

Schedule 1 to the Minutes of the Regular meeting of Richmond City Council held on Monday, November 28, 2016.



ANNUAL HIGHLIGHTS 2015 – 2016

Steps for Sustainability

The Fraser Basin Council	2
Reflections from the Chair	3
2015- 2016 Year in Review	
■ Climate Change and Air Quality	4
■ Watersheds and Water Resources	10
■ Sustainable Communities and Regions	14
Our People	18
Connect with Us	20

Fraser Basin Council

Who We Are

About the Fraser Basin Council

Established in 1997, the Fraser Basin Council (FBC) is a charitable, non-profit society that advances sustainability in the Fraser River Basin and throughout British Columbia.

Board of Directors

FBC is led by 38 Directors who represent the four orders of government (Federal, Provincial, Local and First Nations), the private sector and civil society. Our Directors make decisions by consensus. This broad-based, collaborative governance structure is one of the first of its kind in British Columbia.

Staff

Our multi-disciplinary staff work in the five regions of the Fraser Basin and serve communities province-wide.

Office Locations

FBC staff work from offices in the Greater Vancouver–Sea to Sky region (Vancouver), Thompson region (Kamloops), Cariboo-Chilcotin region (Williams Lake and Quesnel) and Upper Fraser region (Prince George) and from Abbotsford (Fraser Valley Region) and Vernon in the Okanagan.

What Inspires Us

Our Vision

Social well-being, supported by a vibrant economy and sustained by a healthy environment

What We Do

Our Mandate

To advance sustainability in British Columbia, with a core focus on the Fraser River Basin

The Work

We bring people together to find collaborative solutions to today's sustainability challenges, with a focus on climate change and air quality, watersheds and water resources, and community sustainability and resilience.

Priority Roles

FBC's two main roles are as a sustainability educator and facilitator. We bring together people from multiple sectors to explore collaborative, sustainable solutions to issues. Our other services include program management and administration, monitoring and reporting, conflict resolution and research and analysis.



Fraser Basin Council

REFLECTIONS FROM THE CHAIR Conversations that Count

When founding FBC Chair Iona Campagnolo convened meetings on thorny issues, she asked everyone “to put their egos in their pockets.” It was a clear call for a different kind of conversation.

At FBC we always strive to instill a spirit of collaboration among public sector, private sector and civil society leaders as a way of reaching long-term, sustainable solutions to current challenges. This approach starts in our own boardroom and ripples out to all our work we undertake.

FBC is invited to facilitate conversations that help people define the scope of issues of interest, a process for working together, common goals, and respective responsibilities and commitments. We help participants recognize and evaluate the social, economic and environmental dimensions of any potential course of action to ensure the implications of decisions they make are as clear as possible.

We want to identify solutions that can advance all dimensions of sustainability. The collaborative Prince George Air Improvement Roundtable, for example, helps public and private sector interests support environmental health, since they understand it is fundamental to the well-being of residents and maintenance of a vibrant workforce in the region. Likewise, the Shuswap Watershed Council sees a healthy lake system and watershed as pivotal to good quality drinking water, the health of residents and a strong local economy, which includes food production and tourism.

Over the past year, FBC has worked on dozens of initiatives, large and small. We have, for example, helped advance electric vehicle infrastructure in British Columbia, watershed planning and action in the Thompson, Fraser Valley and Upper Fraser regions, climate change adaptation in the natural

resource sector, energy efficiency in remote communities, and completion of the first phase of development of a Lower Mainland Flood Management Strategy.

In 2017 the Fraser Basin Council will celebrate our 20th anniversary. We turn to our third decade of service with great excitement, guided by a fresh new five-year Strategic Plan. While new work will be embraced, FBC reaffirms our key commitments to:

- Advance sustainability in the Fraser Basin and throughout BC
- Serve in our primary roles as facilitator and educator for sustainability
- Focus efforts in three areas: 1) climate change & air quality, 2) healthy watersheds and water resources and 3) sustainable communities and regions.

Thanks to all within FBC who completed service during the year for their immeasurable contributions: Directors Lara Beckett, Allan Frederick, Ruth Legg, Barbara Steele and James Tansey, staff members Joan Chess, Maureen LeBourdais, Vanadis Oviedo and Donnella Sellars, staff interns Salome Buglass and Naomi Robert, and Trisha Gustafson who backed up our Prince George office during a staff leave. I would also like to thank all our current Directors, alumni, staff, funders and program partners for your support, hard work and willingness to have the conversations that count.

Colin Hansen
Chair, Fraser Basin Council



Cover photo insets: Phase 1 completion of the Lower Mainland Flood Management Strategy | Emotive ambassador Beth Liang | Father & son learn about the Prince George Indoor Radon Study



TAKING ACTION ON Climate Change & Air Quality

In December 2015 Canada signed the Paris Agreement within the United Nations Framework Convention on Climate Change. Leaders of the 195 signatory nations are making commitments to reduce greenhouse gas emissions and to take steps to adapt to the climate change impacts that are now unavoidable. FBC is here to support work by public and private sector leaders in British Columbia on the serious climate challenges ahead.

“Plug in BC” – Towards Clean Energy in Transportation

Electric vehicles (EVs) are a good option for drivers who want to cut greenhouse gases and other harmful emissions — particularly in BC where nearly 98% of electricity is clean energy.

In March 2015 the Province of BC announced a new \$6.9 million investment over three years to encourage uptake of clean energy vehicles in BC. This included over \$1.9 million to expand the network of EV charging and hydrogen fuelling stations in BC and \$600,000 to encourage fleet purchases of the vehicles.

Expansion of Charging Station Network — A cornerstone of the new provincial program was an investment in new residential and publicly accessible EV charging stations. FBC supported this work in 2015 by conducting a gap analysis to identify priority routes for placement of up to 25 new direct current fast-charger stations. DC fast chargers let EV drivers quickly top up a battery, providing up to 80% of a charge within 20 minutes and making longer distance travel more feasible and convenient.

The gap analysis involved consultations with industry stakeholders, survey results from plug-in EV drivers, and use of a comprehensive EV mapping tool. Recommendations were to focus the DC fast chargers initially in regions with the highest EV adoption rates and to facilitate a full corridor loop in the Southern Interior and Southern Vancouver Island. There are currently over 1,000 public charging stations (including 27 DC fast chargers) province-wide.

A separate analysis focused on priorities for the expansion of Level 2 stations. It was determined that that installation of charging infrastructure is most challenging in multi-unit residential buildings (MURBs), such as strata complexes and apartment blocks, and that support for MURB installations would have the greatest impact. In March 2016, the Province of BC confirmed that \$600,000 of the investment would be allocated to MURBs province-wide.



FBC oversaw a gap analysis to identify priority locations for expansion of BC's electric vehicle public charging network. In 2016 new incentive programs were rolled out to encourage charging stations installations in multi-unit residential buildings and in locations for use by fleets. BC boasts the largest public charging infrastructure network in Canada, and has the highest per capita uptake of electric vehicles. Find stations at www.plugshare.com or www.chargehub.com.

More popular than ever! The Emotive booth was busy on the trade show floor of the 2016 Vancouver International Auto Show.

FBC teed up nearly 1,000 test drives on eight EV models.

Photo right courtesy of BC Scrap-It and photo below courtesy of Metro Vancouver.



The MURB initiative, managed by FBC, offered residents rebates of 75% of the pre-tax purchase price of a charging station to a given maximum. The program hit capacity in short order, attesting to the growing popularity of EVs.

West Coast Electric Fleets & Fleet Champions — The Pacific Coast Collaborative is a joint commitment of the States of Alaska, Washington, Oregon and California and the Province of British Columbia to accelerate a low-carbon economy.

Through the “West Coast Electric Fleets (WCEF)” initiative, public and private fleets pledge to purchase zero-emission vehicles and make them a select percentage of all their new vehicle purchases.

FBC manages the WCEF program within BC, offering fleet managers information, tools, opportunities for volume procurement and a peer network. Electric vehicles can work well for many fleets, offering high fuel economy and stable fuel costs, less maintenance and lower greenhouse gas emissions. By signing the WCEF pledge, a fleet can take advantage of incentives under a new provincial Fleet Champions Program, which includes a free EV business case assessment for that fleet and a rebate on the purchase of a new Level 2 charging station.

There is a better road ahead! Visit www.pluginbc.ca.

When Fleets Go Electric

GeaZone

In 2012 Ecopreneur Andrew Mitchell started GeaZone – a Victoria-based all-electric delivery service. Starting with one electric tricycle, Andrew expanded his business quickly to two e-trikes, three Nissan Leafs and two Smith electric trucks. Growth of the business has doubled annually. GeaZone has put 500,000 km on its fleet vehicles and saved 400,000 kg in carbon emissions. The company is the first private sector participant in the West Coast Electric Fleets program.

City of Surrey

The City of Surrey was the first major city in Canada to host a public electric vehicle charging station. That was in 2011, the same year the city purchased its first Nissan Leaf. The city determined that, if it could make use of EVs in its fleet for 60-80 km a day, there would be a five- to six-year return on the investment. Bonus – 96% of city staff who drove the EVs said they preferred them to gasoline cars. The city now plans to go from three Nissan Leafs to six in the near future.

City of Vancouver

The City of Vancouver piloted the Mitsubishi i-MiEV as part of its fleet in 2009. Three years later, the city expanded the fleet to 17 electric vehicles, not including electric bikes and scooters used by staff to travel to meetings. The city fleet now operates 31 EVs in a variety of functions, and expects to expand use to 115 EVs by 2020. The city is also working with the Modo Car Cooperative to create additional EV access points. The success of the EVs in the city's fleet has helped to reduce the fleet's GHG emissions by 11% from 2007 levels.

Find our EV fleet case studies at: www.westcoastelectricfleets.com

GeaZone, a delivery service in Victoria, has saved over 400,000 kg of carbon emissions by going electric.





Jérémie Bernardin and Rachel Randt of the Emotive team talk electric vehicles at a 2015 Emotive community event in Burnaby

Emotive: The Electric Vehicle Experience

Emotive is a public outreach campaign on electric vehicles, a partnership of the Fraser Basin Council, Province of BC and Metro Vancouver.

Emotive demonstrates that EVs are convenient, powerful and fun to drive – all while being good for the environment. Our team takes a multi-pronged approach to plugging people in, which means connecting with them online, and in real life.

We hosted our most successful Emotive ride-and-drive event ever at the 2016 Vancouver International Autoshow in March, thanks to our program partners: the Province of BC, BC Scrap-It, Metro Vancouver, EV auto manufacturers and over 30 volunteer Emotive ambassadors.

In the past year, Emotive also celebrated:

- 2,000+ followers on Facebook
- 25 additional community events featuring ride-and-drives, demonstrations and displays in communities across BC, including, for the first time, Abbotsford, Nelson, Tofino, Langley, Colwood, Kamloops, Port Moody and Prince George
- Participation of over 90 EV ambassadors who have joined us at these events and shared their personal experiences with the public – our sincerest thank you!

Reducing Open Burning

Outdoor burning is one source of airborne particulate matter. In 2015 the BC Clean Air Research Fund supported an assessment of policy options to reduce open burning in the Fraser Valley.

Steps to Clear the Air

Indoor Radon Study – Radon is an odourless, colourless radioactive gas – a known carcinogen and the second leading cause of lung cancer in Canada. The BC Lung Association and FBC worked with community partners in Prince George in 2014 as part of Canada’s largest community-wide study on indoor radon, together with a public awareness campaign.

That study helped paint a clearer picture of radon gas risks in the region, and yielded data relevant to BC health policies and BC building construction standards.

There have been encouraging results. The Aboriginal Housing Society of Prince George, after finding a third of its 136 housing units tested high for radon, worked to mitigate the problem and successfully lowered radon levels in all the housing units to well below the Health Canada guideline. The Province of British Columbia instituted new radon mitigation measures in the BC Building Code. The most significant change is the requirement for a full radon vent pipe to be attached to the rough-in and exhausted to the outdoors in areas of the BC with an elevated risk for the presence of indoor radon. Homeowners are then able to add a venting fan at a reasonable cost. For details, see the 2015-2016 project reports (www.fraserbasin.bc.ca/Radon_Study.html).

Air Quality Roundtable – The Prince George Air Improvement Roundtable (PGAIR) is a multi-stakeholder, non-profit society that brings together Prince George area representatives from business, industry, community groups, government, UNBC and Northern Health as well as members of the general public.

The focus is on research, monitoring, recommendations, public education and implementation of air quality improvements in the Prince George airshed. PGAIR is managed by FBC’s Upper Fraser team and is recognized as an information hub on air quality.

PGAIR works on strategies to reduce pollutants, including fine particulate matter that can impact respiratory and cardiovascular health. PGAIR targeted an overall 40% reduction in PM_{2.5} over 1997 levels in Prince George by 2016. Industry has made progress in the past 15 years to reduce emissions, as have municipal and provincial departments through street sweeping and other dust reduction techniques. More work is needed in all sectors to cut transportation-related emissions and dust reduction on private parking lots. Hot, dry summers pose the greatest challenge, leading to an upswing in wildfires and related pollution.





“Let’s Clear the Air”, “Idling Gets You Nowhere” and “Keeping the Dust Down” are animated shorts you’ll find on PGAIR’s YouTube channel

In 2015-2016 PGAIR raised awareness, facilitated discussions on use of wood-ash and administered the provincial woodstove exchange incentive program. PGAIR is a helpful model of collaboration. Its work inspired the creation of a new Kamloops Air Quality Roundtable, which began work in 2016. FBC has also taken on management of the Prince George Air Monitoring Working Group, which pools resources to support an ambient air monitoring network.

Air Quality Research — The BC Clean Air Research Fund (BC CLEAR) promotes research excellence by funding transformative research of strategic importance for the management of air quality in British Columbia.

Four new air quality research projects were funded in 2015-2016:

- Modelling Smoke Plume Rise for BC Wildfires (UBC, Dr. Roland Stull)
- Investigating Air Pollution as a Risk Factor for Autism: A Population-Based Analysis for BC (SFU, Dr. Megan Winters)
- Enabling First Nations Participation in the Wood Stove Exchange Program (Pinna Sustainability, Gillian Aubie-Vines)
- Open Burning Policy Options in the FVRD Phase II (Fraser Valley Regional District, Stacy Barker)

The BC Ministry of Environment sponsors BC CLEAR, which is jointly managed with Metro Vancouver and Environment Canada. The Fraser Basin Council administers the program in partnership with the BC Lung Association. Research reports on all projects are available to everyone – visit the BC CLEAR section of the FBC website.

Graduate-level scholarships are available to support research, and these are managed by FBC on behalf of funders. Our congratulations in 2016 to **Erin Evoy**, recipient of the Robert Caton Scholarship, and **Angela Yao**, recipient of the David Bates scholarship, as well as **Marabeth Kramer** and **Larissa Richards**, recipients of 2015-2016 BC CLEAR scholarships.

The **Elizabeth Henry Scholarship for Communities and Environmental Health** made an inaugural call for applications in mid-2016. This scholarship is in memory of FBC’s Elizabeth Henry, a valued member of our Climate Change and Air Quality team, whom we lost too soon, in 2014.

Let’s Clear the Air was a 2015-2016 outreach campaign to promote better wood burning practices.

FBC connected with 500 Fraser Valley residents at community events about ways to reduce smoke from wood-burning appliances. Over 100 families worked on better practices in stove use and upkeep and wood storage, thereby reducing particulate matter (PM_{2.5}) by an estimated 1000 kg.

Photos: (top) Christina Toth of FBC demonstrates a mechanical wood splitter during the “Clear the Air” educational campaign on wood burning. (bottom) An Abbotsford homeowner stacks firewood crisscross for stability on top of pallets before protecting the completed piles with tin sheets.





FBC hosted *Wild Weather Forecast: Tackling the “New Abnormal”* in Canada’s Natural Resource Sector @Globe 2016, featuring (left to right) Mary Preville (Natural Resources Canada), Megan Hanacek (Association of BC Forest Professionals), Sean Capstick (Golder Associates) and Neil Freeman (Horizon Utilities). FBC’s Chair Colin Hansen introduced the session and Bob Purdy (right) moderated.

BC Regional Climate Adaptation Collaborative

Another focus of FBC’s work, in partnership with Natural Resources Canada, is to help BC’s communities and natural resource sector adapt to climate impacts.

Here are highlights from 2015-2016:

Adaptation Webinar Series & Workshop — FBC connected with 100 resource industry and public sector organizations through a webinar series and a live workshop. Participants learned about coastal adaptation work underway in BC communities, updated storm surge modelling, vulnerability in highway infrastructure, and climate risk in mining operations. Videos are on FBC’s YouTube channel.

Wild Weather Forecast @Globe 2016 — In March FBC organized “Wild Weather Forecast: Tackling the New Abnormal in Canada’s Natural Resource Sector,” an interactive presentation at the Globe 2016 Leadership Summit for Sustainable Business in Vancouver. The dialogue drew speakers and participants from government, forestry, mining and energy. FBC later presented its case study series on adaptation in BC’s mining sector at the Adaptation 2016 national conference in Ottawa.

BC Climate Risk Network — The Climate Risk Network, with support from FBC, was formed to connect public organizations in BC that are working on climate change and adaptation issues. The network shares information on climate risk programs and policies, and serves as a sounding board for the provincial government, federal government and other members of the network as they develop new initiatives.

Climate Tools for Leaders — Do you want to be a leader on climate change in your community? Find the resources you need on climate change mitigation and adaptation through two first-stop sites. One is the **Climate Action Toolkit** (Mitigation tools: www.toolkit.bc.ca) and the second is ReTooling for Climate Change (Adaptation tools: www.retooling.ca).



Top: A First Nations Home EnergySave workshop in January 2016 at Musqueam First Nation Cultural Centre brought together housing managers, senior staff and elected leaders to discuss priority actions for energy efficiency in renovation and new construction, as well as to share successes and explore financing options.

Bottom: A field tour of passive house construction showcased opportunities for energy savings.

The First Nations Home EnergySave program helps BC First Nations communities reduce home energy use

Clean and Efficient Home Energy

First Nations Home EnergySave — Through the First Nations Home EnergySave program, FBC supports BC First Nations communities and community leaders in their efforts to reduce home energy use, to share experiences and success stories, and to build local capacity and economic development. In a popular monthly mentorship webinar series, a number of community champions and technical experts shared their experiences on energy efficiency projects.

Another opportunity to showcase best practices and innovations was in a Vancouver workshop called “Saving Dollars on Energy: Increasing Energy Efficiency for First Nations Housing” and a complementary field tour by the Canadian Passive House Institute. Passive house construction is designed from the ground up to achieve dramatic reductions in energy compared to conventional construction, through such features as energy-efficient shape, solar exposure, superinsulation, advanced windows, airtightness and ventilation with heat recovery.

Kitasoo First Nation has a passive construction pilot project underway. The First Nations Home EnergySave program is funded by the BC Ministry of Energy and Mines, Real Estate Foundation of BC, BC Hydro and Indigenous and Northern Affairs Canada.

Remote Communities Initiative — In 2015-2016, FBC worked with three remote First Nations communities — Kwadacha, Tsay Keh Dene and Dease River — and with the Qualicum School District (for a school on Lasqueti Island) as they advanced or completed energy efficiency and clean energy projects, including some powered by solar and biofuels. Many of these communities have high energy use and high costs from diesel-powered electrical generation, so cleaner energy sources and greater energy efficiency can reduce both emissions and costs.

Find FBC on YouTube

A Home-Warming Story – Energy Efficiency & Savings at Kwadacha First Nation is an animated short video.

Catch it and our **EnergySave** webinar series on FBC’s YouTube channel.





SUPPORTING STEPS FOR Healthy Watersheds & Water Resources

BC's new *Water Sustainability Act* took effect on February 29, 2016, together with an initial set of regulations. The regulations cover applications for allocation of groundwater and surface water, use of water from streams or stream alteration, water user fees, requirements related to wells and groundwater protection, dam safety, water districts and penalties for offences. Other regulations and policies will be phased in for other components, including water sustainability plans, measuring and reporting and licence reviews.

In the context of climate change and growing demand for water in many sectors, water management in BC is one of the most critical issues for the future – and there are many challenges ahead. FBC works to support sustainable solutions on these fronts. We also work on issues relating to flood and public safety.

Regional Watershed Work

FBC offers facilitation and program support for many regional watershed initiatives.

Here are highlights from 2015-2016:

Shuswap Watershed Council – The Shuswap Watershed Council (SWC) is a collaborative initiative to enhance water quality and safe recreation in the Shuswap, now and for the future. Participating in this initiative are the Columbia Shuswap Regional District (CSR), Thompson-Nicola Regional District (TNRD), City of Salmon Arm, District of Sicamous, Secwepemc Nation, BC Ministry of Environment, BC Ministry of Agriculture, Regional District of North Okanagan and several community members. Funding is from the CSR, TNRD, District of Sicamous and City of Salmon Arm. Within the water quality program, UBC Okanagan is now researching how and where phosphorus from land activities enters surface water. Details of the SWC work are at www.shuswapwater.ca.



Brenda Melnychuk (left), a volunteer with the Adams River Salmon Society, accepts the 2015 BC Interior Stewardship Award for Ecosystem Excellence, presented by FBC's **Erin Vieira**.

Presentation was made at the 2015 (11th annual) BC Interior Stewardship Workshop in Grindrod and Enderby on November 4 and 5. FBC and Fisheries and Oceans Canada co-hosted the workshop, which brought together over 50 people active in stewardship work in the BC Interior.

Gardom Lake – The Gardom Lake Planning Committee, facilitated by FBC, completed its work in 2015. This was a collaborative process aimed at protecting and managing impacts on Gardom Lake near Enderby. The goals in the final Gardom Lake Management Plan are to maintain or improve water quality, riparian zones, upland areas, septic systems, baseline recreational data and lake access. There was consensus on the planning committee about many issues – the issue of lake access was addressed with new signage, minor improvements and monitoring of boat traffic. The plan is available at www.gardomlakeplan.ca.

In the context of climate change and a growing demand for water in many sectors, water management is one of the most critical issues for the future

Nicola Watershed – A multi-interest Nicola Lake Steering Committee oversaw projects that included completion of the Lower Nicola Valley Groundwater Budget report and Phase 1 of the Nicola Fish Water Management Tool (FWMT). The tool is intended to allow operators at the Nicola Lake Dam to consider a wider range of biophysical, ecological and socio-economic factors helpful for dam operations, including the in-lake and downstream consequences of water releases in terms of predicted flows at key locations. An interim tool was put in place for the summer of 2016 and a final version of the tool is expected by 2017. The Steering Committee would like to develop a Nicola Watershed Plan that encompasses the full watershed if funding becomes available.

Cultus Lake Aquatic Stewardship Strategy (CLASS) – CLASS is a network of 60 agencies that identify key issues and support research to protect the ecological health of Cultus Lake and its watershed. CLASS obtained funds for a study on eutrophication and for hydro-acoustic software to measure the spread of Eurasian Watermilfoil in the lake. The data is helpful for improving the management of E. milfoil, lake nutrients and septic infrastructure.

Nechako Watershed Roundtable – In the fall of 2015, the Nechako Watershed Roundtable was formally launched in the Upper Fraser region to help protect and improve the health of the Nechako watershed for current and future generations. The Roundtable includes representation from First Nations, the Province of BC, local governments and other agencies and organizations having responsibilities and interests in the watershed. The intent is to connect with communities on current issues, develop a Nechako watershed strategy and advise on or develop stewardship activities.

Advancing Watershed Sustainability

In 2015-2016 FBC completed a three-year collaborative project with the BC Wildlife Federation to advance watershed conservation and sustainability in the province. A key component was raising awareness of the importance of watershed sustainability and aquatic life.

To build capacity in local stewardship groups, FBC produced new online resources and organized annual workshops on a range of issues:

- watershed health indicators & mapping
- keys to successful watershed governance
- governance funding & delivery models
- public awareness of watersheds
- watershed management activities
- potential for a natural resource practices board.

The workshops were well attended by community leaders and watershed stewards. Sessions covered cumulative effects, Indigenous-led watershed management initiatives and collaborations, river-related policies and initiatives, assessment of Lower Fraser habitat compensation projects and capacity-building for watershed governance.

New discussion papers were also rolled out:

- Cumulative Effects Framework for BC
- Guidance for Collaborative Watershed Governance in BC
- Wetlands and the *Water Sustainability Act*: Opportunities for Wetlands Protection and Conservation.

Our Watersheds team was invited to speak at many watershed educational events throughout the year, including at the 2016 Salish Sea Ecosystems Conference where the focus was on flood management & climate change and on green infrastructure.

Ready to carry on the conversation in your community?

You'll find the right resources in the Watersheds & Water Resources section of our site at www.fraserbasin.bc.ca.



Top: MEC goes Salmon-Safe – Mountain Equipment Co-op Chief Financial Officer Sandy Treagus takes to the rooftop garden at the MEC head office in Vancouver for a chat about water-wise landscaping with Amy Greenwood, FBC's Program Manager for Salmon-Safe BC Communities. The MEC building and grounds have been certified Salmon-Safe, the first urban site in BC to gain this recognition for its environmentally friendly practices.

Right: FBC Chair Colin Hansen congratulates MEC's Sandy Treagus (centre) and Shawn Mitchell on the co-op's Salmon-Safe certification in October 2015.



Sustainable Fish and Fisheries

Salmon-Safe Urban Certification – In October 2015, the head office campus of Mountain Equipment Co-op near the eastern terminus of False Creek Flats in Vancouver was certified as the first Salmon-Safe urban site in British Columbia.

MEC earned the Salmon-Safe certification for its progressive land and water management practices within the head office building and on the grounds, including the on-site capture and use of rainwater, vegetated swales designed to filter runoff from adjacent sidewalks and parking surfaces, and other environmentally friendly landscaping practices.

The Fraser Basin Council and Pacific Salmon Foundation introduced Salmon-Safe to British Columbia in 2011. Since then, over 45 BC farms, ranches and wineries have also been certified for actions to protect Pacific salmon, enhance water quality and restore habitat on agricultural land. Learn about the urban and agricultural programs at www.salmonsafe.ca.

Pacific Fisheries Monitoring & Compliance (M&C) Panel – The M&C Panel is an independent, collaborative group of fishing and conservation interests. The intent of the Panel is to inspire public confidence in Pacific fisheries through improved principles and standards for fishery monitoring, catch reporting and compliance. The Panel worked over the past year, with administrative support from FBC, to help Fisheries and Oceans Canada (DFO) prioritize fishery units for risk assessments.

Under DFO's Strategic Framework for Fishery Monitoring and Catch Reporting in Pacific Fisheries, every fishery in BC will undergo a formal risk assessment, according to standardized criteria, to determine the level of risk the fishery represents to the ecosystem (based on impacts on the target stock(s), by-catch and ecological community) and based on fisheries management needs. The process will help ensure appropriate monitoring and reporting requirements are in place.

The Panel is looking at its future role and opportunities to prepare those in BC fisheries for the upcoming risk assessments. Find out more at www.pfmcp.ca.

Thompson Region Initiatives – FBC supported several fisheries initiatives in the Thompson region. A Thompson Steelhead Working Group brought together representatives of the Nlaka'pamux, Secwepemc, provincial and federal governments to work on a Steelhead recovery and management plan. Other projects focused on sensitive habitat mapping and development of a habitat index on the South Thompson and Thompson Rivers and an update of DFO's Strategic Review of Fisheries Resources for the South Thompson–Shuswap Habitat Management Area.

Lower Mainland Flood Management Strategy

Phase 1 of the **Lower Mainland Flood Management Strategy (LMFMS)** was completed in 2016 – with dramatic findings.

There is a significant and growing risk of a large-magnitude flood in BC's Lower Mainland. If a major Fraser River or coastal flood were to occur between now and 2100, it would trigger losses estimated at \$20 to 30 billion — making it the most costly natural disaster in Canadian history.

The analysis was commissioned by the Fraser Basin Council in managing Phase 1 of the Lower Mainland Flood Management Strategy (LMFMS) on behalf of 43 government and private sector partners. Work of the past two years has included an analysis of Lower Mainland flood scenarios, a regional assessment of flood vulnerabilities, and a review of current flood protection works, policies and practices.

Lower Mainland flood risks are projected to worsen over the next 85 years, both in terms of flood frequency and size, because of sea level rise and other projected impacts of climate change.

The regional vulnerability assessment estimated flood losses related to residential, commercial, industrial and public/institutional buildings, infrastructure, agriculture and interruptions in cargo shipping at Vancouver's port. The assessment was based on four sample flood scenarios: two coastal flood scenarios (Present Day and 2100) and two Fraser River flood scenarios (Present Day and 2100). All four scenarios are estimated to have a return period of 1 in 500 years (or a 0.2% chance of occurring in any given year). This is equivalent to the 1894 Fraser River flood of record.

Summary of Projections under Flood Scenarios



Coastal Flood Scenarios



Fraser River Flood Scenarios



Find Lower Mainland Flood Management Strategy reports and maps at floodstrategy.ca

Any one of the four flood scenarios is expected to be three to five times more costly than the 2013 Alberta floods and would place severe strain on the regional, provincial and national economies.

In brief:

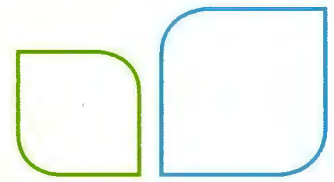
- Present day Lower Mainland flood scenarios would result in losses estimated at \$19.3 billion (coastal flood) or \$22.9 billion (Fraser River flood)
- Year 2100 Lower Mainland flood scenarios would result in losses estimated at \$24.7 billion (coastal flood) and \$32.7 billion (Fraser River flood).

The estimates are based on certain assumptions. One is that each of the flood protection dikes in the region would fail during a major flood and that flood waters would spread unimpeded. In fact, it is possible that some dikes would breach during a major flood while others would not. The Phase 1 summary report notes that many Lower Mainland dikes were reconstructed in the 1970s and 1980s according to the standard of the day, which has since been recognized as not protecting against the Fraser River flood of record (the design flood). The dikes were not designed to address climate change effects on flood risk.

A recent assessment carried out in Phase 1 of the LMFMS — commissioned by the Provincial Inspector of Dikes — shows that 71% of the assessed Lower Mainland dikes are vulnerable to failure from overtopping during a major Fraser River or coastal flood scenario. Only 4% of assessed dike segments meet the current provincial standard for dike crest height, which includes 0.6 m of freeboard above the water surface elevation of the design flood event. Some dikes have other vulnerabilities related to geotechnical stability during floods and earthquakes, erosion protection, or administrative practices, such as secured rights of way and inspection practices.

For a summary report, full technical reports and maps, head to www.floodstrategy.ca.

Phase 2 of the LMFMS is underway in 2016 and will focus on developing a regional flood action plan by 2018, including a cost-sharing proposal for flood protection. The Province of BC has committed \$1 million towards Phase 2 development of the flood action plan.



WORKING WITH YOU TO BUILD

Sustainable Communities & Regions

Local governments in BC have worked over the past eight years to incorporate sustainability planning principles into municipal and regional planning processes, a reflection of their commitments under the Gas Tax Agreement. The Smart Planning for Communities (SPC) program, managed by FBC, offered advice and support, thanks to our team of sustainability facilitators. It was gratifying to see the good work communities have done over the years. FBC is always ready to support communities, large and small, in their quest to create more sustainable ways for people to live, work and play.

Smart Planning for Communities

The Smart Planning for Communities program successfully drew to a close in 2016. The concept behind the program was simple: to help BC communities understand and undertake integrated community sustainability planning in a way that is consistent with each community's vision for the future.

With financial support from a number of partners, including the Real Estate Foundation of BC, SPC offered education, resources and advice to local and First Nations governments, particularly in rural communities.

Our team of the past few years has been small, but committed, and saw success on several fronts. In some cases, SPC was requested to provide hands-on assistance. Granisle, 100 Mile House, Clinton and Kaslo all embraced community sustainability planning processes with support from SPC staff – and it was exciting to see the plans take shape with community input and with a view to social, cultural, economic and environmental considerations.

FBC is always ready to support communities in their quest to create more sustainable ways for people to live, work and play



FBC Directors tour a site west of Quesnel damaged by both Mountain Pine beetle and forest fire. Director John Massier (left) discusses the impacts MPB has had on timber supply for the forest sector, the largest economic sector in Quesnel.



Communities have fulfilled their undertakings in various ways, some through stand-alone sustainability plans and others through Official Community Plans, asset management plans climate change action plans or policy statements.

An important outcome of the SPC program overall has been to foster good relationships between local governments, and between local and First Nations governments. In 2015-2016 we worked with six communities from one First Nation, several community organizations and two local governments as they worked to build robust and respectful relationships. As a partner in Learning Initiatives for Rural and Northern BC (LIRNBC), SPC found good opportunities for education and relationship-building.

Most rural local governments in BC are mindful of sustainability planning principles and are integrating these into existing processes or undertaking separate processes. This fact emerged from a 2012 research project, which also identified three sustainability themes as top priorities for many rural local governments. Those were:

- **Protecting drinking water supplies**
- **Pursuing economic diversification**
- **Encouraging the health and well-being of residents.**

Tools and resources for sustainability planning will continue to be available in the SPC section of the Fraser Basin Council website (www.smartplanningbc.ca) and the Climate Action Toolkit (www.toolkit.bc.ca).

Beetle Action Coalition

Community leaders created the Cariboo Chilcotin Beetle Action Coalition (CCBAC) – in cooperation with the Province of BC – to help mitigate the impacts of the Mountain Pine Beetle epidemic on the region's forests and forest industries and to secure a brighter future for the people and the communities of the Cariboo-Chilcotin.

In 2015 the CCBAC board began a strategic renewal to better enable fresh investments in economic development, to help coordinate initiatives across the Cariboo-Chilcotin and to advocate for investments in the region by all sectors.

The Fraser Basin Council serves as program manager for CCBAC through support from our regional staff.

Discover initiatives underway and information on grants at www.c-cbac.com.



Working with Communities in the Basin & Beyond

With roots in the Fraser Basin, FBC proudly supports diverse projects province-wide. We facilitate multi-interest dialogues and help people find ways to work together on local and regional issues of the day.

Here are examples from 2015-2016:

Building Harmony on the Fraser – FBC continued to support the Fraser River Peacemakers under the banner of “Harmony on the Fraser.” The Peacemakers encourage collaboration and river safety for First Nations and recreational fishers on the Fraser River. The Peacemakers demonstrate the practical value of direct outreach, education and conflict resolution.

Giving a Hoot in the Valley – Also in the Fraser Valley, FBC offered administrative support for a field and data survey of Western Barn Owls (*Tyto Alba*) by biologist Sofi Hindmarch, along with installation of 30 new nesting boxes in the central and eastern Fraser Valley. As nocturnal grasslands predators of voles and other rodents, barn owls are important to ecosystem balance and are natural allies with farmers for rodent control on agricultural lands. Yet barn owls are listed as a species at risk and face serious threats, such as diminished hunting grounds and poisoning from agricultural rodenticides. The challenge is to support owl populations by minimizing these risks.

Forging a Path with the Shuswap Trails Alliance – Collaborative work is underway in the Shuswap to develop a multi-user trail strategy for the region. A Shuswap Regional Trails Strategy will be founded on an acknowledgement of Secwepemc Nation territory, accountable protocols for planning and approvals, a focus on ecology and access management priorities, and future steps such as marketing trails to promote tourism and economic development. FBC supports the work as facilitator and administrator.

Ecosystem Restoration – Wildfire suppression and a lack of prescribed fires has negatively impacted many BC ecosystems. The effects are notable in the dry forests where fire suppression has contributed to the in-growth of trees in previously open forest and the encroachment of trees onto grasslands. Since 2014, FBC has been managing an ecosystem restoration project in the Cariboo-Chilcotin Region through the provincial Land Based Investment Strategy. The intent is to restore ingrown open forests and native grassland ecosystems to make them more resilient to climate change, to restore vital habitat, to mitigate wildfire risk and to support relationship-building between First Nations and non-First Nations communities in the context of land management.

Youth @FBC – The Fraser Basin Council's Youth Committee brings a new perspective to the work of the Council. A youth Director sits on the FBC board, and the Committee develops sustainability initiatives that engage youth and build their skills and capacity. Can the generations learn from each other? The FBC Youth Committee think so! The Committee often hosts events with inter-generational connections and mentorship opportunities. The Committee led a successful regional youth forum in the Shuswap in conjunction with the Together Shuswap workshop in June 2015 to strengthen networks and foster a conversation about the future. FBC thanks all our Youth Committee members and offers a special thanks to outgoing Youth Director Ruth Legg and Youth Committee Co-Chair Natalya Melnychuk, as their leadership made this work possible.



Left: Youth @Together Shuswap

Right: A trio of barn owlets peer curiously from the safety of their nesting box during a recent project to support owl populations in the Fraser Valley

Photo: Sofi Hindmarch



Left: A “Housing First” initiative was launched in Williams Lake to tackle homelessness

Top: Among the collaborative processes FBC facilitated was an assessment of options for a new heliport at the hospital in Fort St. John

Housing First – Housing First is a program with a top priority of helping people to move quickly from the streets or homeless shelters into their own dwellings. The program embraces the concept that the primary need of homeless people is to obtain stable, safe housing as a foundation for managing personal issues, including complex issues such as mental health problems or addictions. A Williams Lake program is underway, with federal funding, and FBC is providing administrative support.

Heliport for Fort St. John Hospital – The Northern Health Authority and BC Ambulance Service asked FBC to lead discussions on implementation options for a new heliport at the Fort St. John Hospital. Currently, patients who need immediate transportation from a remote location have to be taken first to the airport, then transferred by ambulance to the hospital or by plane to another hospital for advanced care. FBC had previously facilitated a 2013 review of various options for better transport and concluded that a hospital heliport was feasible, provided certain conditions could be met. The new report will be completed in the fall of 2016.

Paramedic Services in Northeastern BC – The Fraser Basin Council is working with Northern Health Authority, BC Emergency Health Service (BCEHS) and International SOS Corp Medical on the development of a strategic framework for the recruitment, training and retention of paramedics in Northeastern BC. Shell Canada is financing this project through its Community Investment Program.

ECHO Program on the South Coast – The Port of Vancouver is leading the ECHO program, which is a collaborative initiative to address impacts of commercial vessels on the endangered southern resident killer whales in the Strait of Georgia. FBC facilitates multi-interest and technical advisory groups.

North Cariboo Metis Association and RCMP Victim Services – A “Healthy Relationships” workshop series, with support of social workers, was rolled out in the Cariboo-Chilcotin to help educate families on the effects of trauma on relationships. FBC’s Cariboo-Chilcotin staff are helping to coordinate referrals and administer the work.

C2C Forum for Northeastern BC – In November 2015, FBC’s Executive Director facilitated a Community-to-Community Forum for Fort Nelson First Nation and the Northern Rockies Regional Municipality. Participants adopted a draft set of principles to guide future work of the communities. Dialogue has centred on improving the delivery of medical services in the Northern Rockies region.





FBC Board of Directors with FBC staff and special guests at the June 2015 board meeting

Our People

DIRECTORS AS OF MARCH 2016

Colin Hansen

Chair, Fraser Basin Council

Dannielle Alan

Director, Fraser-Fort George Regional District, McBride

Satwinder Bains

Director, Centre for Indo-Canadian Studies, University of the Fraser Valley

Chief Ian Campbell

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Larry Casper

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Gerry Salembier

Assistant Deputy Minister, Western Economic Diversification, Vancouver

Wes Shoemaker

Deputy Minister, Ministry of Environment, Victoria

Yvonne Smith

Executive Director, Northern Shuswap Tribal Council

Barb Strachan

Citizen & Resident, Fraser Valley Region, Mission

Craig Sutherland

Assistant Deputy Minister, Ministry of Forests, Lands and Natural Resource Operations

Rene Talbot

Director, Columbia Shuswap Regional District, Falkland

Terry Teegee

Tribal Chief, Carrier-Sekani Tribal Council, Prince George

Howie Wright

Representative, Okanagan Nation Alliance, Westbank

bringing people together

SENIOR MANAGEMENT TEAM AS OF MARCH 2016

David Marshall
Executive Director

Steve Litke
Senior Program Manager, Watersheds and
Water Resources & Sustainability Indicators

Bob Purdy
Director, External Relations & Corporate
Development

Terry Robert
Senior Regional Manager, Upper Fraser

Adriana Ruso
Chief Financial Officer

Mike Simpson
Senior Regional Manager, Thompson

Jim Vanderwal
Senior Program Manager, Climate Change
& Air Quality



*Fraser River Park clean-up day for FBC's Vancouver office staff
and other members of the community*



Working in the Fraser Basin and throughout British Columbia

CONNECT WITH US

Our staff work out of five regional offices in the Fraser Basin and two other locations in British Columbia: in Vancouver, Abbotsford, Kamloops, Vernon, Williams Lake, Quesnel and Prince George.

- Vancouver
- Abbotsford
- Kamloops
- Vernon
- Williams Lake
- Quesnel
- Prince George



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