route
- Building structure, such as an overhang, cannot extend pass the turning radius to prevent damage to the building