

Ready, Set, Solve: The CRD Student Climate Challenge

Township of Esquimalt
Development Permit Areas for Water Conservation, Energy Conservation
and Greenhouse Gas Reduction
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A. Project Request

The Township of Esquimalt began a review of its Official Community Plan (“OCP”) in fall 2015. The revised OCP is expected in late 2017.¹ It is anticipated to include new development permit areas (“DPAs”) for climate action: water conservation, energy conservation, and reduction of greenhouse gas (“GHG”) emissions.²

The Township of Esquimalt requests a review of literature on DPA guidelines with a specific focus on guidelines for climate action, a jurisdictional review of DPAs for climate action among local governments in British Columbia, and draft guidelines for water conservation, energy conservation, and GHG reduction based on the review completed.³

B. Literature Review: Authority to Enact Development Permit Areas

Local governments had authority to enact DPAs since 1985 for purposes such as protection of the natural environment and the form and character of development.⁴ DPAs allow for site-specific regulations, providing local governments with a tool to respond to unique conditions on a parcel of land, such as hazards or sensitive ecosystems.⁵ In 2008, three climate action purposes were added; local governments can now establish DPAs to promote water conservation, energy conservation, and GHG emissions reduction.⁶

Water conservation plays a part in both mitigating and adapting to climate change. Treating and transporting water and wastewater requires a large input of energy, while reducing water use can help a community prepare for future water shortages expected to accompany climate change.⁷ Energy conservation, and consequently, GHG reduction decelerates the effects of global

¹ Township of Esquimalt, *Official Community Plan Review*, online: Township of Esquimalt <<http://www.esquimalt.ca/businessDevelopment/ocpReview/>>.

² Interview of Bill Brown, Director of Development Services, Township of Esquimalt (4 February 2016) [Brown Interview].

³ Capital Regional District, “Ready, Set, Solve – 2016 Challenges” [nd].

⁴ British Columbia, Ministry of Community, Sport, and Cultural Development, Intergovernmental Relations and Planning Division, *Development Permit Areas for Climate Action: A Guide for Energy Conservation, Water Conservation, and GHG Reduction*, (November 2011) at 1 [British Columbia, “Development Permit Areas for Climate Action”].

⁵ William Buholzer, *Local Government in British Columbia*, 5ed (Vancouver: Continuing Legal Education Society of British Columbia, 2013) at 239.

⁶ British Columbia, “Development Permit Areas for Climate Action”, *supra* note 4 at 1.

⁷ District of Saanich, *Climate Action Plan*, (2010) at 27; and British Columbia, “Development Permit Areas for Climate Action” *supra* note 4 at 8.

warming and climate change. The province legislated targets to reduce GHG emissions⁸ and local governments that sign the Climate Action Charter⁹ can pursue their own climate action initiatives, including designation of these DPAs.

1. Statutory Authority

A local government has authority under Section 488(1) of the *Local Government Act* to specify DPAs to promote energy conservation, water conservation, and reduction of greenhouse gas emissions.¹⁰ DPAs require that a permit be acquired before any new development occurs; the landowner must obtain a development permit before subdivision, construction of, addition to, or alteration of a building or other structure, or alteration of land, unless the municipality has specified conditions under which a development permit is not required.¹¹

1.1 Scope of authority

Climate action DPAs designated under sections 488(1)(h), (i), or (j) of the *Local Government Act* may impose requirements respecting landscaping, siting of buildings and other structures, form and exterior design of building and other structures, specific features in the development, and machinery, equipment and systems external to buildings and other structures.¹² They may also establish restrictions on the type and placement of trees and other vegetation.¹³

1.2 Required components

DPAs must be set out in an OCP or a zoning bylaw and must include a description of the special conditions or objectives that justify the designation.¹⁴ The OCP or a zoning bylaw must also specify guidelines for how the objectives are to be met.¹⁵ These guidelines set out what is required for a development permit to be granted, and what conditions a permit may impose.¹⁶

1.3 Development approval information areas

If a local government requires reports accompanying development applications, it must designate a development approval information area under the *Local Government Act*, section 486.¹⁷ A local government may specify either the circumstances in which approval information may be required, an area in which approval information may be required, or an area in which under certain circumstances approval information may be required.¹⁸ The local government must also establish procedures and policies that set out what information is required and the process for requiring this information.¹⁹

⁸ *Greenhouse Gas Reduction Targets Act*, SBC 2007, c 42.

⁹ Union of BC Municipalities & Ministry of Community, Sport and Cultural Development, “British Columbia Climate Action Charter” (2008), *Government of British Columbia*, online: <http://www.cscd.gov.bc.ca/lgd/library/BC_CLIMATE_ACTION_CHARTER.pdf>.

¹⁰ *Local Government Act*, RSBC 2015, c 1, s 488(1)(h)-(j) [*LGA*].

¹¹ *Ibid*, ss 488(4) and 489.

¹² *Ibid*, s 491(9)(a)-(e).

¹³ *Ibid*, s 491(10).

¹⁴ *Ibid*, s 488(2).

¹⁵ *Ibid*.

¹⁶ William Buholzer, *British Columbia Planning Law and Practice*, 39ed (Markham, ON: LexisNexis Canada, 2001) at 11-28.

¹⁷ British Columbia, “Development Permit Areas for Climate Action” *supra* note 4 at 10.

¹⁸ *LGA*, *supra* note 10 s 485(1)(a)-(c).

¹⁹ *Ibid*, s 486(1).

2. Guiding Principles from Case Law

2.1 Content

Case law has addressed incorporation of third party standards and the required specificity for guidelines. In *Rocky Point Metalcraft Ltd v Cowichan Valley (Regional District)*, the court confirmed that a DPA can incorporate third party guidelines (in this case, Environmental Guidelines published by The Ministry of Water, Land and Air Protection, and Fisheries and Oceans Canada).²⁰

In *511784 BC Ltd v Salmon Arm (District)*, development permit guidelines were challenged for being vague and uncertain. The challenged phrases were “all pertinent site planning criteria,” “in the manner that is appropriate,” “complements surrounding developments and topographical features,” and “addressing view opportunities and providing an interesting streetscape for the travelling public.”²¹ The court affirmed the test for uncertainty and found that the challenged guidelines were not impermissibly vague or uncertain:

The general approach to examining a municipal by-law whose validity is challenged on the grounds of uncertainty or vagueness is that they must be so pronounced that a reasonably intelligent person would be unable to determine the meaning of the by-law and govern his actions accordingly. A mere difficulty in interpretation will not be sufficient.²²

The court further held that in some cases it is desirable for guidelines to be broad to “give Council the necessary flexibility to exercise its discretion on a case by case basis.”²³ If guidelines are “sufficiently certain to provide direction to Council in the exercise of its discretion,” Council can give more specific direction to a permit applicant “by including requirements and conditions that will meet the OCP’s policies and objectives.”²⁴

2.2 Application

In deciding whether to grant a permit application, Council is not making a policy decision, but rather “applying objective standards set out in previously adopted zoning by-laws, OCPs, or other legislative acts representing the policy decisions of Council.”²⁵ Council must rely on the guidelines set out in the OCP or zoning by-law.²⁶ Council has discretion to allow or deny a development permit application on a case-by-case basis, but this discretion is limited and must be exercised according to the guidelines.²⁷ Council must apply the guidelines in an objective manner and must do so in a way that is consistent with the any applicable zoning bylaws.²⁸

²⁰ *Rocky Point Metalcraft Ltd. v Cowichan Valley* (Regional District), 2012 BCSC 756 at para 37.

²¹ *511784 BC Ltd. v Salmon Arm (District)*, 2001 BCSC 245 at para 33 [*Salmon Arm*].

²² *Dhillon v Richmond (Municipality)* (1987), 37 MPLR 243 (BCSC) at para 250, in *Salmon Arm*, *supra* note 21 at para 34.

²³ *Salmon Arm*, *supra* note 21 at para 37.

²⁴ *Ibid* at para 41.

²⁵ *Westfair Foods Ltd. v Saanich (District)*, [1997] BCJ No 2852 at para 17, 1997 CarswellBC 2759 [*Westfair Foods*].

²⁶ *Ibid* at paras 24-27.

²⁷ *Washi Beam Holdings Corp. v West Vancouver (District)*, [1999] BCJ No 617 at para 33, 1999 CarswellBC 536 [*Washi Beam*].

²⁸ *Yearsley v White Rock (City)*, 2009 BCSC 719 at paras 28-29.

Additionally, guidelines are distinct from the objective or justification for a DPA, and Council's decision must rely on the guidelines, not the objectives or justification.²⁹

C. Development Permit Area for Water Conservation

This section provides sample guidelines for a water conservation DPA. The guidelines are based on a review of DPAs and water conservation initiatives from several municipalities in British Columbia. The draft guidelines were selected with an aim to provide a comprehensive picture of the options available.

Following instructions from Bill Brown, Director of Development Services for Esquimalt, the guidelines were drafted to apply to the entire municipality.³⁰ The majority of municipalities surveyed used this approach; however, DPAs can be designated for smaller and more specific areas. This second approach is used by the Resort Municipality of Whistler, and could be considered if more specific guidelines are desired (to distinguish, for example, between residential and commercial areas).

The guidelines are primarily prescriptive, outlining specifically how the objectives are to be met. Prescriptive guidelines are simple and unambiguous, and can be easier to follow and enforce. However, performance-based guidelines, which set the objective that must be achieved but leave how to achieve it up to the developer or owner, can allow for greater innovation and site-specific solutions. To draft performance-based guidelines, the Township would need to determine specific objectives and how they will be measured.³¹

1. Jurisdictional Review: Water Conservation DPAs in British Columbia

1.1 Alignment with Other Objectives

Many of the possible guidelines for water conservation provide opportunities to align with other municipal objectives and other DPAs. DPAs for climate action should consider future context of a changing climate, and can work in concert with other municipal initiatives.³² Vegetation providing ground cover for water conservation purposes can reduce heat island effects in a city, shade houses for energy conservation, and create green spaces for a more liveable community.³³ Municipal objectives to retain urban forests align with a water conservation guideline to retain existing trees instead of planting and watering new ones through to maturity. To achieve multiple objectives, trees should be selected to be appropriate to a changing climate (i.e. able to withstand both droughts and severe storms) and to provide shade in summer months while allowing sunlight to reach houses during the winter (i.e. deciduous trees).³⁴ Breaking up large sections of paved areas to allow rainwater infiltration also reduces heat island effects, and may align with a DPA for environmental protection if existing vegetation is retained or native plants are used.³⁵

²⁹ *Washi Beam*, *supra* note 27 at para 40.

³⁰ Brown Interview, *supra* note 2.

³¹ British Columbia, "Development Permit Areas for Climate Action" *supra* note 4 at 11.

³² British Columbia, "Development Permit Areas for Climate Action" at 8.

³³ *Ibid* at 13-15.

³⁴ *Ibid* at 8.

³⁵ *Ibid* at 28

1.2 Preparing for Successful Implementation

A successful DPA requires that the guidelines be appropriate to the local context and have buy-in from community members. Consultation with community members, developers, and other stakeholders can help ensure that the guidelines fit the local context and are received in as favourable a light as possible. For example, discussions with the local development and building sector can help the municipality identify cost-effective guidelines while also giving the municipality an opportunity to convince builders and developers of guidelines importance of the guidelines.³⁶

1.3 Complementary Measures

Water conservation DPAs can address several areas of water use, but are limited in their application by the *Local Government Act*. Consequently, a municipality may wish to pursue complementary measures, relying on other municipal powers to support water conservation. For example, a municipality can enact regulatory and zoning bylaws that encourage water conservation, ensure that zoning bylaws accommodate DPAs guidelines, and engage the public through education and consultation.³⁷ A municipality may also align a water conservation DPA with municipal planning for stormwater management. Although a municipality cannot impose building regulations that exceed the standards set out in the BC Building Code, a municipality can encourage green buildings.³⁸ An example of such encouragement is the Township of Esquimalt's Green Building Checklist, aiming to make property owners and developers aware of green features that can be included in a new development.³⁹ Such tools can support developers in achieving water conservation within buildings, helping Esquimalt meet its sustainability goals.

2. DPA for Water Conservation: Draft Guidelines

2.1 Scope

All lands within the Township of Esquimalt.

2.2 Category

Section 488(1)(i) of the *Local Government Act* – water conservation.

2.3 Justification

Section 488(1)(i) of the *Local Government Act* allows for Development Permits for the establishment of objectives to promote water conservation.⁴⁰ Guidelines that conserve water also reduce energy use from treating and distributing potable water and treating wastewater, and help communities prepare for expected water shortages from climate change.⁴¹ The Water Conservation Development Permit Area is intended to implement the Township of Esquimalt's sustainability objectives to develop a "green economy" and reduce the overall risks and impacts of climate change.⁴²

³⁶ *Ibid* at 5.

³⁷ *Ibid* at 5.

³⁸ BC Climate Action Toolkit, *Smart Site and Building Design*, online: BC Climate Action Toolkit <<http://www.toolkit.bc.ca/smart-site-and-building-design>>.

³⁹ Township of Esquimalt, *Green Building Checklist*, 11 January 2011, at 1.

⁴⁰ Adapted from Lake Country, *Official Community Plan (2010-2030)*, (2010) at 165 [Lake Country OCP].

⁴¹ Adapted from British Columbia, "Development Permit Areas for Climate Action" *supra* note 4 at 8.

⁴² Township of Esquimalt, "Economic Round Table Backgrounder: Environment", at 1.

2.4 Requirements of Owners of Land within the Development Permit Area

Owners of land within this Development Permit Area must not do any of the following without first obtaining a development permit in accordance with the guidelines for this Development Permit Area:

- (i) subdivide lands;
- (ii) construct, add to, or alter a building or other structure;

without first obtaining a Development Permit in accordance with the guidelines of this Development Permit Area. □

2.5 Guidelines

2.5.1 Surfaces

Water conservation guidelines may address landscaping under Section 491(9)(a) of the *Local Government Act* and specific features in the development under Section 491(9)(d).⁴³

- Maximize the use of permeable paving materials and break up large areas of paved surfaces with vegetation.⁴⁴
- Use mulch or woodchips for walking paths and to cover exposed soil.⁴⁵
- Maximize the ratio of planted surfaces to unplanted surfaces.⁴⁶

2.5.2 Vegetation

Local governments can regulate the type and location of trees and other vegetation under Section 491(10) of the *Local Government Act*.⁴⁷ Water conservation objectives can be achieved by using drought resistant vegetation, grouping vegetation to reduce watering requirements, and using vegetation to provide shade and soil cover.

- Use drought resistant and native plants that require minimal irrigation.⁴⁸
- Retain existing trees and vegetation as much as possible.⁴⁹
- Group plants with similar water needs into hydro-zones.⁵⁰
- Identified sunny and wind-exposed areas. Plant drought-resistant plants in these areas.⁵¹

2.5.3 Stormwater Management and Collection/Use

DPAs for water conservation can impose requirements in relation to specific features in the development and machinery, equipment, and systems external to buildings under Section 491(d)

⁴³ LGA, *supra* note 10, s 491(9)(a), 491(9)(d).

⁴⁴ District of Sooke, *Official Community Plan*, (2010) at 99 [Sooke OCP]; Lake Country OCP, *supra* note 32 at 145; City of Langford, *Official Community Plan*, (15 June 2015) at 158 [Langford OCP]; and British Columbia, “Development Permit Areas for Climate Action” *supra* note 4 at 28.

⁴⁵ City of Vancouver, *Water Wise Landscape Guidelines*, (21 June 2009), at 8 [Vancouver]; British Columbia, “Development Permit Areas for Climate Action” *supra* note 4 at 28.

⁴⁶ Vancouver, *supra* note 37 at 8.

⁴⁷ LGA, *supra* note 10, s 491(10).

⁴⁸ Lake Country OCP, *supra* note 32 at 149; City of Kelowna, *Official Community Plan: Chapter 14*, (28 September 2015) at 11 [Kelowna OCP]; Langford OCP, *supra* note 36 at 105; Resort Municipality of Whistler, *Official Community Plan*, (25 May 2009) at 92 [Whistler OCP].

⁴⁹ Sooke OCP, *supra* note 36 at 99-100.

⁵⁰ Kelowna OCP, *supra* note 40 at 11; Vancouver, *supra* note 38 at 5-6.

⁵¹ Vancouver, *supra* note 38 at 5-6.

and (e) of the *Local Government Act*.⁵² These “specific features” include ponds that capture and store rainwater, while “external systems” include rainwater collection systems.⁵³ Rainwater can replace potable water for irrigation.

- Incorporate rainwater collection systems into roof design and landscaping.⁵⁴
- Incorporate rain gardens, retention ponds, and bio-swales into landscaping where appropriate, and landscape to direct rainwater towards vegetation.⁵⁵

2.5.4 Water features and irrigation

DPAs for water conservation can impose requirements relating to machinery, equipment, and systems external to buildings under Section 491(e) of the *Local Government Act*.⁵⁶ Regulating water features and irrigation systems can directly reduce water use.

- Use recirculated water systems for any water features such as pools and fountains.⁵⁷
- Use drip irrigation, soaker hoses, or low-volume irrigation where possible.⁵⁸

2.5.5 Development approval information area

The Township of Esquimalt may wish to designate a development approval information area to support the water conservation DPA and apply to all DPAs or only the water conservation DPA.

- The City further designates all of the lands designated as a water conservation development permit area as a development approval information area under Section 486 of the *Local Government Act*. Applicants for a Development Permit may be required to submit appropriate reports certified by a qualified professional indicating the impact of the proposed development on water conservation objectives and any mitigation recommendations by the qualified professional. The justification for these designations is to ensure that Council has the ability to secure necessary information for considering development applications.⁵⁹

D. Development Permit Area for Energy Conservation and GHG Reduction

This section proposes a DPA for both energy conservation and GHG reduction. To develop guidelines, case studies are performed on local governments with these DPAs currently in place. Given that climate action DPAs were only introduced in 2008, there are few local governments that have implemented them. These include: District of Sooke, the City of Fort St. John, the District of Lake Country, and the Resort Municipality of Whistler. An analysis of existing guidelines indicate that more effective guidelines have clear and precise language, suggest ways a developer can comply, and offer reasons why certain requirements are imposed. Draft DPA guidelines for energy conservation and GHG reduction that will fit Esquimalt are then presented.

⁵² *LGA*, *supra* note 10, s 491(d)-(e).

⁵³ Ministry of Community, Sport, and Cultural Development, Local Government Department, *Development Permit Areas for Climate Action*, online: Government of British Columbia
<http://www.cscd.gov.bc.ca/lgd/planning/development_permit_areas_for_climate_action.htm>.

⁵⁴ Whistler OCP, *supra* note 40 at 92; Kelowna OCP, *supra* note 40 at 13; Lake Country OCP, *supra* note 32 at 166.

⁵⁵ Vancouver, *supra* note 38 at 6; British Columbia, “Development Permit Areas for Climate Action” *supra* note 4 at 28-29.

⁵⁶ *LGA*, *supra* note 10, s 491(e).

⁵⁷ Kelowna OCP, *supra* note 40 at 11; Lake Country OCP, *supra* note 32 at 166.

⁵⁸ Vancouver, *supra* note 38 at 9; Kelowna OCP, *supra* note 40 at 11-13.

⁵⁹ Adapted from Sooke OCP, *supra* note 36 at 95; and Langford OCP, *supra* note 36 at 119.

1. Jurisdictional Review: Energy and GHG Reduction DPAs in British Columbia

1.1 District of Sooke (“Sooke”)

Sooke is examined as the main case study since, like Esquimalt, it is located in the Capital Regional District, has similar characteristics such as climate, and its OCP provides the most guidelines for energy conservation and GHG reduction. These are found in the Town Centre DPA,⁶⁰ originally designated to maintain building form and character. Justification of this DPA refers to ten Smart Growth Principles.⁶¹ Principle 3 to “provide a variety of transportation choices”⁶² is quite pronounced in this DPA and several guidelines encourage establishing more cycling lanes, improving pedestrian connections to the waterfront, and improving the pedestrian experience to encourage more walking.⁶³ Additional siting guidelines could be provided to build more compactly, thereby providing more space for cycling lanes and pedestrian pathways between buildings.

Landscaping guidelines specify that landscaping materials should be coordinated with building siting to provide shade in the summer and allow sun through in the winter.⁶⁴ This guideline states what should be done, but does not provide adequate detail on how to accomplish it. For example, it could recommend the use of deciduous trees and to plant them on the south and west sides of the building. Guidelines could be extended for landscaping around parking areas to provide more shade in the summer and more heat in the winter for vehicles. Guideline 7.4.4.1.1. states to retain existing valuable trees.⁶⁵ This provides no direction in determining which trees would be considered valuable. It would be more helpful to simply encourage preservation of all trees and have council consider tree removal on a case-by-case basis.

While the guidelines above are part of Section 7.4.4.1. Site Design and Layout, which mainly addresses building form and character, the DPA also has a separate set of guidelines exclusively for energy conservation and GHG reduction in Section 7.4.4.4.⁶⁶ First, use of non-essential impervious surfaces should be minimized. Again, words such as “valuable” and “non-essential” are not helpful for an applicant. For further guidance, examples of non-impervious surfaces that would comply can be given and reasons why a certain guideline is in place could also help an applicant to strategize ways to comply. Here, council likely wants to decrease impervious surfaces to increase green space, which would also allow for future planting. Second, building design should have passive building features such as Built Green® and incorporate solar ready features. This likely gives a developer enough direction on where to look to meet the objectives. Guidelines for siting and building orientation could also be added, such as orienting buildings and roofs to the south to maximize solar uptake. Overall, Sooke’s DPA guidelines give some direction on how to achieve energy conservation and GHG reduction, but some points could benefit from the use of examples and further clarification.

⁶⁰ Sooke OCP, *supra* note 36.

⁶¹ “10 Smart Growth Principles”, *Smart Growth BC*, online: <<http://www.smartgrowth.bc.ca/>>.

⁶² *Ibid.*

⁶³ Sooke OCP, *supra* note 36, ss 7.4.4.1.f., 7.4.4.1.i., 7.4.4.1.j., 7.4.4.1.k.

⁶⁴ *Ibid.*, s 7.4.4.1.d. Coordinate landscape materials and building siting to provide shade from direct sunlight during the summer, while allowing sunlight penetration into the building in winter.

⁶⁵ *Ibid.*, s 7.4.4.1.1. Retain existing valuable trees and vegetation as much as possible.

⁶⁶ *Ibid.*, s 7.4.4.4.

1.2 City of Fort St. John (“FSJ”)

FSJ has a Solar Domestic Hot Water DPA that covers all residential zones and requires all new single detached homes to be equipped with solar panels for water heating.⁶⁷ This DPA is justified on the basis that as part of the Climate Action Charter, FSJ pledged to achieve carbon neutrality by 2012. The guidelines require that solar panels be installed, panels must face south (or within 15 degrees of south), and includes performance-based guidelines with specific solar efficiency requirements.⁶⁸ If effective, the DPA could be expanded to commercial zones as well. Guidelines could also give homeowners the choice to use solar panels for electricity instead of or in addition to water heating.

The requirement for hot water solar panels has the potential to be problematic, however, it likely does not interfere with the BC Building Code. Some installation to the water heater is required inside the building, but the solar panels are still external. With a broad interpretation of the *LGA*, this guideline likely falls under “machinery, equipment and systems external to buildings and other structures.”⁶⁹ To avoid any potential conflict though, instead of requiring the installation of solar panels, a performance-based guideline should be in place. For example, the Merton Rule stipulates that developments over 10,000 square feet or 10 residential units must produce at least 10% of its energy through renewable means.⁷⁰ Solar panel installation would then be a suggestion of how to meet this performance requirement.

1.3 District of Lake Country (“Lake Country”)

Lake Country has a DPA specifically for GHG reduction that covers the entire municipality.⁷¹ For landscaping, guidelines indicate planting should be on the south and west ends of the parcel to create shade, but should also specify that plants should be chosen to provide shade in the summer and sunlight in the winter, particularly since Lake Country experiences harsher winters than the west coast. The guidelines recognize this, where it states large windows should be built to increase sunlight in the winter, and this can be expanded to specify more windows should be placed on the south side. Buildings should be oriented (presumably to the south) to maximize solar gain and roofs should be oriented to the south to allow for potential use of solar panels.

Some interesting guidelines indicate that subdivision should maximize site connectivity to nearby amenities and allow access for public transit.⁷² These guidelines create “villages” with a variety of amenities in one place, there is a transit hub to reach this village, and one can walk to different services within the village. Guidelines also note that density should also be increased to allow for more green space in between buildings, which would also provide more space for cycling lanes and pedestrian pathways in the village.

⁶⁷ City of Fort St. John, *Official Community Plan*, (2011) Schedule “A”.

⁶⁸ City of Fort St. John, bylaw No 2181, *Zoning By-Law, 2014*, Schedule “A”.

⁶⁹ *LGA*, *supra* note 10, s 491(9)(e).

⁷⁰ Climate Solutions Portfolio, “The Merton Rule” (2007), *BC Sustainable Energy Association*, online: <http://www.bcsea.org/sites/default/files/10_Merton_Rule.pdf> [Merton Rule].

⁷¹ Lake Country OCP, *supra* note 32 at 165-166.

⁷² *Ibid.*

1.4 Resort Municipality of Whistler (“RMOW”)

The Alpine North and Function Junction DPAs include energy conservation purposes, and justifications include the municipality’s goals to minimize ecological and financial costs of new development.⁷³ Guidelines are the same for the two DPAs and are similar to those mentioned above. An interesting guideline is that north-facing windows should be minimized. Since they do not receive as much sunlight, this is likely to reduce loss of heat and insulation. Likewise, skylights are discouraged, which could also make solar panel installation difficult.

Overall, examination of these case studies provides a better understanding of how guidelines can be shaped to conserve energy and reduce GHG emissions. Vague guidelines do not provide enough direction for developers and so wording should be quite specific. Examples of different ways to comply or reasons why certain requirements are imposed are not necessary, but this additional guidance can be quite helpful. These strategies are now applied to develop DPA guidelines for energy conservation and GHG reduction in Esquimalt.

2. DPA for Energy Conservation and GHG Reduction: Draft Guidelines

2.1 Scope

All lands within the Township of Esquimalt.

Note: DPAs can designate more than one purpose under *LGA* section 488(1) and can overlap DPAs with other purposes. Esquimalt currently has seven non-overlapping DPAs. To achieve its GHG targets, Esquimalt should designate a new DPA for both energy conservation and GHG reduction that blankets the municipality, overlapping all other existing DPAs. This would also be more efficient than revising the guidelines of each existing DPA to include these purposes.

2.2 Category

Section 488(1)(h) of the *Local Government Act* – energy conservation.

Section 488(1)(j) of the *Local Government Act* – greenhouse gas reduction.

2.3 Justification

British Columbia recognizes the importance of energy conservation and GHG reduction in its Climate Action Plan. The province has legislated GHG targets and requires the cooperation of local governments to achieve them. As part of its pledge to the local community Climate Action Charter, Esquimalt set its own target to reduce GHG emissions by 38% of 2010 levels by 2020.⁷⁴ Designating this DPA will shape future development to encourage alternatives for commuting such as walking and cycling to reduce GHG emissions, and will assist developers in building sustainably to conserve energy in Esquimalt.

2.4 Requirements of Owners of Land within the Development Permit Area

Owners of land within this Development Permit Area must not do any of the following without first obtaining a development permit in accordance with the guidelines for this Development Permit Area:

⁷³ Whistler OCP, *supra* note 40 at 89-95.

⁷⁴ Revised, Corporation of the Township of Esquimalt, revised bylaw No 2646, *Official Community Plan Bylaw, 2007, No 2646, s 7.1.2.6.*

(iii) subdivide lands;
(iv) construct, add to, or alter a building or other structure;
without first obtaining a Development Permit in accordance with the guidelines of this Development Permit Area. □

2.5 Guidelines

2.5.1 Landscaping

- Use deciduous trees for landscaping as they provide more shade in the summer and allow more sunlight through in the winter.
- Plant trees and vegetation on the south and west sides of the building where there is more direct sun exposure.
- Plant coniferous trees on the north and east sides of the building such that they do not block sunlight in the winter, but can help to block winter winds.
- Plant trees near roadways, driveways, and parking lots to provide more shade in the summer and allow sunlight through in the winter for parked vehicles.
- Plant more trees for greater carbon storage. Any tree removal is discouraged.
- Plant shorter and sturdier vegetation closer to buildings and other structures, and taller and structurally weaker vegetation further away to avoid potential damage from strong winds blowing over vegetation.
- For commercial areas, increase green space between buildings. Landscape pathways to improve the pedestrian experience and promote walking.

2.5.2 Siting of Buildings and Other Structures

- Build new developments more compactly with density increased upwards instead of outwards to leave more space between buildings.
- Use empty space between buildings for cycling lanes, pedestrian pathways, or more green space for landscaping.
- Orient buildings towards the south or west to maximize solar gain.
- In commercial areas with taller developments, vary building height to reduce shade on adjacent buildings.
- Subdivide to maximize site connectivity to nearby amenities and services to promote walking and other alternative transportation.

2.5.3 Form and Exterior Design of Buildings and Other Structures

- Orient roofs to the south for potential use of solar panels.
- Place more windows on the south side of buildings to increase solar gain, and fewer windows on the north side to minimize loss of insulation.
- Install adjustable overhangs on windows to control the amount of sun exposure.
- Do not install skylights as they decrease insulation and can make solar panel installation difficult.

2.5.4 Specific Features in the Development

- Note: Specific features typically includes surface materials,⁷⁵ for example, light-coloured surfaces such as white asphalt should be used to minimize heat absorption. This is meant to address the heat island effect where surfaces trap heat, making urban areas warmer than rural areas.⁷⁶ This is typically only an issue in the summer for warmer regions such as Ontario and will not be necessary to impose for Esquimalt given the mild climate.

2.5.5 Machinery, Equipment and Systems External to Buildings and Other Structures

- For external lighting, such those along walkways and driveways, use motion-sensitive or solar-powered lights.
- In commercial areas, provide more electric vehicle charging stations.
- In commercial areas, provide more bicycle parking stations.
- Apply the Merton Rule⁷⁷ to new developments. To meet the energy performance required, developers might consider using solar panels, wind turbines, or heat pumps.

E. Conclusion

Local governments have the authority to designate DPAs for energy conservation, water conservation, and GHG reduction under sections 488(1)(h)-(j) of the *Local Government Act*. DPAs must include objectives that justify the designation and guidelines that detail what is required to obtain a development permit. These guidelines can be set out in an OCP, and can complement other municipal initiatives for climate action.

Guidelines for climate action purposes may only address features exterior to buildings: landscaping, siting of buildings, form or exterior of buildings, specific features in the development, and equipment and systems external to buildings. DPA guidelines with detailed and unambiguous language, examples of methods for compliance, and reasons why requirements are imposed can be helpful for an applicant to understand and determine what must be done to comply with development requirements. Designating climate action DPAs with effective guidelines can be an effective way for local governments to contribute to climate action.

⁷⁵ British Columbia, “Development Permit Areas for Climate Action”, *supra* note 4 at 20.

⁷⁶ “Heat Island Effect”, *United States Environmental Protection Agency*, online: <<http://www.epa.gov/heat-islands>>.

⁷⁷ Merton Rule, *supra* note 70.