

# ICABCCI

Integrated Climate Action  
for BC Communities Initiative

## LCR Snapshot

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ICABCCI Partner  
Community Profiles:  
Climate Action and Key LCR Opportunities  
JULY 2019



**ACT** Adaptation to  
Climate Change Team



## Background

A low carbon resilience (LCR) lens coordinates and mainstreams adaptation, mitigation, and co-benefit strategies into policy, planning and implementation processes. **Deborah Harford**, Executive Director, ACT (the Adaptation to Climate Change Team), in the Faculty of Environment at SFU, and SFU Research Associate **Dr. Alison Shaw**, Principal, FlipSide Sustainability, co-developed ICABCCI (Integrated Climate Action for BC Communities Initiative) to produce action-based research that supports local governments in implementing effective, streamlined climate action. The research will be collated into guiding resources and an LCR Framework for Climate Action, to be used by local governments across BC and Canada and beyond.

This set of thirteen ICABCCI partner community profiles outlines each community's progress and aspirations on adaptation and mitigation, with the goal of highlighting key opportunities for moving LCR planning to implementation.

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## 1. CITY OF COLWOOD

### Interviewee & Contact: Iain Bourhill

Colwood approved its 2018 OCP Update with strong climate goals, including being carbon neutral, energy positive, and water smart, being prepared to adapt to a changing world, and protecting and maintaining natural and engineered infrastructure. Chapter Ten, Climate Change, explicitly frames mitigation and adaptation objectives; in particular, it mentions green buildings, complete communities, urban forests, and a unique interest in incorporating adaptation strategies into the Community Energy and Emissions Plan (CEEP). The Park Areas and Natural Assets section (Chapter Eleven) recommends integrating climate adaptation and mitigation related to natural asset management into a Parks Master Plan. The OCP also calls for an immediate renewal of Colwood's 2010 Community Energy and Emissions Plan.

In June, Colwood Council declared a climate emergency and requested an action plan prepared by staff within 90 days, presenting an opportunity for applying and advancing integrated climate action, or "low carbon resilience" (LCR) lens.

The interviewee identified eight key windows of opportunity for integrating an LCR lens:

1. **Undertaking an asset management process:** Colwood has just completed a major asset management planning process and is interested in applying an LCR lens as the plan is refined. A key focus for asset management in the OCP is on-site adaptive planning and design, a key entry point for LCR.
2. **Updating land use plan:** The 2018 OCP Update references green buildings, complete communities, and urban forests as opportunities with explicit policy suggestions for incorporating adaptation strategies in the CEEP, indicating that LCR integration may be desirable.
3. **Climate change and sustainability are municipal priorities:** Based on the commitments and goals laid out in the OCP, the CEEP update, and a current partnership with ICLEI Canada on adaptation, it is clear that climate change and sustainability are municipal priorities.
4. **Performing a climate risk and vulnerability assessment and want to include mitigation:** An assessment is being performed through ICLEI Canada, in the development of an adaptation plan.
5. **Implementing a mitigation plan:** The OCP calls for an immediate renewal of Colwood's 2010 CEEP; there is a clear interest in combining adaptation from the ICLEI process into the CEEP. Also, the Solar Colwood Program moved the City forward to reduce emissions and build energy security.

6. **Want to create a business case to include emissions and adaptation in investment decisions:** Colwood is considering a 'climate scoring tool' for making a business case to Council around adaptation and mitigation concerns.
7. **Interest in including LCR performance in subdivision development standards:** Steps for a planned update of the bylaw have been discussed, but more information on the timeline is needed.
8. **Interest in considering emissions reduction and adaptation in stormwater and flood management planning:** There is a commitment in the OCP to develop a rainwater management plan, including using both built and natural green infrastructure to manage rainwater and stormwater and mitigate flood risks. There is an opportunity to integrate LCR in this plan.

Key municipal departments related to climate action planning are Long Range Planning and Sustainability, and Engineering. Collaboration between the two departments will be key to effectively moving LCR strategies forward. Both departments have been tasked with a Subdivision Bylaw update requiring considerable collaboration. In addition, asset management is being reviewed for ways to include natural asset strategies.

Overall, Colwood appears ready to pursue LCR through a number of viable entry points, including links between the CEEP update and the ICLEI Canada adaptation planning. The recently adopted OCP provides clear direction and support for climate action, a useful position from which to advance LCR approaches.

**The top two reasons Colwood is interested in applying an LCR approach:**

- To streamline planning and resources, saving time and money.
- To prevent emissions and adaptation contradictions in decision making.

**The top three enabling conditions needed to coordinate and implement climate action:**

- Support from senior leadership.
- Funding for integrated action.
- Provincial support through policies or mandates.





## 2. DISTRICT OF ELKFORD

**Interviewee: Scott Beeching (now at Salmon Arm)**

**Contacts: Jesse Huisman & Curtis Helgesen**

Elkford was one of the early leaders on adaptation in BC. As part of the Columbia Basin Trust’s Communities Adapting to Climate Change Initiative, Elkford integrated the 2010 Adaptation Plan into its OCP. The explicit goal, to “consider climate change in all decision-making”, elevated climate action to overall corporate strategy and provided a lens from which to guide land use planning, management, and investment decisions into the future. The OCP stipulates that Council consider mitigation goals in all decisions, and that all bids/tenders/contracts for planning and development reference adaptation. Chapter Five, A Vibrant, Livable Community, lays out corporate and community emission reduction targets, while mentioning adaptation considerations for new developments. This OCP was innovative for its time, but is now outdated. A 2015 CEEP was performed but never adopted.

Elkford’s Subdivision and Development Servicing bylaw makes it a requirement to demonstrate best practice in stormwater and adaptation planning, and, uniquely, offers performance-based incentives to developers. An Energy Efficiency Development Permit Approval (DPA) demands energy and water efficiency improvements in all new developments; a recent decision to build the new district office to Energy Step Code requirements is illustrative of this commitment. The subdivision bylaw is conceived of as an adaptation strategy, with the DPA fulfilling the mitigation side, and asset management is being reviewed for ways to include nature-based strategies. An LCR approach could be used to coordinate these various strategies for implementation.

The interviewee identified seven key windows of opportunity for integrating an LCR lens:

1. **Undertaking an asset management process:** Elkford is at an advanced stage in the asset management planning process, which may provide last-minute opportunities for LCR strategies.
2. **Performing GHG emission inventory and want to include adaptation:** The 2015 CEEP and ICLEI Canada adaptation process Elkford is involved in present opportunities for an integrated LCR approach, which is already identified as desirable in the OCP.
3. **Climate change and sustainability is a municipal priority:** Strong political will to advance climate change and sustainability presents opportunity to advance LCR into corporate strategy, helping to embed the goal of climate change in all decision-making.

4. **Want to include LCR in subdivision development standards:** Subdivision development standards that include nature-based strategies already represent an LCR approach and need to be coordinated as such.
5. **Implementing mitigation and adaptation plans:** As noted above, the opportunity for integration is outlined in the OCP.
6. **Want to access Infrastructure Canada funding, or other federal/provincial funding:** Elkford has had previous success procuring climate action grants, which has resulted in strong support from Council; they are well situated to fulfill Infrastructure Canada Climate Lens requirements that demonstrate planning for adaptation and mitigation.
7. **Interest in including mitigation and adaptation markers in procurement policies:** This important area is under development; more information to be gathered for the next phase of this project.

Planning and Development Services is Elkford's key municipal department for climate action, with Infrastructure and Engineering Services also playing a role on the adaptation side. Collaboration between these two departments is key to effectively advancing LCR.

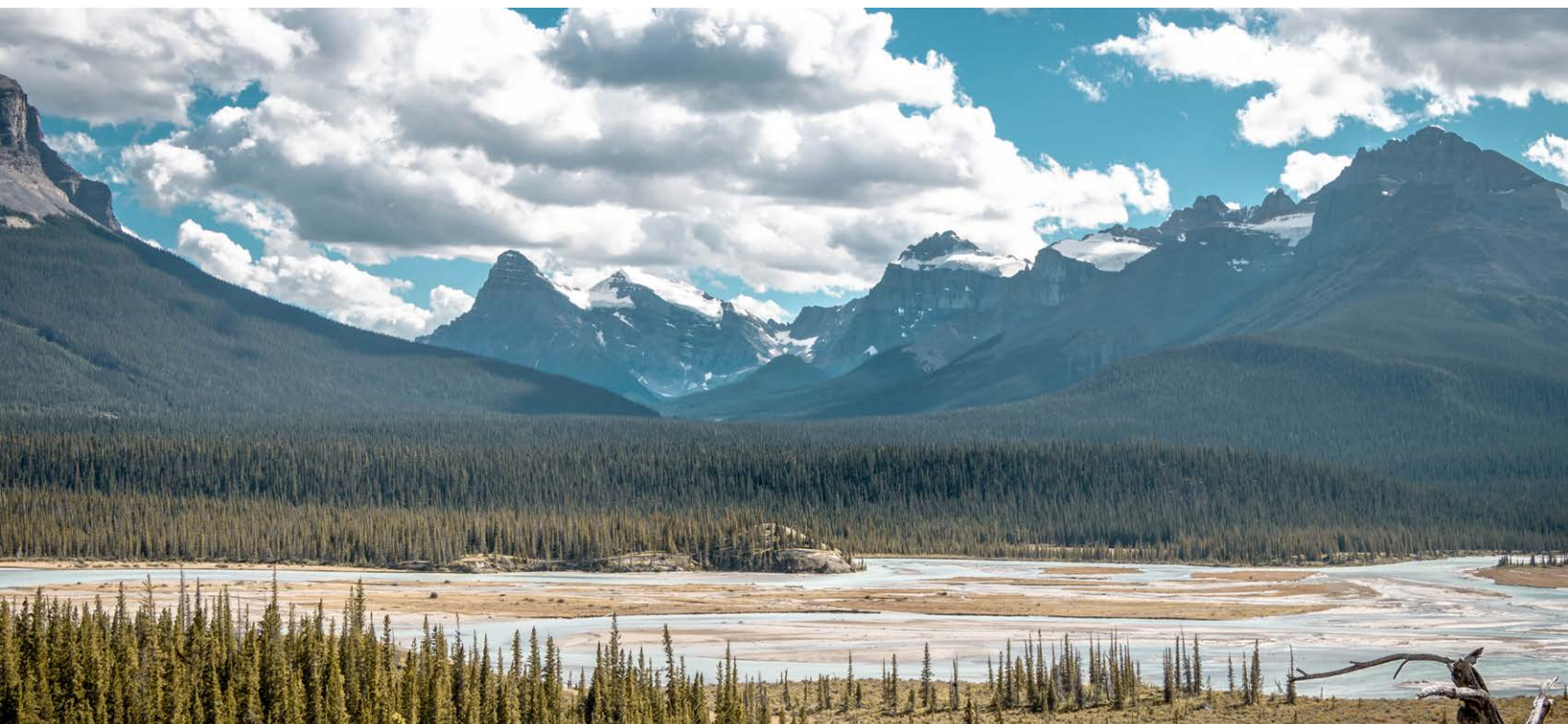
Elkford's ongoing leadership in climate action, its desire to include climate change in all decision-making, and its success in procuring grants present good opportunities for proactively bridging silos and taking a strategic LCR approach.

**The top two reasons Elkford is interested in applying an LCR approach:**

- To ensure that climate action is a corporate priority.
- To encourage the responsible management of assets and investment decisions.

**The top three enabling conditions needed to coordinate and implement climate action:**

- Support from senior leadership.
- Provincial support through policies or mandates.
- Funding for integrated climate action.





### 3. TOWN OF GIBSONS

#### Interviewee & Contact: Emanuel Machado

Gibsons is a leader on climate action. Up until 2014, the town focused primarily on mitigation, then, prompted by its participation in an international study on sea level rise, it began to seriously consider adaptation. Known as a leader in the Municipal Natural Assets Initiative (MNAI), Gibsons' adaptation work has been coordinated through its Eco-Asset Strategy. This strategy applies an LCR lens to asset management, preserving and/or restoring natural infrastructure that retains and filters water to deal with projections of increased precipitation, while also conserving green space and biodiversity, promoting the health and well-being of the community, and encouraging carbon sequestration. In addition to the Eco-Asset Strategy, there is political will to explore opportunities for coordination and integration relating to Gibsons' development permit areas (DPA), subdivision standards, the stormwater management plan, the parks management plan, and infrastructure-related plans. Improved management of the geothermal district energy utility is also a priority.

Gibsons' 2015 Smart Plan OCP prioritizes smart growth and sustainability supporting strong climate action throughout. Leadership in this community has been ongoing and highlights Gibsons' deep commitment to integrated climate action.

The interviewee identified six key windows of opportunity for integrating an LCR lens:

1. **Undertaking an asset management process:** The town is already approaching asset management using an LCR lens, particularly in stormwater management, with room to broaden the scope to other areas.
2. **Updating land use plan:** Gibsons' Smart Plan is linked directly to a smart growth framing in the OCP, providing good opportunity to identify and integrate specific LCR benefits; unclear when a land-use update will occur.
3. **Climate change and sustainability is a municipal priority:** There is strong emphasis on integrated climate action in the OCP and other major municipal documents. In addition, the CAO is a champion of integrated climate action, and is keen to model opportunities to proactively embed LCR into all corporate strategy.
4. **Want to include LCR in subdivision development standards:** The bylaw currently has little explicit reference to climate action, presenting a clear opportunity to integrate LCR approaches.
5. **Performing a climate risk and vulnerability assessment and want to include mitigation:** Including mitigation in Gibson's Eco-Asset Strategy presents opportunities for LCR integration.



6. **Interest in considering emissions reduction and adaptation in stormwater and flood management planning:** The town already has a strong focus on stormwater and flood management through the natural asset work, with potential to identify and evaluate LCR indicators.

Leadership at the CAO level, combined with an OCP that supports sustainability and smart growth, has contributed to a uniquely holistic approach to integrated climate action in Gibsons, primarily evident in its innovative natural asset approaches. The Departments of Infrastructure Services and Planning have primary responsibility for coordinating adaptation and mitigation respectively.

Overall, Gibsons is already pursuing an LCR approach, with work still to be done in evaluating their efforts. Gibsons is now interested in working at the regional scale to consider a coordinated water governance approach for the region.

**The top two reasons Gibsons is interested in applying an LCR approach:**

- Ensure that climate action is a corporate priority.
- Gain strategic direction on long term infrastructure decisions and investments.

**The top three enabling conditions needed to coordinate and implement climate action:**

- Provincial support through policies or mandates.
- Support from senior leadership.
- Regional coordination of wildfire risks and management, stormwater conveyance, aquifer recharge and drinking water.





## 4. CITY OF NELSON

### Interviewee & Contact: Kate Letizia

The City of Nelson has a long history of leadership related to the development and implementation of actions to reduce emissions and build resilience to climate change. Part of this history begins with the City's incorporation in 1897, when Nelson became the first city in BC to produce its own green energy through its city-owned hydroelectric power plant. It has since developed a myriad of environmentally-focused strategies and action plans, including a Corporate Greenhouse Gas Reduction Plan that led to a 25% reduction in corporate GHGs in a five-year time span, and the reputation for being the smallest municipality in Canada to achieve Federation of Canadian Municipalities (FCM) Partners for Protection (PCP) Milestone 5. Furthermore, Nelson launched both Sustainability and Low-Carbon 'Paths to 2040' plans in 2010 and 2011 respectively, each containing numerous objectives and actions focused on environmental protection and reducing the city's emissions and exposure to climate-related risks.

Nelson's 2013 OCP and its Sustainability and Low-Carbon 'Paths to 2040' plans coalesce around five sustainability principles; cultural strength, healthy neighborhoods, robust ecosystems, prosperity, and resiliency, all of which help frame current and future planning and decision-making priorities. "Energy & Climate Change" is one of the OCP's ten broad goals, emphasizing energy that is local, resilient, adaptive, carbon-neutral, and minimizes impacts on the ecosystem. The consistency in planning around five key principles and the emphasis on integrated climate action presents a unique opportunity to explore and evaluate LCR approaches.

In the recent past, Nelson has had a strong focus on mitigation planning and action, as seen through the completion of the 2011 Low Carbon Path to 2040 Plan, the 2010 Corporate GHG Reduction Plan, the 2010 Active Transportation Plan, and the implementation of various actions contained therein. The City's ambitious targets - a 43% reduction in corporate emissions from 2007 baseline levels by 2025 and a 57% reduction in per capita emissions by 2040 - are supported by emissions reduction strategies in diverse policy and planning areas such as land use, infrastructure, and solid waste. Density-friendly zoning, high efficiency upgrades in city facilities, and projects ranging from LED replacements to Canada's first Community Solar Garden in 2017 contribute to leading-edge mitigation efforts in the City.

Flooding, water security, extreme heat, and wildfires are of increasing concern to the residents of Nelson, expanding the emphasis on adaptation planning. The City recently acquired FCM funds for adaptation planning and are in the process of dovetailing these into a comprehensive climate action planning process. It already has numerous plans and actions upon which to build, including the 2011 Sustainable Waterfront & Downtown Master Plan, the 2011/2017 Water Master

Plan, the 2007/2017 Community Wildfire Protection Plan, the recent Flood Inundation and Hazard Mapping Study, and the development of an Emergency Operations Centre in 2018. The City is committed to coordinating these climate action plans and strategies, applying a systems lens for bold and innovative community-wide climate actions and systemic shifts needed to accelerate progress toward becoming a resilient, low carbon community. Nelson’s emphasis on developing a comprehensive and boundary-spanning plan presents a unique opportunity to apply an LCR lens and pathway.

The interviewee identified three key windows of opportunity for integrating an LCR lens:

1. **Climate change and sustainability is a municipal priority:** Emphasis on sustainability planning within the City is showcased through plans like the 2013 OCP, the 2010 Path to 2040 Sustainability Strategy, the 2010 Corporate Greenhouse Gas Reduction Plan and the 2011 Low Carbon Path to 2040 Plan. These new planning priorities provide an opportunity to embed LCR pathways throughout new and existing decision-making processes.
2. **Performing a climate risk and vulnerability assessment and want to include mitigation:** Using FCM adaptation funding, the City is pursuing a more comprehensive Climate Change Action Plan, linking corporate and community emissions reductions to the requirements of an adaptation planning process. In essence, the City is applying an LCR lens in the development of a comprehensive climate change action plan.
3. **Want to create a business case to include emissions and adaptation in investment decisions:** Creating a business case that appeals to key influencers and unlikely sectors alike, i.e. health, tech, business, and the arts presents opportunities for broadening engagement and building upon existing community values to work collaboratively to drive toward Nelson’s goals of creating a resilient, low carbon community.

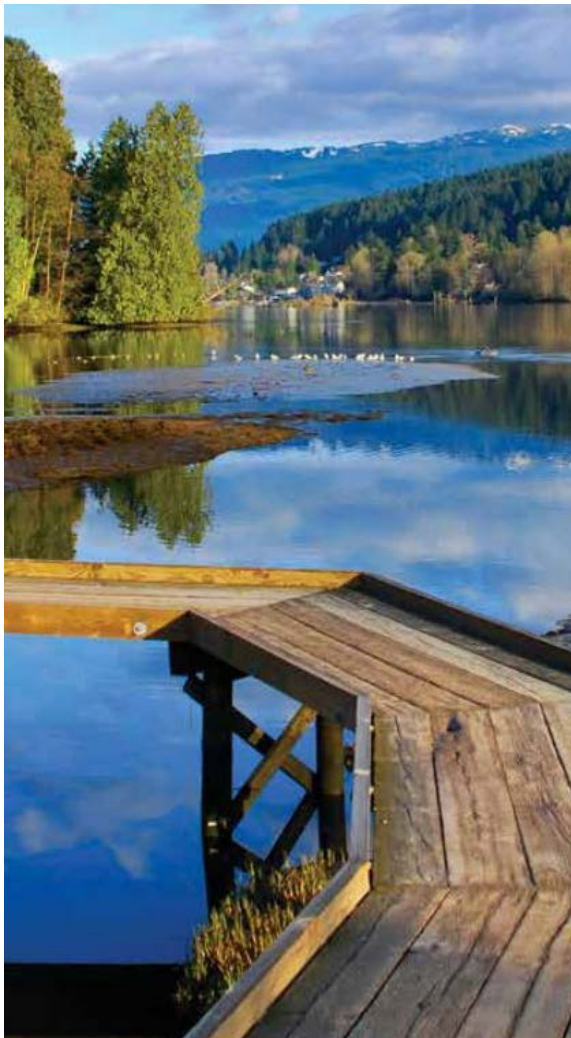
Currently, the Department of Development Services and Engineering is taking the lead on the development of a comprehensive Climate Change Action Plan for Nelson, presenting an opportunity for greater coordination among the many other departments they work closely with, such as Public Works and Utilities, Nelson Hydro, and community members. As Nelson has had many successful, cross-sectoral ‘quick-wins’ on the climate file, they are currently well-positioned to coordinate and implement a comprehensive climate action plan that will tackle some of the more complex issues facing the City and provide relevant lessons for others.

**The top two reasons Nelson is interested in pursuing an LCR approach:**

- To streamline climate action planning and resources.
- To embed integrated climate action in current planning processes.

**The top three enabling conditions needed to coordinate and implement climate action:**

- Systems approaches like lifecycle costing to consider benefits and trade-offs of policies, programs, and projects.
- Guidance on and incentives for cross-departmental coordination and collaboration.
- A guiding tool or framework for integrated climate action.



## 5. CITY OF PORT MOODY

### Interviewee & Contact: Laura Sampliner

Port Moody is relatively new to climate action. In 2011, a Community Sustainability Plan outlined high level goals and strategies for climate action, but they were never tracked. Similarly, a CEEP was drafted in the same year, however, due to changes in staff, the CEEP was never brought forward for Council consideration and is now out of date.

The 2014 OCP identifies a need for both adaptation and mitigation plans. Chapter Five, Sustainable Resource Use and Climate Change Response, defines Port Moody's GHG emissions reduction targets, which have since expired, and outlines a number of policies. These emissions reductions policies include the need to improve municipal operations' energy use and climate preparedness, and encourage sustainable transportation, efficiency improvements in new and existing buildings, and compact neighbourhood planning and design. Most of the policies are centered on mitigation with a few references to adaptation in the context of increasing municipal resiliency.

As a recommendation in the OCP, a Sustainability Checklist was implemented as a way to assess development applications for a variety of sustainability criteria, including emissions reductions and resiliency over time. The Sustainability Checklist morphed into the Sustainability Report Card, which became a self assessment tool for developers, and is currently being updated.

The 2019-2022 Port Moody Council Strategic Plan highlights environmental leadership as a priority for Council, with specific actions to support the development of a Climate Action Plan. In 2018, the City established the Climate Action Committee, comprised of individuals from Council and the public, and tasked with developing an integrated climate action plan. The Committee's work plan justified the addition of a Sustainability and Energy Coordinator to support Committee work plan items. A cross-departmental Climate Action Task Force was formed, with senior representation from each city department. In the spring of 2019, a strong commitment was made among staff and Council to pursue an LCR approach toward the development of an integrated Climate Action Plan (CAP), using LCR approaches for both the corporate and community side. In an effort to streamline resources, Port Moody adopted an LCR lens in its consultant procurement practices, and has since initiated a hybrid planning team that includes ACT as a partner. Due to this timeliness and the strong support from Council, Port Moody is currently ICABCCI's first

case community; we will work to plan and support implementation while evaluating the benefits.

The interviewee identified six key windows of opportunity for integrating an LCR lens:

1. **Performing a climate risk and vulnerability assessment and want to include mitigation:** A formal climate risk and vulnerability assessment is being developed alongside an updated GHG inventory as a part of its Climate Action Plan.
2. **Performing GHG emission inventory and want to include adaptation:** A formal climate risk and vulnerability assessment is being developed alongside an updated GHG inventory as a part of its Climate Action Plan.
3. **Climate change and sustainability are municipal priorities:** Sustainability and environment are the top two priorities outlined in the OCP and the 2019-2022 Council Strategic Plan. The recent hire of a Sustainability and Energy Coordinator renewed the City's commitment to integrated climate action.
4. **Want to create a business case to include emissions and adaptation in investment decisions:** The Sustainability Report Card could be used as an opportunity to incentivize LCR in corporate strategic planning, and also for developers.
5. **Implementing mitigation and adaptation plans:** Currently developing an integrated Climate Action Plan, with opportunities for coordinated LCR implementation.
6. **Interest in considering emissions reduction and adaptation in stormwater and flood management planning:** The OCP has a goal to complete and enhance its integrated stormwater management plan, referencing best LCR practices in modelling for city facilities and parks.

The design, delivery, and evaluation of an LCR approach for Port Moody's Climate Action Plan is being coordinated through the Planning Division and holds promise for helping communities with little or no climate action history to leapfrog ahead into LCR and more integrated climate action at the community scale.

**The top two reasons Port Moody is interested in applying an LCR approach:**

- To prevent emissions and adaptation contradictions in decision making.
- To embed climate action into current planning processes.

**The top three enabling conditions needed to coordinate and implement climate action:**

- The need for a tool or guiding framework for integrated climate action.
- A clear definition of how LCR fits into departments, roles, and outcomes.
- Guidance on effective cross departmental coordination and collaboration.



## 6. CITY OF PRINCE GEORGE

**Interviewee: Josh Kelly (no longer at PG)**

**Contact: Andrea Byrne**

Prince George has been a leader on climate action since the early 2000s. The myPG Integrated Community Sustainability Plan (2010) informed the development of the 2012 OCP objectives, vision, and goals. As a result, adaptation and mitigation are integrated throughout the OCP, with the main focus in Chapter Six, Environment. Within this chapter, objectives and policies are set around clean air, clean water (including groundwater and integrated stormwater management), climate change adaptation, green city practices, emissions reduction, and reduced solid waste. In Chapter Five, Economy, the first objective is to “Support land use and planning that enhances Prince George as a sustainable, resilient, knowledge based, resource economy which is connected to the world.” Chapter Seven, Social Development, has a minimal focus on climate action, but it is referenced in the context of food security and public housing. Finally, Chapter Eight, Built Environment, has a strong focus on climate action, including objectives and policies around growth management, urban agriculture, and active transportation. While particular linkages between adaptation and mitigation are not explicit in the 2012 OCP, the emphasis on sustainable community development makes Prince George a leader on climate action.

Prince George is updating its Energy and Greenhouse Gas Management Plan (2007) and Adapting to Climate Change in Prince George Plan (2009). These updates are being done separately due to different granting programs and requirements, but with an express goal of planning and implementing the two plans in an integrated manner. This provides a timely opportunity to identify opportunities for LCR approaches in implementation.

The interviewee identified seven windows of opportunity for integrating an LCR lens:

1. **Performing a climate risk and vulnerability assessment and want to include mitigation:** Prince George is performing an updated climate risk and vulnerability assessment as a part of its renewed adaptation plan; as noted, LCR is viewed as the ideal, but funding requirements are viewed as a barrier to this type of coordination.
2. **Performing GHG emission inventory and want to include adaptation:** Prince George is pursuing an updated GHG emissions inventory as a part of its renewed mitigation plan, with similar funding constraints to pursuing LCR as noted above.
3. **Undertaking an asset management process:** Prince George is in the final stages of updating their asset management policy/strategy and road map, which includes synergies between mitigation and adaptation.
4. **Want to create a business case to include emissions and adaptation in investment decisions:** A business plan would align well with Prince George’s

advances toward integrating climate considerations into decision-making; climate impacts already being felt – wildfire, pine beetle, extreme flooding/ weather events – provide urgency to this type of approach.

5. **Implementing mitigation and adaptation plans:** Creating plans that have synergies in implementation is the focus of the renewal, providing great potential to evaluate LCR at this later stage of development.
6. **Want to access Infrastructure Canada funding:** To date, funding requirements have kept adaptation and mitigation planning separate, largely preventing cross-departmental coordination despite awareness regarding the need for alignment. New streams of funding such as Infrastructure Canada's Climate Lens could more proactively support integration, as it requires evidence of planning for adaptation and mitigation.
7. **Interest in including mitigation and adaptation markers in procurement policies:** The current procurement bylaw relies only on values related to money, flexibility, and transparency. Given attention to climate action throughout the OCP and in asset management, there is an opportunity to embed LCR in corporate practices.

The Department of Engineering and Public Works is leading on all aspects of climate action, allowing for greater coordination among staff. As Prince George strives to improve the implementability of its adaptation and mitigation plans it will need to overcome barriers presented by siloed funding requirements, coordinating cross-departmental staff to identify key opportunities that synergize existing policies, plans, and implementation strategies. This presents a critical opportunity for advancing and evaluating an LCR approach.

**The top two reasons Prince George is interested in applying an LCR approach:**

- To streamline planning and resources, saving time and money.
- To embed climate action into current planning processes.

**The top three enabling conditions needed to coordinate and implement climate action:**

- A business case and/or a cost benefit analysis to determine financial reasons for taking action, and costs of inaction.
- The need for a tool or guiding framework for integrated climate action.
- Support for the coordination of integrated Climate Action Task Forces.



## 7. CITY OF SALMON ARM

### Interviewee & Contact: Scott Beeching

The natural setting, abundant greenery, and comfortable size of Salmon Arm are important features reflected in the 2011 OCP. The plan has 17 diverse goals including expanding greenways and natural trails, promoting a green, sustainable city, developing compact communities, and reducing GHG emissions. Currently, the city has no mitigation or adaptation plans in place, but an upcoming OCP update represents a timely opportunity to embed an LCR approach.

The 2010 Energy and Greenhouse Gas Emissions Study identified facilities with the largest corporate emissions, which has helped facilitate progress towards corporate carbon neutrality. A Climate Action Reserve, comprised of carbon tax credits, has financed projects such as upgrades to the Recreation Centre and Arena (boilers, hot water tanks, heat exchanges, and LED lighting), helping to reduce emissions. The City continues to measure and report ongoing progress towards carbon neutrality.

The completion of a Greenways Strategy, 'Weave It Green', was derived from the OCP Update and completed with considerable consultation and strong public support. Of interest, community members expressed a willingness to pay additional taxes in order to expand sidewalks and trails that increase non-motorized transportation, and to help protect and enhance the natural environment, birds, and wildlife. These responses indicate strong community support for strategies that maintain the natural environment and reduce emissions.

Salmon Arm is interested in pursuing Infrastructure Canada funding to help finance renewable energy opportunities, specifically through geothermal, solar, and landfill recapture. The City is considering closed-loop waste streams using lifecycle costing and waste-to-energy/resource options. Renewable energy and waste-to-energy streams have both emissions and resilience implications, representing opportunities for LCR planning and implementation.

The interviewee outlined four key windows of opportunities for implementing an LCR lens:

1. **Undertaking an asset management process:** The 2014 Corporate Strategic Plan outlines the importance of protecting the waterfront and natural assets, foreshadowing an interest in pursuing asset management using an LCR lens.
2. **Performing a GHG emission inventory and want to include adaptation:** Corporate carbon neutrality has not yet been achieved, but facility reports conducted in 2010 outline specific emissions-intensive buildings with the



ongoing goal to continually reduce emissions. Further emissions reductions and resilience strategies are supported in the city's desire to transition to alternative sources of energy such as geothermal, solar, and landfill methane recapture.

3. **Want to create a business case to include emissions and adaptation in decisions:** Salmon Arm would like to consider climate change in all areas of planning. A business case will help Salmon Arm advance their long-term planning goals.
4. **Want to access Infrastructure Canada funding:** Although Salmon Arm has been successful at pursuing funding like Small Community Grants and Community Works Funds in the past, the city is interested in pursuing larger scale grants and funding opportunities, specifically those offered by Infrastructure Canada. This funding would allow Salmon Arm to take strong steps toward integrating an LCR framework in asset management and/or planning updates.

Currently, the planning department is more focused on mitigation strategies and the engineering department is focused on adaptation. The current political climate suggests that Salmon Arm is committed to incorporating climate action in all areas of procurement and operational decision-making, and is aiming to avoid gaps and missed opportunities in climate action planning, presenting timely opportunities for an LCR approach.

**The top two reasons Salmon Arm is interested in pursuing an LCR approach:**

- To embed integrated climate action into current planning processes.
- To provide strategic direction on long term infrastructure decisions and investments.

**The top three enabling conditions needed to coordinate and implement climate action:**

- A business case and/or cost benefit analysis to determine financial reasons for taking action, and costs on inaction.
- A clear definition about how LCR fits into departments, roles, and outcomes.
- Greater awareness about potential areas of integration among relevant staff.



## 8. VILLAGE OF SILVERTON

### Interviewee & Contact: Hillary Elliott

The Village of Silverton is a small, rural and remote community in the Kootenay region. The Village is exposed to a number of risks exacerbated by climate change such as flooding, erosion, and wildfire. While the Village has limited capacity to plan for and implement climate actions, it relies on partnerships to help bolster climate planning and implementation strategies. Currently, for instance, the Village is in partnership with the Columbia Basin Trust, Rural Development Institute and Selkirk College to address key risks and vulnerabilities in the Village and surrounding region, and to assess progress towards adaptation and resilience. A recent partnership with the local Forest Cooperative, resulted in public land-forest interface mapping and planning, in preparation for a Wildfire Mitigation Plan. In support of that work, a partnership with the Villages of Slocan and New Denver collectively promotes FireSmart principles on private lands throughout the area. These existing partnerships expand the potential for regional LCR approaches that can help to streamline resources in order to respond to both climate change risks and emissions reduction opportunities within the Village and across the region.

The Village of Silverton's 2010 OCP outlines its emissions reductions targets, including corporate and community targets, and mapping of natural hazards likely to be exacerbated by climate change. Of interest is the 'Community Energy and Climate Change' section, which points to a community desire to transition Silverton toward carbon neutrality; particular actions include energy-efficient community design, green building, and retaining green space. In this section, Village Council is implored to use best available climate projections in decision-making to identify key impacts and mitigation opportunities, particularly as they relate to new development applications or long-term planning initiatives. The OCP is currently being updated.

Silverton is in the second phase of its asset management mapping and planning process, and has expressed interest in integrating LCR. There is a timely opportunity to work with the Village, and its contractors/partners, to streamline resources and embed an LCR approach into its asset planning strategy (e.g. natural assets), and decision processes (e.g. QGIS software). Integrating an LCR lens into the asset management process could help to develop a natural asset inventory and a deeper understanding of the ecosystem services already being provided.

The interviewee outlined two key windows of opportunities for implementing an LCR lens:

1. **Undertaking an asset management process:** Integrating natural assets into the asset management planning process is the place to begin and, already, this type of approach is supported in Natural Areas and Parks section of the OCP, which emphasizes the need for environmental assets, ensuring that natural drainage, particularly on steep slopes, is protected, and that sensitive habitat areas and foreshore are protected from commercial development.
2. **Want to access Infrastructure Canada funding, or other federal/provincial funding:** Flood risk mapping, currently being undertaken at the regional government scale, could lead to application for infrastructure funding.

The Village of Silverton has very limited staff at 3.4 full time employees in total, including maintenance staff; the bulk of climate action planning falls to 1-2 people. The goal is to apply an LCR lens to help to streamline resources and capacity and align all corporate decisions (similar to applying a safety lens).

**The top two reasons Silverton is interested in pursuing an LCR approach:**

- To streamline planning and resources, saving time and money.
- To encourage the responsible management of assets and investment decisions.

**The top three enabling conditions needed to coordinate and implement climate action:**

- Regional coordination of wild-fire risks and management, stormwater conveyance, aquifer recharge and drinking water.
- Knowledge and research of the need/benefits.
- Funding for integrated climate action.





## 9. VILLAGE OF SLOCAN

### Interviewee & Contact: Michelle Gordon

A small town at the end of Lake Slocan where the Slocan River begins, the Village of Slocan is transitioning from a single industry, resource-based economy. The closure of the local sawmill has thrust the Village into a time of creative growth and renewal. Part of this renewed identity is based around climate action. In 2017, Slocan became the first Kootenay community to commit to becoming 100% renewable by 2050, and was only the 5th municipality in Canada to do so. While little climate action has been formalized into policy and planning, due to capacity issues, the record-breaking 2017-18 wildfires, pine beetle infestation, and widespread flooding in the Kootenays created urgency around current and future climate risks faced by the Village and the region. In 2018, to respond to these threats and overcome capacity challenges, Slocan Council formed a Climate Action Advisory Committee to strategize climate action programs and implementation across the corporation and community.

Limited climate action has taken place to date, i.e. CARIP reporting and a 2016 CEEP, yet a foundation of support is developing: the Regional District of Central Kootenay Board has committed to working towards 100% renewable energy by 2050 and is also updating its disaster management documents, including flood mapping. In addition, the Village is a partner in the FCM Partners for Climate Protection Transition 2050 Program. Though Slocan's 2011 OCP is outdated, elements of climate action are supported through the Climate Change and Energy section, including environmentally-sound principles in new construction and alterations of existing buildings, use of local materials and natural/green building techniques, pedestrian trail networks, renewable energy options, and the use of electric or alternate fuel source vehicles and infrastructure both locally and regionally. A development permit area with an environmental designation is proposed in the Environmentally Sensitive and Hazardous Areas section to ensure protection of riparian areas adjacent to the lake, river, creeks and streams.

Currently, the Village of Slocan is in the second phase of an asset mapping and planning process, and has expressed interest in integrating LCR into this process. There is a timely opportunity to work with Slocan, and its contractors/partners, to streamline resources and embed an LCR approach into its asset planning strategy (e.g. natural assets), and decision processes (e.g. QGIS software). Integrating an LCR lens into the asset management process could help to develop a natural assets inventory and a deeper understanding of the ecosystem services already being provided, while also coordinating the interests of Slocan Council and the community in being a leader in the transition to a more resilient, low carbon future.



The interviewee outlined four key windows of opportunities for implementing an LCR lens:

1. **Undertaking an asset management process:** Embedding an LCR approach into the asset mapping and planning stage can help to raise awareness and understanding of different ecosystem services provided in the area.
2. **Climate change and sustainability is a municipal priority:** As of 2018, Slokan Council has spurred initiatives and goals that have the potential to showcase the community as a leader in LCR approaches.
3. **Performing a GHG emission inventory and want to include adaptation:** As a partner with the FCM PCP Transition 2050 Program, Slokan could advocate for LCR approaches that reduce emissions while also building resilience.
4. **Interest in considering emissions reduction and adaptation in stormwater and flood management planning:** Integrating LCR approaches in the asset management process supports broad-ranging goals in water management. More detailed stormwater and flood management plans could be developed using an LCR lens in the future.

To overcome capacity challenges, Slokan's Council initiated a Climate Action Advisory Committee in 2018. It is a citizen-led committee, comprised of Council representation and six citizens with a range of expertise, that works in direct collaboration with staff and Council. The committee represents a key institutional link to other Village committees (such as Affordable Housing and Health), presenting opportunities for mainstreaming climate action across other citizen-led initiatives. It also has the effect of streamlining community resources while maximizing coordination of complementary planning processes and thus opportunities for identifying strategic co-benefits.

**The top two reasons Slokan is interested in pursuing an LCR approach:**

- To embed integrated climate action into current planning processes.
- To ensure that climate action is a corporate priority.

**The top three enabling conditions needed to coordinate and implement climate action:**

- Funding for integrated climate action.
- Regional coordination of wild-fire risks and management, stormwater conveyance, aquifer recharge and drinking water.
- A guiding tool or framework for integrated climate action.



## 10. DISTRICT OF SUMMERLAND

### Interviewee & Contact: Tami Rothery

Although strongly committed to climate action, Summerland has focused almost entirely on mitigation to date. The District's 2015 OCP references climate action, with Chapter 13 mainly devoted to climate change mitigation goals such as promoting energy conservation, maintaining and enhancing the urban ecosystem, minimizing urban sprawl, and improving transportation efficiency. Chapter 13 sets out Summerland's GHG emission reduction targets and outlines objectives and policies to achieve these targets. Updates to the OCP related to climate action are anticipated in 2019 as part of the District's Comprehensive Climate Action Planning Project, which is a major opportunity to integrate an LCR framework into decision making.

With its emphasis on integrated, long-term sustainable energy management, Summerland is currently interested in further integrating adaptation across the organization and has taken steps to do so through a recently-adopted Asset Management Policy. In the spring of 2019, they developed an asset management policy and strategy and are now moving towards the Business Case & Project Prioritization Framework, presenting a timely opportunity for adoption of an LCR approach. A major resiliency project underway is Summerland's Integrated Solar Project - a multi-pronged approach that includes a \$6M large-scale solar array with battery storage funded by the federal gas tax in 2018, and a program incentivizing residential solar. The Solar+Storage Project will provide benefits to the community by providing emergency power in case of a blackout and reducing reliance on outside sources of energy, an LCR approach.

Summerland's 2011 Community Climate Action Plan is almost entirely focused on mitigation and emissions reduction targets. The District is currently focusing on updating both its community and corporate plans, and in addition is in the process of updating its asset management guidelines.

The interviewee identified six windows of opportunity for integrating an LCR lens:

1. **Undertaking an asset management process:** The District is updating its asset management framework throughout 2019; there are immediate opportunities to develop a business case for LCR in the development of priority strategies.
2. **Updating land use plan:** Depending on when this begins, there may be an LCR opportunity.
3. **Climate change and sustainability is a municipal priority:** There appears to be strong support for climate action given the implementation of an integrated solar project and a comprehensive climate action planning project.
4. **Interest in including mitigation and adaptation markers in procurement policies:** Summerland is hiring a new procurement manager and has expressed

interest in building mitigation and adaptation markers into the terms of this position and the District's overall procurement policy.

5. **Want to access Infrastructure Canada funding:** Summerland has been successful in implementing grant-funded climate action in the past, and is keen to seek other opportunities.
6. **Interest in considering emissions reduction and adaptation in stormwater and flood management planning:** The OCP calls on the district to manage stormwater in accordance with best-practices and develop a Storm Water Management Plan.

The Administration Department is the lead on all climate change policies, programs and projects. Given that it is quite small, staff capacity is limited and the Sustainability/Alternative Energy Coordinator has been central to getting climate action off the ground. Despite its small size, coordination across departments is sometimes difficult due to capacity and resourcing issues. An LCR lens has the potential to coordinate climate action and streamline resources.

**The top two reasons Summerland is interested in applying an LCR approach:**

- To ensure that climate action is a corporate priority.
- To encourage responsible management of asset and investment decisions.

**The top three enabling conditions needed to coordinate and implement climate action:**

- Support from senior leadership.
- A business case and/or a cost benefit analysis to determine financial reasons for taking action, and costs of inaction.
- Funding for integrated climate action.





## 11. CITY OF SURREY

**Interviewees: Anna Mathewson (now in Abbotsford) & Erin Desautels**

**Contacts: Erin Desautels & Maxwell Sykes**

Surrey is a leader in identifying mitigation and adaptation synergies. The 2013 OCP uses a sustainability framing with reference to adaptation and mitigation in all areas. The OCP highlights four key sustainability pillars: ecosystems, economy, society, and culture. One of the core objectives under ecosystems is to “design a community that is energy-efficient, reduces carbon emissions, and adapts to a changing environment.” This theme focuses on green infrastructure, ecosystem management, and climate resiliency. The economic objectives aim to “enhance sustainable economic growth,” and emphasize the links between climate change and employment areas, transit systems, and neighbourhoods. Currently there is a strong focus on co-benefits between climate action, equity, and health.

Surrey’s 2013 Community Climate Action Strategy (CCAS) includes both the Community Energy and Emissions Plan and Climate Adaptation Strategy. Developed from the 2008 Sustainability Charter, the CCAS provides a comprehensive plan for meeting key adaptation and mitigation goals, explicitly highlighting linkages between them. Four key policy linkages are identified: (i) Ecosystem Protection, Hazard Avoidance and Compact Land Use; (ii) Ecosystem Health and Carbon Sequestration; (iii) Heat Management and Passive Solar; (iv) Community Energy Systems and Self-sufficiency. Implementation is now the priority and challenge, presenting many LCR opportunities that build upon Surrey’s existing work in this area and for exploring pathways to implementation.

Surrey is currently focusing on its Coastal Flood Adaptation Strategy, Biodiversity Conservation Strategy (focus on land use and urban forestry), implementing the BC Energy Step Code, and equity and health for community resilience. Each of these areas has opportunities for LCR, which is already being considered in some aspects.

The interviewees identified four key windows of opportunity for integrating an LCR lens:

1. **Undertaking an asset management process:** There is a desire to update the asset management strategy to include integrated climate action.
2. **Want to create a business case to include emissions and adaptation considerations in investment decisions:** Engaging Finance to push climate action forward is viewed as critical. Some work has already begun framing Surrey’s financial plan around sustainability goals, but more work is required, presenting an interesting LCR opportunity via priority-based budgeting.
3. **Interest in including mitigation and adaptation markers in procurement policies:** Procurement is one of the ways to bring Finance on board. Currently



policies focus on “fair, ethical, and prudent procurement.” This can be expanded to emphasize sustainability and climate change.

4. **Interest in considering emissions reduction and adaptation in stormwater and flood management planning:** Surrey has 22 Integrated Stormwater Management Plans for various areas around the city; identifying key areas for improvement using an LCR lens could support a detailed prioritization framework.

The Sustainability Office coordinates overall climate action, with the Engineering and Planning & Development departments playing key roles on both adaptation and mitigation. The Parks, Recreation and Culture department is also involved on the adaptation side, primarily through the work of Parks/Urban Forestry. The multiple departments involved in Surrey’s climate action suggests that the role of the Sustainability Office as a catalyst and coordinating body has been a success and played an integral role in planning, yet implementation remains a challenge. The significant planning and integration work already undertaken in Surrey presents a notable opportunity for designing and evaluating pathways to advance LCR implementation in practice and building upon and elevating the strong, existing collaborative culture found throughout the City of Surrey departments and amongst staff.

**The top two reasons Surrey is interested in applying an LCR approach:**

- To streamline planning and resources, saving time and money.
- To gain strategic direction on long term infrastructure decisions and investments.

**The top three enabling conditions needed to coordinate and implement climate action:**

- Support from senior leadership.
- A business case and/or a cost benefit analysis to determine financial reasons for taking action, and costs of inaction.
- Funding for integrated climate action.





## 12. TSLEIL-WAUTUTH NATION

### Interviewee & Contact: Sarah Dal Santo

The Tsleil-Waututh Nation (TWN) is a Coast Salish Indigenous community with its own government. As a coastal Nation living on the shores of Burrard Inlet, and relying on the availability of water resources and health of the land for its survival, climate change has the potential to profoundly impact TWN in all key aspects of community life. It will influence how the community harvests wild food and medicinal plants, how it accesses the shoreline and marine waters, and connects with nature. It poses risks to community health and infrastructure, and will influence the ability to practice spiritual and cultural ceremonies, and share cultural teachings.

TWN'S Vision 2020 Comprehensive Community Plan (2015) emphasizes mitigation and adaptation in a holistic stewardship approach. Guided by the Comprehensive Community Plan and Land Use Plan, TWN has made significant efforts to demonstrate leadership in climate mitigation by building its new administrative building as a LEED Platinum-equivalent building, powering community facilities with solar panels, planning for electric vehicle charging stations, and more. TWN recently adopted its 2019 Land Use Plan, which outlines further policies to reduce greenhouse gas emissions, take action to prepare for and reduce the impacts from climate change, and integrate climate change mitigation measures in work across all TWN departments.

TWN is currently in the process of developing a Community Climate Change Resilience Action Plan. While this plan is focused primarily on adaptation, there are opportunities to integrate LCR approaches into emerging climate action areas such as environmental stewardship, emergency management, and other administrative and implementation processes. TWN takes a holistic approach to managing land and water resources, providing synergies for the integration of LCR approaches that result in multiple co-benefits for the community.

The interviewee identified three key windows of opportunity for integrating an LCR lens:

1. **Performing a climate risk and vulnerability assessment and want to include mitigation:** There is an opportunity to include mitigation planning during the development of the Community Climate Change Resilience Action Plan. TWN has already completed climate change hazard and vulnerability assessments to build an understanding of how the Nation will be impacted by climate change and is currently preparing strategies to protect the community from climate change.
2. **Implementing mitigation and adaptation plans:** Development of the Community Climate Change Resilience Plan presents opportunities to strategize on pathways toward LCR integration and implementation.
3. **Want to access Infrastructure Canada funding:** With limited internal revenue TWN relies heavily on grant funding to achieve their goals.

Community Climate Change Resilience Planning is being led by the TWN Treaty Lands and Resources Department in collaboration with Public Works. Other departments such as Economic Development and Community Health also play key roles in informing and implementing climate action. A goal for the Community Climate Change Resilience Action Plan is to identify opportunities to strengthen inter-departmental collaboration in working towards climate action objectives.

**The top two reasons TWN is interested in applying an LCR approach:**

- To streamline planning and resources, saving time and money, and to achieve multiple co-benefits.

**The top three enabling conditions needed to coordinate and implement climate action:**

- Support from senior leadership.
- Funding for integrated climate action.
- The need for a tool or guiding framework for integrated climate action.





## 13. CITY OF VANCOUVER

### Interviewees & Contacts: Tamsin Mills & Angela Danyluk

As the City of Vancouver pursues ongoing development of its comprehensive environmental sustainability policy program, the Greenest City 2020 Action Plan (GCAP), it has become renowned as an innovator and leader in climate action and sustainability. The GCAP is the roadmap to becoming the greenest city in the world by 2020. Ten goals, including a Local Food Action Plan, Zero Waste 2040 Strategy, Transportation 2040 Plan, Green Fleet Management Plan, and 15 measurable targets, guide Vancouver toward this goal. Since being approved by City Council in 2011, 80% of the high priority actions named in the plan have been completed, such as creating a food scrap collection program, increasing farmers' markets and community gardens, and creating 3,200 green jobs since 2010. Adaptation and mitigation strategies and synergies are identified throughout the report. For instance, in the subplan, directions to 'eliminate dependence on fossil fuels' explore opportunities for building neighbourhood-scale renewable energy systems, that then must be cross-referenced with the City's 2018 Updated Climate Change Adaptation Strategy to ensure adaptability and resiliency of approaches. An emphasis on growing the urban forest is also recognized as a synergistic intervention that reduces emissions and vulnerability to heat.

As part of its Greenest City ambition, Vancouver has developed the 2015 Renewable City Action Plan and the 2018 Climate Change Adaptation Strategy. The former sets out Vancouver's emissions reduction goals, starting with a 33% reduction below 2007 levels by 2020, and leading in its effort to be 100% powered by renewable energy by 2050. Vancouver's adaptation goals include climate-robust infrastructure, resilient buildings, prepared and connected communities, healthy and vigorous natural assets, and coastal preparedness. Overall, many mitigation and adaptation linkages have been made and the 2017-2018 Implementation Update to the Greenest City Plan presents an opportunity to more explicitly consider, plan for, and implement LCR approaches.

Most recently, in April 2019, the city approved the Climate Emergency Response Report, with six big moves to ratchet up efforts on climate mitigation. Walkable, complete communities, active transportation, and restored forests and coastlines are part of these big moves. The urgency presented in this document and in its approval highlights the significant work already being done in the City of Vancouver to catalyze climate action, and also presents an opportunity to address LCR in action and implementation across the six priority areas.

The interviewees identified seven key windows of opportunity for integrating an LCR lens:



1. **Undertaking an asset management process:** In 2018, the city approved its 2019-2020 Capital Plan. The GCAP is referenced as a guiding initiative for a number of asset management categories. One of the key mainstreaming actions in the Adaptation 2018 Strategy is incorporating climate risks in the upcoming asset management framework.
2. **Updating land use plan:** Official development plans and local area plans are applied to different areas of the city and inform land use planning for the region; the GCAP refresh will feed into the City Planning process that is starting now.
3. **Climate change and sustainability is a municipal priority:** In 2019, the city officially declared a climate emergency, and is heavily investing in climate action, presenting opportunities for planning and coordinating LCR strategies.
4. **Want to create a business case to include emissions and adaptation in investment decisions:** Creating a business case for considering climate mitigation and adaptation in investment decisions will be important, particularly as the city aims to substantially reduce emissions from new buildings and construction projects.
5. **Implementing mitigation and adaptation plans:** Vancouver is well along the path of implementing its mitigation and adaptation plans; accelerating mitigation goals to be 100% renewable by 2050 and committed to integrating adaptation, particularly relating to coastlines and stormwater/flood management, across city operations.
6. **Want to include LCR in subdivision development standards:** The subdivision bylaw was amended in 2015 with few references to climate action, presenting an opportunity for renewal.
7. **Interest in considering emissions reduction and adaptation in stormwater and flood management planning:** The city is already working on integrating climate action through the Rain City Strategy, which relies heavily on green infrastructure and builds upon the 2016 Rainwater Management Plan.

The Sustainability Group is the lead on the majority of climate action; having one department leading the work and coordinating others' efforts suggests that their model of embedding sustainability subject matter experts in other departments has been successful at achieving desired outcomes. As the city moves from planning to implementation, there may be opportunities to coordinate key staff, committees, and advisory groups to consider an LCR lens, streamlining and synergizing policy approaches, and mobilizing awareness and cross-departmental synergies for coordinated implementation across the Greenest City, Renewable City, Adaptation, and Climate Emergency plans and programs.

**The top two reasons Vancouver is interested in applying an LCR approach:**

- To streamline planning and resources, saving time and money.
- To prevent emissions and adaptation contradictions in decisions.

**The top three enabling conditions needed to coordinate and implement climate action:**

- Support from senior leadership, and provincial support through policies or mandates.
- A systems approach like lifestyle costing to consider benefits and trade-offs of policies and programs.
- A clear definition of how LCR fits in departments, roles, and outcomes.

## **ACT** Adaptation to Climate Change Team

ACT (the Adaptation to Climate Change Team) in the Faculty of Environment at SFU brings leading experts from around the world together with industry, community, and government decision-makers to explore the risks posed by top-of-mind climate change issues and to identify opportunities for sustainable adaptation.

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