

Implementing DPAs for Climate Action

The success of a DPA for climate action depends on the suitability of the DPA and DPA guidelines to local circumstances and on early, meaningful consultation with stakeholders, experts and community members. The following considerations are intended to help local governments assess the local feasibility and support the effective implementation of DPAs for climate action.

Favourable Local Context

A growing community, a strong development market and a positive working relationship between the local government and the development/building sector can help ensure the effective implementation of DPAs. The local context will influence the likelihood of success. Consider whether:

- the community is growing or anticipating growth;
- there is a good working relationship with the development/building sector;
- there is an opportunity to engage the development/building sector in discussion about cost-effective DPA guidelines;
- there is public support for designating DPAs for climate action; and,
- the climatic conditions, topography and/or site conditions are suited to the DPA and DPA guidelines under consideration.

Complementary Tools

Local governments can combine DPAs with complementary tools for greater impact on climate action. For example, consider combining a DPA for climate action with bylaws that increase density, especially near transit. Other tools that have the potential to increase the impact of a DPA for climate action include fast-tracked development approvals, reduced Development Cost Charges (DCCs), tax exemptions and reduced permit fees. Consider:

- whether a DPA can be aligned with complementary tools to increase impact on climate action;
- aligning the provisions in zoning bylaws to accommodate DPA guidelines, e.g. shading devices might be allowed to project into setbacks; and,
- which tool, or combination of tools, can deliver the desired reductions for less cost and with fewer resources.

Complementary Tools for Climate Action

- local service area bylaws used to create district energy service areas (City of North Vancouver);
- zoning bylaws with minimum standards for bicycle parking that are required for all developments (City of Victoria); and,
- rebates on building permit fees for new and renovated single family homes built to energy efficient standards. (District of Saanich).

Optimal Locations

Locating climate action DPAs in areas that align with the principles of complete, compact communities will enhance energy savings and GHG reductions. Consider locations that minimize sprawl and in turn:

- preserve significant environmental resources including trees and other plants that store carbon and reduce GHGs;
- protect forests that recharge and filter groundwater;
- promote shorter commutes between homes, workplaces, shopping and recreation;
- create options for walking, cycling and transit to reduce GHG-emitting trips;
- minimize road, sewer and water infrastructure investment in areas with low population densities; and,
- reduce housing costs and residential and commercial tax rates that stem from inefficient and costly servicing.



Compact developments that minimize infrastructure expansion can save energy and reduce GHG emissions. Consider re-developing the following types of sites before developing natural and un-serviced (greenfield) sites:

- previously developed sites (infill);
- former industrial areas (brownfield sites);
- aging strip mall areas (greyfield sites); and,
- sites serviced by existing public infrastructure (e.g. sites near transit corridors, water, sewer, roads, utilities and/or existing district energy systems).

A Guide to Green Choices

For more information about land use planning that supports climate action goals, see the Ministry of Community, Sport and Cultural Development's *A Guide to Green Choices*. The guide provides practical advice for communities of all types: large, small, rural, resort-based, urban, and suburban. It is available online at: <http://www.cscd.gov.bc.ca/lgd/planning/greenchoices.htm>

Consider the optimal scale for a DPA for climate action — is the subdivision or neighbourhood the best scale for achieving the climate action goals? Also, consider that local conditions – climate, topography and the built environment – will vary and should be taken into account when designating the location and size of a DPA.

For example, a climate action DPA for an urban infill site can save energy and reduce GHG emissions by minimizing sprawl and infrastructure expansion. However, that same urban infill site may offer fewer opportunities for passive solar gain because of taller buildings blocking sunlight to the site. Consider local conditions when designing DPA guidelines to ensure maximum effect.



Combining DPA Purposes

The LGA provides the authority for local governments to combine more than one purpose within a DPA.

Combining complementary purposes can achieve multiple objectives within one DPA. For example, requirements to protect the natural environment, its ecosystems and biological diversity complement those related to energy conservation, water conservation and GHG reduction. Encouraging the construction of green pathways for alternative modes of transportation to reduce GHG emissions and connecting linked open spaces that support habitat and wildlife conservation, in turn protects the natural environment, saves energy and reduces GHGs.

Combining an environmental protection DPA with a climate action DPA can achieve broader rainwater management goals. A water conservation DPA might include strategies that reduce the demand for potable water (for example, low water use landscaping), and support on-site rainwater infiltration and rainwater capture for re-use.

An environmental DPA could include rainwater management strategies that mimic and/or minimize change to natural hydrological conditions, contribute to a “lighter hydrological footprint” and ultimately conserve water resources. Combining environmental protection strategies such as minimizing site disturbance during construction with water conservation DPA strategies can improve rainwater conservation and achieve multiple objectives.

The Water Balance Model

The Water Balance model (<http://www.waterbalance.ca>) is one tool that can assist in designing developments that minimize change to natural hydrological conditions. The tool compares the impact of different development scenarios on the hydrological system of a site and helps make decisions about how best to manage rainwater runoff.

In situations where DPA requirements reduce the need for new infrastructure, consider reducing DCCs. For more information about DCCs, refer to the Development Cost Charges Best Practices Guide at: http://www.cscd.gov.bc.ca/lgd/finance/development_cost_charges.htm.

DPA Guidelines and Climate Change Adaptation

Making strategic choices now about which climate action tools to use can help slow the rate and extent of future climate change. British Columbia communities have already experienced the impacts of climate change, including warmer than usual winters, more frequent severe storms, flooding and drought conditions.

Local governments will need to be prepared to adapt to the current day impacts of changing climatic conditions as well as take steps to slow future climate change. Consider applying a “climate change adaptation lens” when developing DPA guidelines.

For example, a DPA guideline that encourages planting of shade trees near buildings can help reduce energy use and GHG emissions related to mechanical cooling in the summer months. A climate change adaptation approach would involve choosing planting locations and selecting the types of shade trees that would survive new climate conditions such as extended periods of dry hot weather and/or more severe storm conditions.

DPA guidelines that conserve potable water also reduce energy and GHGs used to treat and distribute potable water and treat wastewater. Such guidelines also help to prepare communities for expected decreases in water supply arising from changing climate conditions.



A climate change adaptation approach can increase a community’s resilience in the face of changing climate impacts.

Climate Change Adaptation Tools

The Ministry of Community, Sport and Cultural Development is working with the Ministry of Environment, Fraser Basin Council and Natural Resources Canada as part of the B.C. Regional Adaptation Collaborative (RAC) to develop climate change adaptation tools for B.C. local governments.

ReTooling for Climate Change is a website focused on climate change adaptation. The site, funded through the BC Regional Adaptation Collaborative (BC RAC), provides some of the latest information on climate change, local impacts and adaptation planning, and includes a Tools & Resources section that links users to material across North America and around the globe. For more information, see <http://www.retooling.ca>.

The Water Conservation Calculator

The Water Conservation Calculator (WCC) is a free, web-based decision-support tool that illustrates how specific water conservation measures can deliver fiscal and physical water savings for communities. It can help staff make the case for conservation and help decision-makers make informed decisions about infrastructure funding. For more information, see <http://www.waterbucket.ca/wuc/?sid=15&id=217&type=single>.

Additional climate change adaptation resources can be found on the Ministry of Environment's Climate Change Adaptation Strategy webpage (<http://www.env.gov.bc.ca/cas/adaptation/strategy.html>) and in the document Climate Change Resources for B.C. Planners (http://www.env.gov.bc.ca/cas/pdfs/cc_resources.pdf).

Accessing Specialized Knowledge

Assessing the local feasibility of implementing a DPA for climate action is likely to require specialized and/or technical knowledge. For example, local governments may need specialized technical knowledge to evaluate development permit applications that include onsite energy generation equipment. Local governments may also need new capacity to:

- compare the costs and benefits of introducing climate action strategies, both in the short and long-term;
- understand the relative costs and benefits of various DPA requirements;
- gauge risks and/or unintended consequences of DPA requirements;
- undertake studies to quantify solar, geothermal or wind energy potential ; and/or,
- assess annual and seasonal climate conditions to determine whether potential strategies can provide intended benefits throughout the year.



Expert knowledge may already exist within a local government organization. Consider assessing whether local government staff have the knowledge, resources and availability to implement climate action DPA guidelines and identify where gaps and resources exist.

An integrated, or cross-organizational, approach to addressing climate action goals is an effective way to share internal expert knowledge and incorporate internal expertise into decision-making, planning, policies and actions related to climate action goals. Greater internal integration between planning and engineering staff can contribute to the effective monitoring and enforcement of DPAs. Consider whether training opportunities are available for local government staff.

External expertise may be required to increase a local government's capacity to implement DPAs for climate action. Consider whether external expertise is available, what it costs and whether financial resources are available to obtain it. Also assess whether trained individuals are available to design, install, build and maintain new technology, landscaping, machinery, systems or equipment.

Including experts as part of an early, meaningful consultation process can help to ensure the DPA guidelines can be effectively implemented and deliver the expected outcomes. Consider undertaking a comprehensive consultation process, such as the Integrated Design Process (IDP), to develop climate action DPA guidelines in complex situations.

Integrated Design Process (IDP)

The Integrated Design Process (IDP), offers a model for engaging relevant disciplines and stakeholders when developing complex climate change DPA guidelines. This collaborative approach engages a broad team throughout the project. Decision-making takes a system-wide perspective and considers life-cycle costs.

The IDP has the potential to deliver successful outcomes in situations with challenging environmental, social and economic goals. For more information, refer to the B.C. Green Building Roundtable's Roadmap for the Integrated Design Process Part One: Summary Guide at <http://www.metrovancouver.org/buildsmart/design/Pages/integrateddesignprocess.aspx>

Specialized knowledge is likely to be a key component of assessing the relative costs and benefits of proposed DPA requirements, and determining whether a DPA can be implemented in a cost-effective way. Tapping into the knowledge of development/building sector representatives and technology-specific experts can help local governments understand the potential costs and benefits of proposed DPA requirements. Some questions to consider include:

- What are the costs of the proposed DPA requirements to the community, local government and developer?
- What are the expected measureable benefits of the proposed DPA requirements in terms of energy savings, water savings and GHG emissions reductions?
- Are the expected benefits likely to outweigh the life-cycle costs of implementation?
- What is the likelihood that the DPA requirements will result in an increase to the price of the residential, commercial or industrial units being developed?
- Consider the relative costs and benefits of possible DPA requirements — can some requirements deliver the same or greater benefit for less cost than others?
- What are the estimated on-going operational and maintenance costs of the proposed requirements compared to conventional approaches that do not include climate action DPA requirements?

Development Approval Information Areas and DPAs for Climate Action

The *LGA (S. 920.01, 920.1)* provides the authority for local governments to designate areas and/or specify circumstances in which development approval information can be required.

Development approval information is information related to the anticipated impact of a proposed activity or development on the community. If a local government designates a Development Approval Information Area or specifies circumstances for which information can be required, it must also establish procedures and policies that set out the process for requiring information as well as the type of information that is required.

Local governments may want to consider aligning a Development Approval Information Area with a DPA for climate action in order to obtain information about the impact of a proposed activity or development on energy conservation, water conservation and GHG reduction.

Different Types of DPA Guidelines

Prescriptive guidelines, performance-based guidelines or a combination of both can be considered when making requirements for a DPA. The development/building sector can provide input on the types of guidelines for optimal implementation of the DPA.

Prescriptive guidelines focus on how a goal will be achieved and describe a particular solution. The prescriptive approach can provide clarity and make it relatively easy for a builder or designer to follow. However, the prescriptive approach can also be a barrier to innovation - by precluding less expensive and/or innovative technologies that were not available when the guidelines were written.

Performance guidelines describe the required outcome or performance rather than prescribing how a solution should be implemented. A performance-based approach allows for innovation and creativity in achieving intended outcomes. Methods for determining whether the performance objectives have been reached must be defined.

The United Kingdom's Planning Policy Statement: Planning and Climate Change provides an example of a performance-based approach. Like the Merton Rule, the planning policy statement requires planning authorities to set a target percentage in all new development for decentralized and renewable or low-carbon energy use. The policy statement also states that the targets should avoid prescribing the technologies that should be used and be flexible in how carbon savings from local energy supplies are to be secured. The policy statement is available online at: <http://www.communities.gov.uk/publications/planningandbuilding/ppclimatechange>.

The Merton Rule

The Merton Rule was developed and adopted in 2003 by the London Borough of Merton in the United Kingdom.

The Merton Rule is planning policy that requires housing developments of 10 or more units, or 1,000m² of non-residential development, to generate at least ten percent of their energy needs from onsite renewable energy equipment. For more information, see Merton Council's Merton Rule webpage (<http://www.merton.gov.uk/living/planning/planningpolicy/mertonrule.htm>)

Third-party rating systems can provide examples of prescriptive and performance-based strategies for local governments that are developing climate action DPA guidelines. For example, the Leadership in Energy and Environmental Design for Neighborhood Development (LEED-ND) rating system applies to the broader neighbourhood scale and includes strategies related to energy and water efficiency, solar orientation and on-site renewable energy sources. More information is available at <http://www.cagbc.org/Content/NavigationMenu/Programs/LEED/RatingSystems/Neighbourhooddevelopments/default.htm>.

The 2010 Built Green™ checklist incorporates site strategies for water conservation such as supplying a minimum of 8" of topsoil or composted yard waste as finish grading throughout the site. It is available online at: <http://www.builtgreencanada.ca/checklist-certification>.

In Summary...

To help guide the successful application of DPAs for climate action, use the summary checklist of considerations described above. The checklist, Getting it Right – Questions and Considerations for Implementing DPAs for Climate Action, can be found at the end of the guide.