A Plan for Burnaby's Green Future

Burnaby Environmental Sustainability Strategy

City of Burnaby

Adopted by Council
2016 November 7

Public Consultation and Developing the Draft Vision

This graphic shows the ideas reviewed, generated and considered at the third meeting of the ESS Steering Committee. The highlights of the Phase 1 Public Consultation, *"Issues and Priorities"*, (shown on the left) and some of the early ideas on the draft vision statement for the Burnaby Environmental Sustainability Strategy (shown on the right).

CLOSED-LOOP WATER & ENERGY SYSTEMS

The power of integrated design to shape towns & cities of the future

ROMANESQUE MODEL

IT MODEL
ELF-SUSTAINING!
We have a CHOICE
We need a BLUE solution
History of the world is written in WATER

WASTE WASTE

An unsustainable system makes WASTE

Cultural SHIFT NEEDED

CLOSED LOOP SYSTEM

Regeneration Decay Nutrients

INTEGRATED DESIGN

Puts energy back into system

and, by the way, PROFITABLE!

Education is KEY!

- TRAIN NEXT GEN
- 21ST CENTURY DESIGN: "The campus is the curriculum"

Will the new generation repeat what we did in the 20th century? OR BUILD WHAT WE NEED IN THE 21ST CENTURY?

Y+
AL
climate
FICIENCY
SPACE
REAM
ORK
ABITAT
LIVABLE
ITABLE!

CAN BURNABY BE A CATALYST FOR NORTH AMERICA?

SUGGESTED VISION:

ALL NEW DEVELOPMENT WILL PROTECT, or REGENERATE WATER-SHED & COMMUNITY HEALTH

- CLIMATE IMPLICATIONS OF WATER MGMT?
- MOST PROMISING ADAPTIVE/MITIGATIVE PRACTICES?
- UNEXPLORED QUESTIONS/DATA?
- POLICY CHANGES NEEDED?
- HURDLES to OVERCOME?

Dockside Green, Victoria

- REGENERATIVE, ADAPTIVE DESIGN
- WATER-EVERYWHERE!
- ONSITE SEWAGE UNIT
- WILDLIFE RETURNING: HERON, FISH, RIVER OTTER

ECOLOGY= subversive science

SMALL, SIMPLE PROJECT CAN HAVE FAR-REACHING INFLUENCE

BALANCE DEVELOPMENT ON ECOLOGICAL STABILITY!

GRAPHIC RECORDING: AVRIL ORLOFF · avrilorloff.com · JUNE 18, 2013 ·

ESS Steering Committee members *enjoying the pre-meeting tour of the green features at the Electronic Arts campus, ESS Steering Committtee Meeting No. 2 (2013 March).*

Acknowledgements

Thousands of people have contributed to the creation of the Burnaby Environmental Sustainability Strategy (ESS).

Mayor Derek Corrigan, Chair of the ESS Steering Committee, and members of Council who served as Steering Committee members, Councillor Dan Johnston (Vice-Chair), Councillor Richard Chang, Councillor Sav Dhaliwal, and Councillor Colleen Jordan, sincerely thank the following members of the community for volunteering their valuable time, energy and ideas:

20 Steering Committee Members

Chair **Derek Corrigan**, *Mayor, City of Burnaby*
Vice-Chair **Dan Johnston**, *Councillor, City of Burnaby*
Richard Chang, *Councillor, City of Burnaby*
Sav Dhaliwal, *Councillor, City of Burnaby*
Colleen Jordan, *Councillor, City of Burnaby*
Mark Angelo, *Chair emeritus of the Rivers Institute at the British Columbia Institute of Technology (BCIT)*
Frank Bassett, *Senior Director of Facilities, Real Estate, and Corporate Services, Electronic Arts*
Paul Cipywnyk, *Owner and editor of Cipko Consulting Ltd and citizen rep on the City of Burnaby Environment Committee*
Chris Dikeakos, *Founder and Managing Principal at Chris Dikeakos Architects Inc.*
Diane Gillis, *President of the Kingsway Imperial Neighbourhood Association (KINA)*
Jack Gin, Engineer, *inventor, entrepreneur, mentor, philanthropist and speaker*
Linda Huang, *Brand Director, Mother Goose USA*
Paul Holden, *President & CEO, Burnaby Board of Trade*
Isabel Kolic, *Executive Director, Heights Merchants Association BIA*
Dick Kouwenhoven, *President & CEO, Hemlock Printers*
Jennie Moore, *Director of Sustainable Development and Environmental Stewardship, British Columbia Institute of Technology*
Dirk Odenwald, *CFO, ABC Recycling*
Harman Pandher, *School Trustee, Burnaby School District 41*
Bill Schwartz, *Principal of Polestar Communications Inc.*
Dave Switzer, *Businessman and Director, Heights Merchants Association BIA*

Biographies *for the ESS Subcommittee members can be found at www.burnaby.ca/ess-sc.*
Terms of Reference *for the Steering Committee can be found at www.burnaby.ca/ess-sc-tor.*

2,500+ Members of the public
100+ Sub-Committee Members*
23 Inter-Agency Roundtable Participants*
22 Community Engagement Volunteers*
10 Youth Video Contest Submissions*
80 City Staff Workshop Participants*
Members of the Project Team*
Other Organizations*
Supporting Consultants*
Presenters*

*Listed in **Appendix A**.

Deer Lake/Metrotown (2015 May)

Dear Citizens of Burnaby,

As the ESS Steering Committee Chair, I'm proud to introduce you to Burnaby's Environmental Sustainability Strategy (ESS). The ESS will build on Burnaby's strengths, and complement the existing Economic Development Strategy and Social Sustainability Strategy, with a legacy that will help to guide future decisions for many years to come.

Burnaby has a long history of environmental leadership. In the 1940s Burnaby started to protect large areas of park and open space, now covering over 25% of the city. In the 1980s Burnaby's leaders planned an urban structure of four town centres. They created an 'open watercourse policy' to preserve streams in the city. These early actions literally altered the landscape of the city, creating a network of blue and green spaces for nature and recreation, and higher density communities linked by public transit. This demonstrates the power of good planning. The ESS aims to be a policy with this kind of far reaching vision and result.

Today as a society we face many complex challenges and in many cases it is cities that are leading the way to solutions. In the context of a changing climate – not just the atmosphere, but also the social and economic climate – we need to take pragmatic steps to improve the resilience of our city, to regenerate the health of our environment and our community. Building on our strong foundation, Burnaby is the ideal place to demonstrate to the world that we can do this while also continuing to prosper economically. This is what the ESS is all about – transforming challenges into opportunities.

Burnaby's other great asset is its people, who come from many cultures and backgrounds. In the ESS, we carried out the City's most extensive public engagement effort to date. It was a grassroots approach - we let the community tell us what is important. And we listened to thousands of ideas and comments in response. This ESS framework compares favorably with other professionally led approaches, and more importantly it's been validated with the support of our citizens. This creates a solid foundation for action.

The ESS can't anticipate all the possible answers to the challenges we face, but I'm confident it will move us in a direction to inspire creative solutions. The ESS is a plan, but making the vision come alive will depend on all of us working together. We are part of our environment and by working with nature, together, we can make our city even more beautiful, prosperous, livable and resilient.

So I invite each person reading this to also take up the challenge to be a leader – whether in your household, school, business or social network – and help us to show the world how a 'green' city flourishes and supports the health, well-being and prosperity of its people.

Mayor Derek Corrigan (2015 January)

Heron, Beaver Creek (Deer Lake), 2008

Table of Contents

Aerial view of Burnaby, the Burrard Inlet and northshore mountains (2012). photo credit: Marcus Mitanis

1. What is the ESS?

The ESS is a plan for Burnaby's "green" future. It will help to define how the city can evolve and build on its strengths to become an even more vibrant, resilient and sustainable community, integrated with healthy ecosystems.

It will build on past successes and integrate Environmental, Social and Economic sustainability to deliver many benefits to the community. As shown in **Figure 1** (below), the three City stategies are closely interrelated and together will guide Burnaby's future toward a healthy and sustainable City.

How Will the ESS be Used?

The ESS challenges all of us to take action – the City, our partner agencies, other levels of government, businesses, community organizations and individual citizens. The ESS is intended to provide a clear but flexible **framework (Section 6)** to guide future decisions, as a foundation on which to develop more detailed policies and programs in the future. This flexibility will ensure the overall intent of the goals and strategies can continue to be met even as opportunities, technologies and approaches evolve.

The ESS includes strategies where the City will take a lead role, as well as strategies that will require leadership from other agencies and levels of government, with the City playing a role of advocacy and support. To keep the language of the framework clear and simple, these roles are not identified in the strategy, but as the ESS is put into action these roles and other details necessary for work-planning will be clarified.

Once adopted by Council, the ESS will be referred to by staff across the organization, in the development of new policies and programs, or as a basis for advocacy, and will inform the focus and priorities of other strategic plans and policies the City undertakes in the future, such as updates to the Official Community Plan, Transportation Plan and neighbourhood community plans, as well as new or updated bylaws.

More details about how the ESS will be carried out can be found in "Next Steps" (**Section 7**), near the end of this report.

Figure 1: *Three sustainability strategies; one sustainable City.*

Figure 2: The ESS Process

Phase 1 – Issues and Priorities
Jan. to July 2013

Broad, high-level

Issues, opportunities, vision

- Steering Committee convened: focus on guiding principles, draft theme areas.
- Phase 1 Public Consultation: online questionnaire (~**400** responses), display boards, attendance at seven public events, Environmental Superheroes, Vision Tree, and Community Green Map.

Outcomes:
- Draft vision statement; confirmed scope (theme areas) and draft goals.

Phase 2 – Exploring Further
July 2013 to Jan. 2015

Deeper, more focused

Goals, strategies, actions

- Sub-Committees (**4**) convened: focus on draft goals, strategies. **10** meetings held with over **100** people in total; networking by Sub-Committee members engaged another **550** people.
- Inter-Agency Roundtable, with representatives from neighbouring municipalities and other levels of government and other organizations.
- Phase 2 Public Consultation: online questionnaire (~**800** responses), display boards, attendance at 15 public events, three invited presentations, public workshop, Community Green Map, youth video contest, and **150** others engaged via workshops and invited presentations using "Sustain-A-Bucks".

Outcomes:
- Feedback on draft vision, goals, strategies; suggestions for actions - by the City and by individuals; analysis of responses.

Phase 3 – Draft ESS
Jan. 2015 to Jun. 2016

Broad, high-level

Framework, priorities

- Draft ESS report containing a framework (vision, goals, strategies, suggested actions) released to the community to check and see if it was "headed in the right direction".
- Phase 3 Public Awareness: over **4,600** people were made aware of the release of the Draft ESS by conversations, presentations, email updates, project website, and social media.
- Phase 3 Phase 3 Public Consultation: engaged over **450** people using online questionnaire (**~300** responses), acivities, webinar, Plinko ESS trivia, flash-survey, display boards, attendance at 13 public events including an ESS community stakeholder workshop, and an ESS public drop-in open house.

Outcomes:
- Confirmation of level of support for Draft ESS; input on how to improve the Final ESS.

2. How Was the ESS Created?

Led by the Mayor's ESS Steering Committee, the ESS process is one of the largest and most creative public consultation programs the City has ever undertaken. A summary of the ESS process phases and timeline are summarized in **Figure 2** (left), and in **Appendix B.**

Over 2,500 people have participated in the ESS process and helped to shape the ESS framework.

> ***"… great session…lots of great ideas."***
> *- ESS Sub-Committee participant*

Suggestions received through this process, from questionnaires and workshops, were used as the primary basis to develop the draft ESS framework shown in **Section 6.**

The draft ESS framework was compared to other leading city scale sustainability frameworks. The results of this Gap Analysis indicate that the ESS, supported by the Community Energy and Emissions Plan (CEEP) and Economic and Social strategies, provides a comprehensive framework covering all key areas. This shows that the community-based ESS process produced a comprehensive plan.

Members of the public completing the Phase 2 *"My Green Goals"* questionnaire on an iPad at the Environment Festival (2014 May).

10 Sub-Committee Meetings

38 Public Events

1,500+ Questionnaire Responses

2,500+ People Engaged

8,000+ Ideas Collected

Tommy Douglas Library, a City of Burnaby green building with natural daylighting, geothermal heating, green roofs, water recycling and more (2011 May).

3. Community Energy and Emissions Plan (CEEP)

Under the leadership of Burnaby Council, the City took advantage of a unique opportunity to develop a Community Energy and Emissions Plan (CEEP) in support of the ESS process as shown in **Figure 3** (below). The CEEP will be a more detailed plan focused on reducing community greenhouse gas (GHG) emissions and energy use. Although the CEEP is being developed through a parallel process to the ESS, its draft recommendations were integrated into the ESS to address climate change and to complement other goals for community health and livability.

Figure 3: *The CEEP supports the ESS*

Progress Made and Challenges Ahead

Burnaby has already made great progress in wise energy use and emissions management, like using compact land uses around SkyTrain stations. However, the City also faces several challenges in reducing total community emissions over time, which require careful consideration:

- Significant population growth (120,000 more people by 2041).
- Limited control of several key levers for energy and emissions reductions, such as improving transit service and vehicle efficiency standards.
- Limited local government resources, both human and financial.

The CEEP Process

The CEEP process evaluated energy, emissions and costs using the Climate Action Navigator (CAN) tool. Proposed strategies and targets were considered by staff, community stakeholders, industry experts, and the ESS Steering Committee in workshops. City objectives were determined by assessing jurisdiction: who can do what. The City also considered Burnaby's ability to implement and deliver, resulting in an achievable target with feasible objectives and actions.

The CEEP

Burnaby's **Community Energy and Emissions Plan (CEEP)** is a plan to reduce the community's overall energy use and greenhouse gas (GHG) emissions, in order to address climate change, improve local air quality, save money, and improve health and community livability.

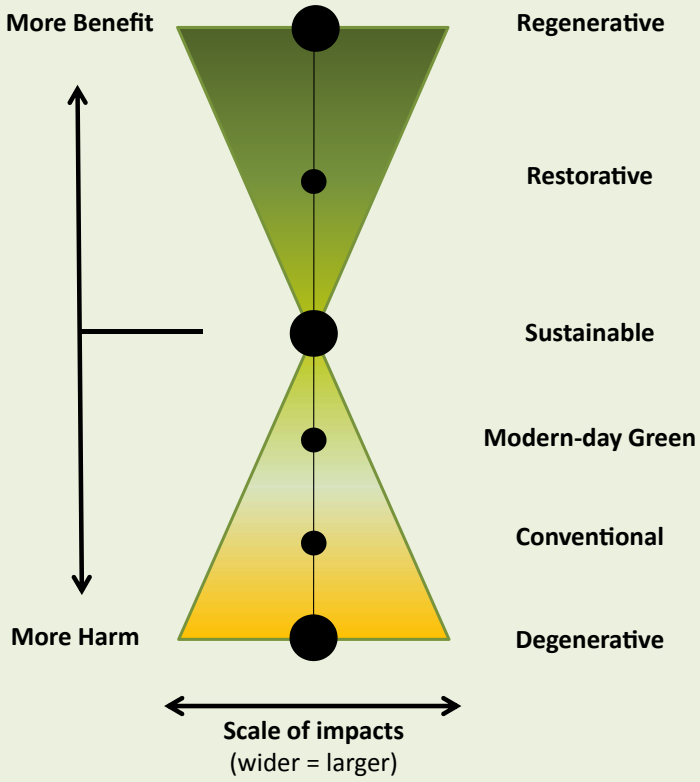
The CEEP:

- supports many of the goals of the Environmental Sustainability Strategy (ESS) as well as the goals of Economic Development Strategy and the Social Sustainability Strategy;
- includes targets for GHG reduction along with goals, strategies and actions;
- is a deliverable of the ESS **Breathe** goal; and
- shares and supports five other ESS goals - **Live, Build, Move, Conserve** and **Manage.**

For more information on the CEEP, please see www.burnaby.ca/ess-report-E.

Burnaby's new street standards for town centres contribute to Burnaby being a modern-day green city by providing mobility for all, street trees/habitat, rain-gardens, and social spaces (2015 September). See page 59 for more information.

Figure 4:
Moving from Modern-Day Green to Sustainable and Beyond



Examples

Integrated 'complete' community **Regenerative** buildings **Fully-functioning ecosystem**	
Net positive buildings **Restored ecosystem**	
"Net-Zero" buildings **Healthy ecosystem**	
Green buildings **Protected ecosystem**	
Standard buildings **Stressed ecosystems**	
Harmful buildings **Non-functioning ecosystem**	

4. The Journey Toward A Regenerative City

Burnaby Today - A Modern-Day Green City

Burnaby is now home to 225,000 people. Burnaby's urban areas are interwoven with forests, streams, lakes and wetlands that connect to the Salish Sea[1] with Burrard Inlet to the north and the Fraser River to the south. Protecting and enhancing ecosystems has been a priority of Burnaby's leaders for many decades. Today, Burnaby is also a leader in areas such as 'smart' urban land use planning and in programs like recycling and food scraps (read more in **Box 1**, below).

Box 1. *Examples of Burnaby's Environmental Leadership*

- An **open watercourse policy** created over 40 years ago that helped protect over 90 streams.
- An **urban structure** of higher density town centres, established over 30 years ago, creating a foundation for walkable neighbourhoods linked with transit.
- Protected **greenspace** cover 25% of the city, totaling 2,400 hectares (6,000 acres) – that's six times the size of Stanley Park.
- Regionally leading **recycling** and **food scraps** collection programs.
- **Complete communities** like UniverCity at SFU on Burnaby Mountain, which includes preserving ecosystems, leading rainwater management practices and green buildings requirements.
- Many **green buildings** including homes, offices, schools and city buildings.
- A **network of urban trails** for walking and cycling, including the Central Valley Greenway.
- Progressive **new street standards** for Town Centres that include separated sidewalks, bike paths, street trees, rain gardens and public art/furniture.

For more information on Burnaby's environmental achievements, please see **Appendix C**. There are also 10 inspiring stories that highlight Burnaby as a modern-day green city in **Appendix D.**

Burnaby Tomorrow

In order to plan for a growing urban population, and challenges facing urban areas across the world, leadership is needed to demonstrate ways to work together and to work with nature, and to continue to work toward a greener vision of Burnaby's future.

We Are the Environment

The ESS reflects a shift in how we think about the environment. In the past, people were often seen to be separate from the environment, people thought the environment was able to absorb all of our wastes and impacts, and thought that reducing impacts was good enough - like producing less waste, or making our products less toxic. These are important steps, but we are now beginning to recognize that people have become the dominant force on the planet, changing the earth's natural processes on a global scale, and that all forms of life, even ours, depend on healthy ecosystems. We need to do better than being "less bad", and actually do things that benefit the environment. The good news is that natural ecosystems provide a great model for doing just that. In nature there is no such thing as waste - everything is recycled!

This shift from doing less harm to having a positive impact involves **designing with nature** to regenerate ecosystem and community health as shown in **Figure 4** (left). This includes:

- Recognizing that **ecosystems perform many valuable services** for us, like providing clean water for drinking, purifying the air, pollinating food crops, and providing places for recreation.
- **Restoring and regenerating ecosystems** in cities, for example 'daylighting' buried streams and helping to bring back salmon to urban creeks.
- Using **green infrastructure** like constructed wetlands and trees to manage stormwater, instead of just relying on hard infrastructure like pipes.
- **Mimicking how nature works**, in the design of a city, a neighbourhood, a business, a building or a product. For example, the Living Building Challenge aims for a building to produce its own energy and treat its own waste.

Regenerating healthy ecosystems also makes our community more beautiful, healthy and resilient to stresses such as extreme weather. These concepts are reflected in the "Guiding Principles" (**Section 5**), and the ESS vision contained within "ESS Framework" (**Section 6**).

For more information on green concepts, please see **Appendix E.**

[1] The Salish Sea, one of the world's largest and most biologically diverse inland seas, includes the Georgia Straight, Puget Sound, Howe Sound, and Juan de Fuca Straight and is home to hundreds of species of marine wildlife and 64 species at risk, including resident orcas.

Deer Lake Brook at Burnaby Village Museum (2014 May).

5. Guiding Principles

Early in the ESS process, the Steering Committee drafted a set of guiding principles to help communicate the City's values and to ensure a consistent approach was used in developing and implementing the ESS. These guiding principles are presented here as they represent the 'spirit' of the ESS.

The Draft Guiding Principles are also intended to:

- be clear, concise, simple and action-oriented;
- apply to all actions;
- be separate from, and broader than, strategies, actions and other policy direction(s); and
- help guide the project through to completion.

The guiding principles may also help to influence and direct future decision-making should challenges and opportunities arise that may not be addressed within the details of the ESS.

Ecosystem Health

1. *We recognize that we need healthy ecosystems for our survival, health and well-being, and that species and ecosystems also have intrinsic value (in their own right).*
2. *We aim to "live off the interest" to ensure continued ecosystem health and resilience.*
3. *We undertake and encourage ecosystem based management, protect the health of existing ecosystems, and actively enhance and restore degraded ecosystems.*

Integration of Systems

4. *We recognize that economic vitality, environmental health, social equity and human health are all interrelated and mutually dependent.*
5. *We seek synergies rather than trade-offs, and strive for solutions with multiple benefits.*

Connections

6. *We acknowledge that local actions can have far-reaching impacts.*
7. *We recognize that the well-being of our community is linked with the (ecological, social and economic) well-being of the region, the province, the nation and the world.*

Wise Use of Resources

8. *We proactively manage our resources by seeking creative solutions and prioritizing actions that create holistic and long term value for our community (ecological, social and economic).*

The Long View

9. *We make decisions and act today with the long-term resilience of our community and ecosystems in mind, and prepare ourselves for changes to come.*
10. *We recognize our responsibility for the well-being of future generations.*

Leadership

11. *We lead by example, learn from others, and foster leadership by community stakeholders.*
12. *We work to encourage and reward positive behaviour.*

Collaboration

13. *We work together to achieve our shared goals, across City departments, business sectors, public interests, institutional programs, neighbouring municipalities and other levels of government.*

Engagement

14. *We build trust by fostering internal and external relationships, partnerships, and networks.*
15. *We engage in and support education, building community awareness, responsibility and participation.*
16. *We employ and promote diverse methods of community engagement.*

Evaluation and Improvement

17. *We commit to continual improvement through adaptive management and building on the success of others.*
18. *We monitor and evaluate our performance toward our goals with targets and indicators, and adjust our approach accordingly.*
19. *We clearly communicate our performance to stakeholders and the public.*

For more information on some of the terms and concepts used in the guiding principles, please see ***Appendix F.***

Figure 5: *ESS Framework*

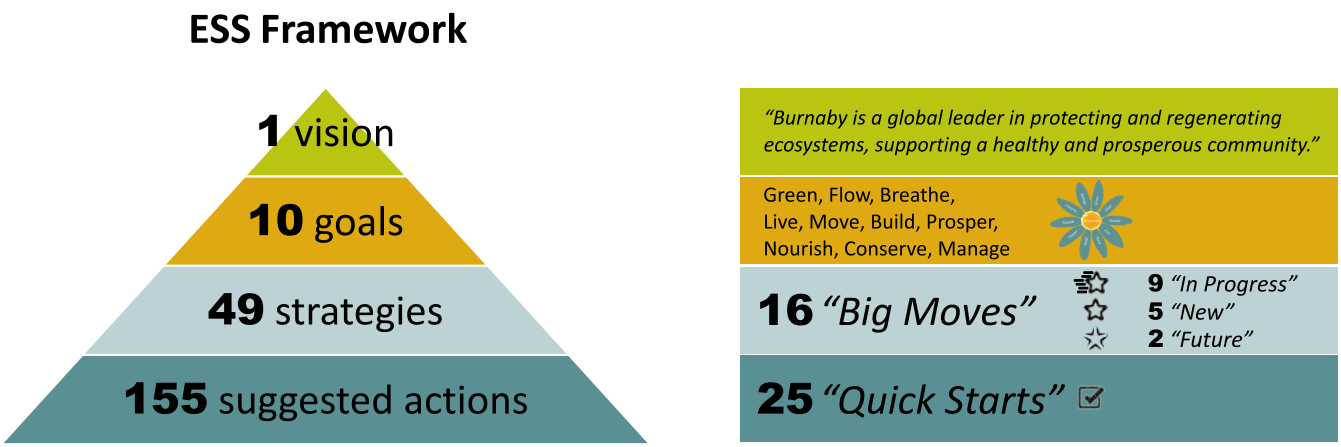
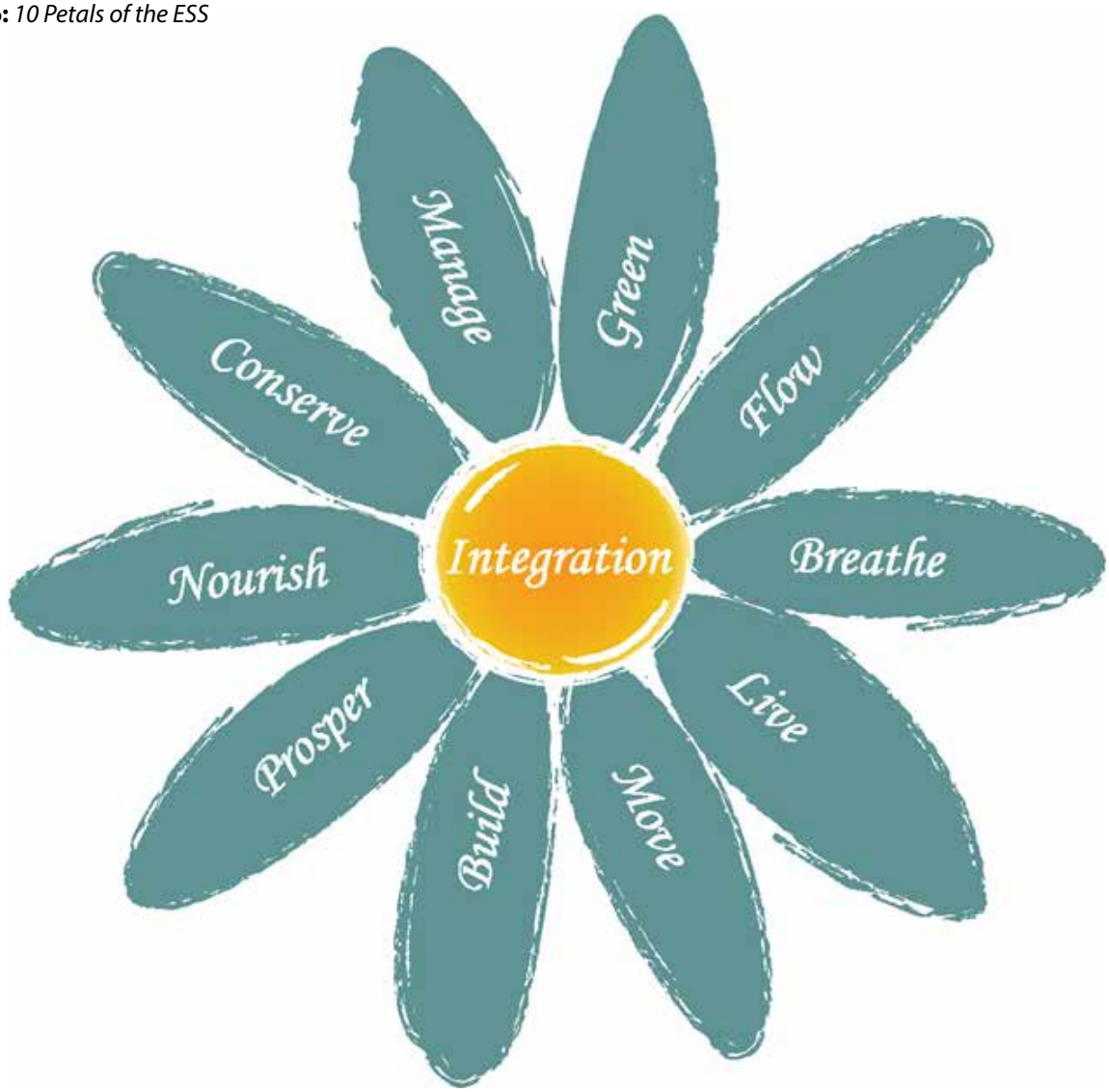


Figure 6: *10 Petals of the ESS*



6. The ESS Framework

The ESS framework is intended to provide clear direction to staff and the public about areas that have emerged, through the ESS process, that are priorities for City action.

The ESS framework is based on the input received from the Steering Committee, sub-committees, stakeholders, the public and staff during the Phase 2 and Phase 3 public consultation.

Four Layers

The ESS framework has four layers, as shown in **Figure 5** (left), with each level being supported by more detail in the level below. Moving from the highest level to the most detailed level: there is one vision, 10 goals, 49 strategies and 155 suggested actions.

Vision

The purpose of the **vision** is to express a common direction for the City's environmental future to help align decisions and actions so that the community can collectively move toward this shared vision.

> *"Burnaby is a global leader in protecting and regenerating ecosystems, supporting a healthy and prosperous community."*

The narrative version of the vision is included in **Box 2** (right).

Goals

10 goals support the vision for the ESS, one for each of the **10 themes**, which are represented as petals of a flower as shown in **Figure 6** (left). The goal for each theme is stated at the top of each theme section, on pages 15-33.

- **Green** – Green Space and Habitat
- **Flow** – Water Management
- **Breathe** – Climate and Air Quality
- **Live** – Land Use Planning and Development
- **Move** – Transportation
- **Build** – Green Buildings and Energy
- **Prosper** – Green and Inclusive Economy
- **Nourish** – Food Systems
- **Conserve** – Waste Management
- **Manage** – Governance, Education and Partnerships

Box 2. *Imagine Burnaby in 2065 – an ESS narrative vision.*

The following 'narrative' vision for the ESS was developed based on input by the public and the Steering Committee in Phase 1 when asked to imagine what Burnaby could look like in 2065.

*Burnaby's Town Centres and Urban Villages are vibrant and compact **"complete communities"**, with street-fronting shops and cafes, art galleries and theatres, and pedestrian-only streets buzzing with **activity** amid a lush landscape.*

*Efficient and convenient transit, and a network of **bike** routes, connect **walkable** neighbourhoods, making it much easier to get around without using a car. Streets are **quiet** and **safe**, and provide space for people to play and gather. Many residents **grow food**, and all have access to healthy, affordable and regionally produced food.*

*Despite the increase in population, access to nature is as easy as walking or cycling to one of the many neighbourhood **parks** or large **conservation areas**, or along the multi-use greenways, each teeming with **birds** and **wildlife**. Burnaby's many **waterways** have been restored and are alive with native fish, frogs, birds and other species.*

*So much depends on **community**, and on working and living together. People understand and care about how their actions affect each other, and environmental responsibilities are shared by citizens, businesses, and governments. **Eco-education** is a key focus in schools and universities.*

*Burnaby has helped to pioneer innovative, **clean** and **green** development practices, including buildings and energy systems of various scales . As a well-known premier **science** and **technology** centre, Burnaby attracts many businesses and industries that contribute to the **local** economy and export their expertise to other communities worldwide.*

*Virtually everything is **re-used** or **recycled** – "waste" is an outdated concept. Instead, cycles of energy, nutrients, carbon and water have been restored to mimic nature, helping to regenerate ecosystems, reduce emissions and provide economic value.*

Burnaby is a city that functions like a forest.

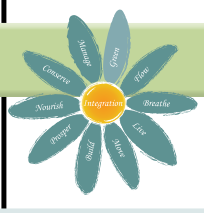
Figure 8: *How to read the 'ESS at-a-glance' summary pages.*

"Now" is where you can find information on the city today.

"Future" is where you can find the details of the ESS framework - the goal, strategies and actions. The *"Big Moves"* and *"Quick Starts"* for this goal are also shown here.

"What Can You Do?" suggests what the public can do to help - many of the ideas here were suggested by your neighbours during Phase 2.

Green - Green Space and Habitat



Now

Why it Matters:
- People, plants and wildlife all depend on healthy habitat.
- Green space makes our city more livable.
- Healthy forests and wetlands clean our air and water.

Now:
Burnaby is one of the greenest major cities in Canada. Green space is a big part of the city's identity.

Did you know?
- Burnaby has over 150 parks.
- Parks and conservation areas cover 25% of the city, totaling 2,400 hectares (6,000 acres) – that's six times the size of Stanley Park!
- Deer Lake alone is home to over 150 species of birds and mammals including deer, coyotes, beavers, otters, and voles.

A "Great" Place for Herons

One of the region's largest Great Blue Heron colonies is located in Deer Lake Park and hosts around 40-60 nests and over 100 birds. Each spring, beginning in March, the herons can be seen gliding nearby as they forage to refurbish their nests and hunt to feed their chicks. Each mating pair raises one or two chicks, which leave the nest by July or August. The existing colony has been active since 2008, beginning with just a few nests. This habitat is all the more important as Great Blue Herons are a species at risk and they are exposed to a lot of urban stresses throughout the region. You can help by ensuring dogs do not chase herons, and supporting protection of habitat like wetlands and shorelines.

+ Read more on page 56.

Future

Goal
Healthy and resilient ecosystems.

Control: High level of City control and influence.

City | Others

Strategies:

NEW Big Move

1.1 Review and consider new policies, plans and programs to protect, and enhance Burnaby's ecosystems.

Suggested Actions:
a) Explore opportunities to develop and implement an Ecosystem Health Strategy[1], including baseline study, identifying strategic opportunities, and ongoing monitoring.

Quick Start #1

Define scope/phasing and develop terms of reference for the Ecosystem Health Strategy, identify necessary resources and timeline.

b) Investigate developing specific policies and plans to support healthy ecosystems.

c) Consider programs and activities to protect, connect and enhance Burnaby's ecosystems.

1.2 Protect and enhance habitat on public and private lands.

Suggested Actions:
a) Consider opportunities to identify and legally protect additional key habitat areas (also see Green, Strategy 1.1).

b) Support and advocate for effective regulations and policies to protect ecosystems at all senior levels of government - regional, provincial, and federal.

c) Encourage and look for opportunities to include more native plants in landscaping on public and private lands.

Quick Start #2

Create a pollinator meadow pilot project on public land to test approaches for broader enhancement of habitat for pollinators and associated species, and public benefits.

d) Encourage homeowners to use native plants by providing printed and online information, workshops, seminars and other resources.

e) Consider developing a program and investigate funding sources to facilitate community-led habitat restoration.

f) Continue to implement existing regulations and policies for tree protection on private and publics lands, and consider future policies for urban forest management.

1.3 Connect existing high value habitat with habitat corridors.

Suggested Actions:
a) Consider planting more native vegetation on public and private land, including areas next to existing and new cycling and walking trails, and along designated habitat corridors.

b) Investigate developing a strategic habitat corridor plan and design standards (also see Green, Strategy 1.1).

1.4 Encourage development and behaviour that respects and reduces the impact to our ecosystems and wildlife.

Suggested Actions:
a) Consider developing 'dark sky' (light pollution reduction) policies and programs as a way to reduce unnecessary night-time lighting that can disturb wildlife, reduce night sky viewing and disturb neighbours.

b) Explore policy approaches to protect birds from harm due to human-related activities, like predation by cats and collisions with buildings.

c) Consider approaches to prioritize and require removal of private encroachments in streamside protection and enhancement areas.

Quick Start #3

Undertake preliminary study (and mapping) to assess issue, recommend option(s) to protect streamside protection and enhancement areas.

1.5 Promote the value of ecosystems to human well-being.

Suggested Actions:
a) Consider further promoting educational tours, wildlife watching and nature photography by building on those events offered during Environment Week.

b) Explore ways to communicate the significant financial benefits that natural systems provide to people.

c) Continue to recognize the value ecosystems contribute as infrastructure in City planning, management and decision making.

1.6 Reduce the environmental and economic impacts of invasive species.

Suggested Actions:
a) Consider opportunities to expand current efforts to inform City staff and the public about the impacts of invasive species, and how to prevent and control their spread.

b) Investigate developing an invasive species action plan to strategically eradicate, control and manage invasive species (also see Green, Strategy 1.1).

c) Consider creating new policies, regulations and incentives to help better prevent, remove and control invasive species on public and private lands.

Quick Start #4

Work with Metro Vancouver to support creating regional solutions for disposal of invasive plants and soil.

d) Encourage and develop approaches to stop the sale of invasive plants and animals, in places such as nurseries, pet stores and live-food markets.

1.7 Ensure Species and Ecosystems at Risk (SEAR) are considered in planning, development and habitat enhancement, on public and private lands.

Suggested Actions:
a) Investigate opportunities to monitor, map and develop management plans, and apply best management practices for protecting species and ecosystems at risk, including for City works and infrastructure, development approvals and habitat enhancement.

b) Consider partnering with universities, other levels of government and community groups on research and enhancement programs for species and ecosystems at risk in Burnaby (also see Green, Strategy 1.1).

[1]An Ecosystem Health Strategy is envisioned as a city-wide strategic plan to assess, protect and improve ecosystem health. It would build on and update the City's existing environmentally sensitive area (ESA) strategies. Potential components may include baseline assessment and mapping, and recommendations for policies and programs focusing on topics such as defining habitat corridors (locations and design), strategic stream/riparian enhancement, invasive species management, urban forest planning & management, consideration for species at risk, and ecosystem services valuation.

= Big Moves IN PROGRESS = Big NEW Moves = FUTURE Big Moves = Quick Starts

What Can You Do?

Improve Habitat
- Plant a butterfly or bee garden.
- Prevent and remove invasive plants.
- Use native plants in your gardens.
- Install a birdhouse, mason bee 'condo' or bat box outside.
- Avoid using pesticides and herbicides.
- Use less outdoor lighting and make sure it shines downward.

Get Involved
- Explore local parks, streams and beaches.
- Learn about local plants and animals.
- Support environmental non-profit organizations that promote action.
- Join an environmental stewardship group like Streamkeepers.

Encourage Others to Take Action
- Share information with friends, family or coworkers.
- Organize a 'nature' school field trip.
- Host a workshop at work or school.
- Write a nature article or blog.

Want ***more info*** on how to ***get started***?
Please go to **www.burnaby.ca/ess+you**

Read some of the inspiring stories about Burnaby today.

Visit www.burnaby.ca/ess+you to get more info on how to get started!

Strategies and "Big Moves"

Each of the goals is supported by a number of **strategies**, 49 in all. 16 of the Strategies have been identified as **"Big Moves".** "Big Moves" represent a significant opportunity, a key strategy necessary to achieve a goal, and/or received strong sub-committee/public support. "Big Moves" may also require further policy approval by Council and/or additional resources due to the scope of the proposed strategy. Three types of "Big Moves" have been identified:

- **In Progress** (9 strategies) – "Big Moves" that acknowledge and build on what we are already doing; lend strength and focus to our existing efforts; link to work in progress; and help guide, shape and improve what we are doing now.
- **New** (5 strategies) – "Big Moves" that introduce new areas of work (policies, programs, other actions) and highlight these as priorities for Council's consideration. These would be approved-in-principle by Council with the adoption of the ESS.
- **Future** (2 strategies) – "Big Moves" that acknowledge anticipated future work (likely policy work); and lend strength and focus to future work.

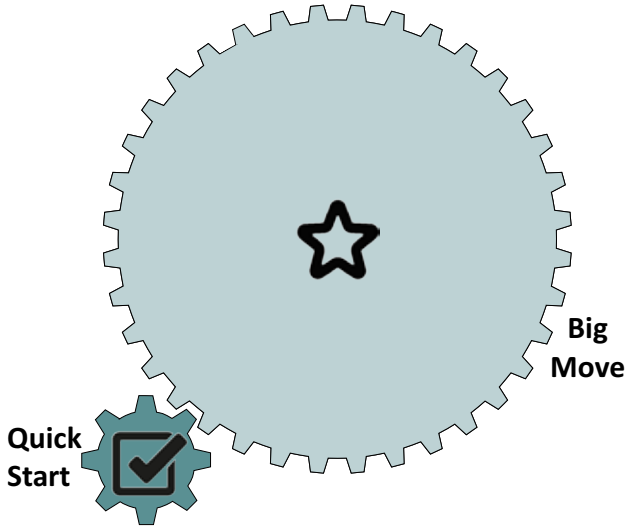
A summary list of the "Big Moves" is included as **Table 1** (at the end of this section on page 35).

The relationship between the ESS, SSS, and EDS goals and strategies is described in **Appendix G.**

Actions and "Quick Starts"

Each of the strategies is supported by a number of suggested actions, 155 in all. In addition to the 155 suggested actions, there are 25 "Quick Starts". For every "Big Move" there is a supporting "Quick Start" to get things moving, as shown in **Figure 7** (right). "Quick Starts" are City actions designed to take advantage of short term opportunities, build momentum and demonstrate commitment to the ESS.

Figure 7: *"Quick Starts" and "Big Moves"*



A list of the "Quick Starts" is included as **Table 2** (at the end of this section on page 36).

Gap Analysis

As mentioned in **Section 2** ("How Was the ESS Created?"), the Gap Analysis found the ESS Framework to be comprehensive when compared with three other leading community level sustainability frameworks as it has excellent coverage and no major gaps. To learn more about the gap analysis please go to www.burnaby.ca/ess-report-F.

How to Read the ESS Framework

Figure 8 (left) describes how to read the ESS framework contained within this section.

Green - Green Space and Habitat

Now

Why it Matters:

- People, plants and wildlife all depend on healthy habitat.
- Green space makes our city more livable.
- Healthy forests and wetlands clean our air and water.

Now:

Burnaby is one of the greenest major cities in Canada. Green space is a big part of the city's identity.

Did you know?

- Burnaby has over 150 parks.
- Parks and conservation areas cover 25% of the city, totaling 2,400 hectares (6,000 acres) – that's six times the size of Stanley Park!
- Deer Lake alone is home to over 150 species of birds and mammals including deer, coyotes, beavers, otters, and voles.

A "Great" Place for Herons

One of the region's largest Great Blue Heron colonies is located in Deer Lake Park and hosts around 40-60 nests and over 100 birds. Each spring, beginning in March, the herons can be seen gliding nearby as they forage to refurbish their nests and hunt to feed their chicks. Each mating pair raises one or two chicks, which leave the nest by July or August. The existing colony has been active since 2008, beginning with just a few nests. This habitat is all the more important as Great Blue Herons are a species at risk and they are exposed to a lot of urban stresses throughout the region. You can help by ensuring dogs do not chase herons, and supporting protection of habitat like wetlands and shorelines.

+ Read more on page 56.

Future

Goal

Healthy and resilient ecosystems.

Control: High level of City control and influence.

City	Others

Strategies:

NEW Big Move

1.1 Review and consider new policies, plans and programs to protect, and enhance Burnaby's ecosystems.

Suggested Actions:

a) Explore opportunities to develop and implement an Ecosystem Health Strategy[1], including baseline study, identifying strategic opportunities, and ongoing monitoring.

Quick Start #1

Define scope/phasing and develop terms of reference for the Ecosystem Health Strategy, identify necessary resources and timeline.

b) Investigate developing specific policies and plans to support healthy ecosystems.

c) Consider programs and activities to protect, connect and enhance Burnaby's ecosystems.

1.2 Protect and enhance habitat on public and private lands.

Suggested Actions:

a) Consider opportunities to identify and legally protect additional key habitat areas (also see Green, Strategy 1.1).

b) Support and advocate for effective regulations and policies to protect ecosystems at all senior levels of government - regional, provincial, and federal.

c) Encourage and look for opportunities to include more native plants in landscaping on public and private lands.

Quick Start #2

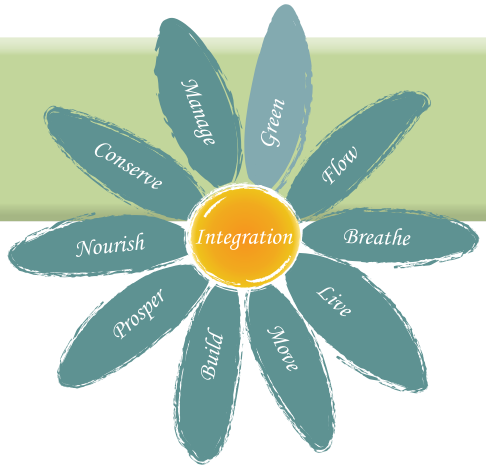
Create a pollinator meadow pilot project on public land to test approaches for broader enhancement of habitat for pollinators and associated species, and public benefits.

d) Encourage homeowners to use native plants by providing printed and online information, workshops, seminars and other resources.

e) Consider developing a program and investigate funding sources to facilitate community-led habitat restoration.

f) Continue to implement existing regulations and policies for tree protection on private and public lands, and consider future policies for urban forest management.

1.3 Connect existing high value habitat with habitat corridors.



Suggested Actions:

a) Consider planting more native vegetation on public and private land, including areas next to existing and new cycling and walking trails, and along designated habitat corridors.

b) Investigate developing a strategic habitat corridor plan and design standards (also see Green, Strategy 1.1).

1.4 Encourage development and behaviour that respects and reduces the impact to our ecosystems and wildlife.

Suggested Actions:

a) Consider developing 'dark sky' (light pollution reduction) policies and programs as a way to reduce unnecessary night-time lighting that can disturb wildlife, reduce night sky viewing and disturb neighbours.

b) Explore policy approaches to protect birds from harm due to human-related activities, like predation by cats and collisions with buildings.

c) Consider approaches to prioritize and require removal of private encroachments in streamside protection and enhancement areas.

Quick Start #3

Undertake preliminary study (and mapping) to assess issue, recommend option(s) to protect streamside protection and enhancement areas.

1.5 Promote the value of ecosystems to human well-being.

Suggested Actions:

a) Consider further promoting educational tours, wildlife watching and nature photography by building on those events offered during Environment Week.

b) Explore ways to communicate the significant financial benefits that natural systems provide to people.

c) Continue to recognize the value ecosystems contribute as infrastructure in City planning, management and decision making.

1.6 Reduce the environmental and economic impacts of invasive species.

Suggested Actions:

a) Consider opportunities to expand current efforts to inform City staff and the public about the impacts of invasive species, and how to prevent and control their spread.

b) Investigate developing an invasive species action plan to strategically eradicate, control and manage invasive species (also see Green, Strategy 1.1).

c) Consider creating new policies, regulations and incentives to help better prevent, remove and control invasive species on public and private lands.

Quick Start #4

Work with Metro Vancouver to support creating regional solutions for disposal of invasive plants and soil.

d) Encourage and develop approaches to stop the sale of invasive plants and animals, in places such as nurseries, pet stores and live-food markets.

1.7 Ensure Species and Ecosystems at Risk (SEAR) are considered in planning, development and habitat enhancement, on public and private lands.

Suggested Actions:

a) Investigate opportunities to monitor, map and develop management plans, and apply best management practices for protecting species and ecosystems at risk, including for City works and infrastructure, development approvals and habitat enhancement.

b) Consider partnering with universities, other levels of government and community groups on research and enhancement programs for species and ecosystems at risk in Burnaby (also see Green, Strategy 1.1).

[1]An Ecosystem Health Strategy is envisioned as a city-wide strategic plan to assess, protect and improve ecosystem health. It would build on and update the City's existing environmentally sensitive area (ESA) strategies. Potential components may include baseline assessment and mapping, and recommendations for policies and programs focusing on topics such as defining habitat corridors (locations and design), strategic stream/riparian enhancement, invasive species management, urban forest planning & management, consideration for species at risk, and ecosystem services valuation.

What Can You Do?

Improve Habitat

- Plant a butterfly or bee garden.
- Prevent and remove invasive plants.
- Use native plants in your gardens.
- Install a birdhouse, mason bee 'condo' or bat box outside.
- Avoid using pesticides and herbicides.
- Use less outdoor lighting and make sure it shines downward.

Get Involved

- Explore local parks, streams and beaches.
- Learn about local plants and animals.
- Support environmental non-profit organizations that promote action.
- Join an environmental stewardship group like Streamkeepers.

Encourage Others to Take Action

- Share information with friends, family or coworkers.
- Organize a 'nature' school field trip.
- Host a workshop at work or school.
- Write a nature article or blog.

Want ***more info*** on how to ***get started***?
Please go to **www.burnaby.ca/ess+you**

Flow - Water Management

Now

Why it Matters:

- Water is the basis for all life on earth.
- Rain water flows off buildings, land and roads into local streams, lakes, wetlands and the ocean.
- Reducing pollution on the land helps fish and other aquatic creatures.
- By using less water our communities can grow and prosper while avoiding the need for costly new water and sewer systems.

Now:

Burnaby has rich aquatic ecosystems that include streams, wetlands, lakes and ocean coastline.

Did you know?

- Burnaby has over 90 streams in three major watersheds - Burrard Inlet, Brunette Basin (Central Valley) and Fraser River.
- Burnaby has protected most open natural streams instead of piping them underground.

Salmon in the City

Burnaby has over 90 unique streams and two lakes, part of three major watersheds (land basins draining to a common point) - the Brunette River, the Fraser River, and the Burrard Inlet. Thanks to long-term efforts by the community working together, in the fall of 2013 salmon returned to spawn in some streams for the first time in living memory. In tiny Buckingham Creek at Deer Lake, more than a dozen chum salmon were seen spawning. Salmon are now able to swim from the Fraser River via the Brunette River and all the way up Still Creek as far as Rupert Street in Vancouver to spawn.

17 + *Read more on page 56.*

Future

Goal

Healthy and resilient watersheds.

Control: High level of City control and influence.

City	Others

Strategies:

Big Move IN PROGRESS

2.1 Manage rainwater to restore and mimic natural flows and quality.

Suggested Actions:

a) Investigate ways to update and improve the City's existing rainwater management policies and regulations.

Quick Start #5

Review existing regulations for opportunities to reduce barriers to on-site rainwater management such as residential rain-gardens.

b) Encourage and promote on-site rainwater management by developing guides, education resources and exploring the role of incentives.

c) Look for opportunities to reduce the volume and clean the water flowing off roofs, roads and paved areas directly into storm sewers by using systems like rain gardens and permeable pavement.

d) Investigate ways to lead by example with City projects.

e) Consider developing a program to encourage residential rain-gardens.

2.2 Protect, restore and improve aquatic ecosystems like ponds, lakes, streams, wetlands and marine areas.

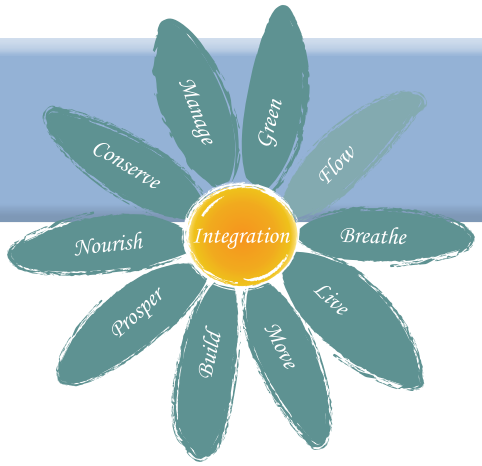
Suggested Actions:

a) Look for ways to build on the City's current policies, existing information and previous projects to assess, prioritize and consider opportunities to strategically restore Burnaby's streams (also see Green, Strategy 1.1).

b) Consider opportunities to restore, enhance and daylight streams when public and private lands are being developed.

Quick Start #6

Create a high-profile demonstration project to showcase riparian/ aquatic ecosystem restoration, including community involvement and education.



2.3 Protect and improve water quality in aquatic ecosystems like ponds, lakes, streams, wetlands and marine areas.

Suggested Actions:

a) Explore ways to improve the effectiveness of the City's existing water quality protection policies, regulations and programs.

b) Consider opportunities to further avoid or reduce the use of chemicals such as pesticides and fertilizers on public and private lands.

c) Advocate for effective water quality policies and regulations at all senior levels of government – regional, provincial and federal.

d) Investigate ways to reduce the amount of harmful substances entering creeks from storm drains by providing information about proper disposal.

Big Move IN PROGRESS

2.4 Conserve water in the home, garden, workplace and community.

Suggested Actions:

a) Explore ways to expand and enhance current water conservation and education programs.

b) Encourage the installation of water-saving fixtures like faucets, toilets, showers and dishwashers in new buildings, and lead by example in City projects.

c) Investigate water metering as a policy tool to encourage water conservation.

Quick Start #7

Start a water metering policy review and develop water conservation options for consideration.

d) Allow water recycling and re-use for purposes such as irrigation and toilet flushing by considering policies, regulations, and the role of incentives.

e) Look for opportunities to plant drought resistant landscaping in appropriate urban locations on private and public lands.

What Can You Do?

Conserve and Recycle Water

- Reduce sprinkling – follow the City guidelines and bylaw.
- Only run the dishwasher and washing machine with full loads.
- Use water-saving plumbing fixtures.
- Collect water for the garden with a rain barrel.
- Replace lawn with drought tolerant plants.

Protect Water Quality

- Choose eco-friendly soap, shampoo, and cleaning products.
- Dispose of engine oil paint and toxic chemicals at a recycling facility, not down the drain.
- Fix any fluid leaks from your car.

Avoid Pollution

- Use refillable water bottles.
- Don't litter – put it in its place!
- Never dump anything down storm drains - they all lead to creeks or the ocean!

Want ***more info*** on how to ***get started***?
Please go to **www.burnaby.ca/ess+you**

Breathe - Climate and Air Quality

Now

Why it Matters:

- Climate change is one of the most pressing global issues of our time and we can do many things locally to help.
- Reducing air pollution can improve air quality and also help to make us healthier.
- Making Burnaby less vulnerable to climate change impacts can also make Burnaby a nicer place to live.

Now:

Burnaby is developing a Community Energy and Emissions Plan to reduce our greenhouse gas emissions, improve air quality, and make our buildings, transportation and energy systems cleaner and more efficient.

Did you know?

- About $300 million per year is spent on energy by everyone in Burnaby.
- Burnaby has relatively low per-person greenhouse gas emissions compared with many other cities.
- Burnaby's emissions are produced 50% by transportation, 45% by buildings, and 5% by solid waste.

Youth Taking Action

Youth are taking the lead and inspiring others of all ages to take action on climate change, from reducing emissions in schools, to organizing sustainability conferences and events, to making presentations to the United Nations. The Burnaby Youth Sustainability Network (BYSN), a student-led organization founded in 2010 by high school student Jennifer Hao is a great local example.

+ Read more on page 57.

Future

Goal

A community resilient to climate change, with clean air and low carbon emissions.

Control: Medium level of City control and influence.

City	Others

Strategies:

Big Move IN PROGRESS

3.1 Reduce community greenhouse gas (GHG) emission rates, including in the areas of transportation, buildings, district energy and waste.

Suggested Actions:

a) Consider opportunities to reduce greenhouse gas emissions through community planning, transportation planning, development, and waste management including those identified in the Community Energy and Emissions Plan (currently in progress).

Quick Start #8

Provide information to encourage energy efficiency, for example a website/phone number with information about opportunities for energy efficiency upgrades and grants for homes (new build and renovations).

b) Look for ways to demonstrate leadership by reducing City (corporate) GHG emissions (also see Manage, Strategy 10.3).

NEW Big Move

3.2 Improve resilience to climate change effects by assessing risks and seeking and acting on opportunities to protect the community and ecosystems from anticipated impacts.

Suggested Actions:

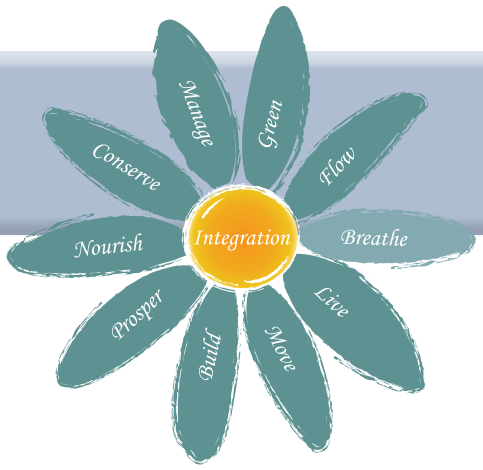
a) Consider developing a climate change adaptation strategy to improve the community's resilience.

Quick Start #9

Define an approach for developing a climate change adaptation plan, including information and resource needs, process and timeline.

b) Assess risks including sea level rise, extreme rainfall, storm events and flooding, shifts in plant and animal habitats and agricultural zones, drinking water supply, heat emergencies, and to the urban heat island effect.

= Big Moves IN PROGRESS = Big NEW Moves = FUTURE Big Moves = Quick Starts



c) Explore opportunities to reduce risks through land use, building design, using natural systems (for shoreline protection, rainwater management, cooling), landscape and urban forest planning, crop and pest management, water conservation, and emergency planning especially for vulnerable citizens (also see Green, Strategies 1.1 and 2).

3.3 Reduce emissions and health impacts of air pollutants (other than greenhouse gases).

Suggested Actions:

a) Work together with Metro Vancouver and neighbouring municipalities to implement regional air quality and greenhouse gas management plans.

b) Support regional, provincial, federal and Health Authority policies and programs to reduce indoor and outdoor air pollution.

c) Support voluntary initiatives to reduce air pollution by industry, businesses, institutions and individuals.

3.4 Reduce dependence on fossil fuels such as oil and gas.

Suggested Actions:

a) Encourage behaviour and investments supporting a "low carbon community"

What Can You Do?

Walk, Cycle and Take Transit

- Walk or bike for short trips.
- Take transit or bike to work or school one day per week (or more!).

Reduce Vehicle Emissions

- Drive less by combining trips.
- Carpool to work and school.
- Avoid vehicle idling.
- Maintain your vehicle.
- Choose a fuel-efficient, hybrid or electric vehicle.
- Live close to work and school.
- Fly less often.

Conserve Energy

- Turn the heat down, wear a sweater at home in winter.
- Replace incandescent light bulbs with compact fluorescent or LED.
- Choose ENERGY STAR appliances.
- Have a home energy EnerGuide assessment done.
- Fix leaky windows and doors.
- Insulate your home.

Want ***more info*** on how to ***get started***?
Please go to **www.burnaby.ca/ess+you**

Live - Land Use Planning and Development

Now

Why it Matters:

- Walkable neighbourhoods improve our quality of life and the health of the environment.
- Having places to learn, work, play and shop near our homes allows us to walk, cycle and use transit more and drive less.
- Incorporating nature within our urban neighbourhoods makes them healthier for people, plants and animals.

Now:

Burnaby has many opportunities for convenient urban living, a wide range of housing choices, easy access to SkyTrain, bus routes, parks and community services.

Did you know?

- Burnaby has been planning and building its four town centres - Brentwood, Lougheed, Edmonds, and Metrotown - for over 30 years.
- In the past 20 years Burnaby's population has grown by 66,000 people.
- Another 89,000 people are expected to live in Burnaby 20 years from now.

UniverCity

UniverCity, Burnaby's award-winning sustainable mixed-use community beside Simon Fraser University atop Burnaby Mountain, is home to more than 4,000 people. A variety of people, including young families and working professionals, are choosing to live here for its proximity to nature, walkable and safe streets, local services, and good transit connections to other locations.

+ Read more on page 58.

Future

Goal

A network of compact and complete communities, within a fabric of healthy ecosystems.

Control: High level of City control and influence.

City	Others

Strategies:

FUTURE Big Move

4.1 Create a more diverse, vibrant, resilient and resource efficient city from the neighbourhood level up.

Suggested Actions:

a) Encourage the creation of high quality, enjoyable, walkable neighbourhoods.

b) Investigate further protecting agricultural land and key habitat areas (also see Green, Strategy 1.1).

c) Consider ways to better manage risk from natural hazards like flooding using policies and programs.

d) Further Integrated Stormwater Management Plans (ISMP's) by exploring opportunities to integrate the goals of these plans into land use planning and management to create more integrated and ecologically healthy neighbourhoods.

e) Review opportunities within existing neighbourhoods, Town Centres and Urban Villages to create more diverse, and vibrant walkable communities when updating the city-wide Official Community Plan and other community plans.

f) Look for ways to reflect Community Energy and Emissions Plan (CEEP) strategies in updated community plans (also see Breathe, Strategy 3.1).

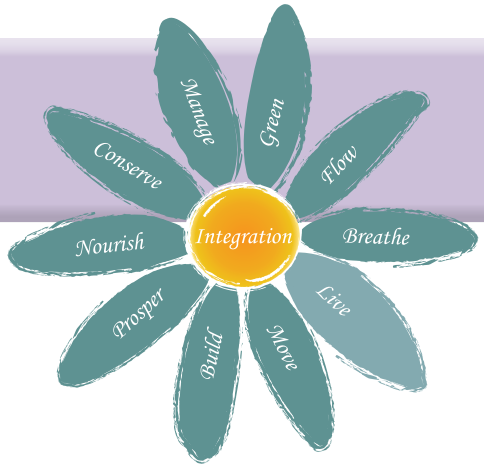
g) Consider 'green neighbourhood' policies[2] to encourage neighbourhood scale sustainability and resource sharing (also see Build, Strategy 6.5).

4.2 Strengthen the network of complete, compact, and walkable neighbourhoods served by transit.

Suggested Actions:

a) Continue to concentrate new development in Town Centres and Urban Villages well served by transit service to avoid "sprawl".

b) Explore creating cultural places within walking distance for people to shop, gather, socialize and enjoy culture without needing to drive. This could include small shops, theatres, art galleries, libraries, pubs, cafes and other cultural places.



Big Move IN PROGRESS

4.3 Create accessible outstanding outdoor public spaces that encourage active transportation, socializing and interacting with nature.

Suggested Actions:

a) Investigate projects and funding sources to further enhance public spaces and provide for more natural areas and features in urban areas of the City.

b) Encourage more community events such as block parties, farmers' markets, festivals.

Quick Start #10

Review current opportunities to convert more streets for pedestrian use, including temporary car-free events (such as Hats-Off-Day) and opportunities for permanent conversions.

c) Seek to provide more public amenities in outdoor spaces, including benches, water fountains, and public washrooms.

d) Investigate opportunities to make streets and other public places more vibrant and ecologically healthy – places to meet neighbours, shop, enjoy nature.

4.4 Integrate green space, nature and features into urban areas, including Town Centres and Urban Villages.

Suggested Actions:

a) Consider strategically protecting and restoring habitat (also see Live, Strategy 4.1 and Green Strategy 1.2).

b) Review opportunities to create more pedestrian trails that connect neighbourhoods and provide wildlife habitat (also see Green, Strategy 1.3).

c) Explore opportunities to incorporate more natural features like trees, native plant landscaping, and rain-gardens along roads, urban trails and other public spaces.

[2] Encouraging neighbors, community institutions and businesses to join with city leaders and utility providers to establish progressive sustainability goals and co-develop innovative district-scale projects. For example www.ecodistricts.org and Districts 2030.

What Can You Do?

Walkable, Friendly Neighbourhoods

- Walk or bike for short trips.
- Shop locally.
- Drive less and use transit more.
- Organize a neighbourhood meal or event to get to know your neighbours.

Green Neighbourhoods

- Plant native shrubs and trees for gardening and beautification.
- Organize a local park clean-up.
- Plant a food garden on your strata property or at your school.

Get Involved

- Learn about proposed development in your neighbourhood.
- Support features in new development like sidewalks and landscaping that improve walkability.
- Encourage environmentally friendly city planning.

Want ***more info*** on how to ***get started***?
Please go to **www.burnaby.ca/ess+you**

Move - Transportation

Now

Why it Matters:

- Walking, cycling and using transit improves our health, improves air quality and reduces carbon emissions .
- Walking, cycling and transit can improve mobility for all ages and abilities.
- Combining a mix of land uses, walkable neighbourhoods, and good transit service makes it easier to get around.

Now:

People in Burnaby have many transportation choices.

Did you know?

- Burnaby has 11 SkyTrain stations on two lines, and 34 bus routes.
- 23% of Burnaby's daily trips are by transit, higher than the regional average of 14%.
- 62% of Burnaby workers live within 10 kilometers of their jobs and 35% commute to work by transit.
- Burnaby has 145 kilometers of designated bike routes and trails.

Living Streets

Streets in Burnaby's four Town Centres are taking on a whole new look and feel, with wide sidewalks, public art, lush rain gardens and street trees, comfortable seating areas and separated bike paths. This is the result of Council's adoption of the new Town Centre Street Standards, and these features are intended to create delightful environments that encourage people to walk, cycle, and transit to their daily activities.

+ Read more on page 59.

Future

Goal

A walkable, bikeable, and transit-supported city that supports a healthy community and environment.

Control: Medium level of City control and influence.

Strategies:

Big Move IN PROGRESS

5.1 Develop and implement green transportation policies that create vibrant streets, reduce pollution and support healthier, more active lifestyles.

Suggested Actions:

a) Look for ways to include a strong focus on walking, cycling and transit, and safe streets for all people, as priorities in transportation policies.

Quick Start #11

Review gaps in existing walking, cycling routes and develop recommendations and priorities.

b) Implement the City's recently adopted Public Realm Standards for Town Centre Streets.

c) Consider expanding complete streets policies (mobility for all users, street trees/habitat, rain-gardens, and social spaces).

5.2 Make walking and cycling easier, safer and more comfortable.

Suggested Actions:

a) Investigate opportunities to expand and improve pedestrian and cycling routes and infrastructure (routes, separated paths, bike facilities), especially north-south connections.

b) Investigate ways to make it easier to find your way around by bike, using better signs, maps and navigation tools like apps.

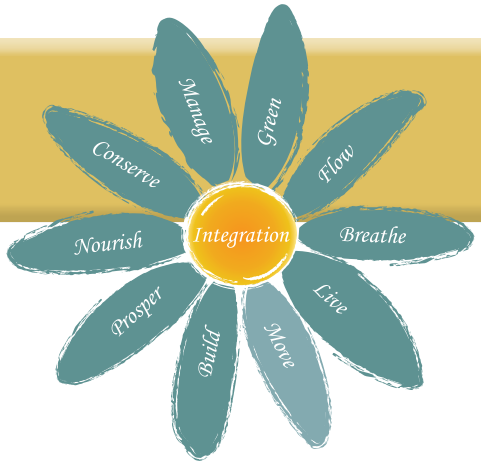
5.3 Improve public transit.

Suggested Actions:

a) Advocate for better levels of affordable transit service including more frequent bus service on select routes in Burnaby, especially north-south connections.

b) Consider accelerating improvements to bus stops, for example providing more amenities like shelters and making them wheelchair accessible.

= Big Moves IN PROGRESS = Big NEW Moves = FUTURE Big Moves = Quick Starts



5.4 Provide programs to encourage and reward a shift towards walking, cycling, and transit.

Suggested Actions:

a) Promote programs such as Bike to Work and Bike to School Week.

b) Continue working with developers to create policies and incentives to encourage walking, cycling and transit use by residents of new development.

c) Foster a culture of "car free living" through marketing and branding.

d) Promote cycling, to the public and city staff, as a normal everyday activity for all ages by encouraging "cycle-chic", upright bikes, cargo-bikes, kids participation, and other programs, through marketing and partnerships with others.

e) Investigate ways to work with health authorities and schools to promote benefits of walking/cycling.

Quick Start #12

Encourage active lifestyles by developing and promoting Parks, Recreation and Cultural Services programs to encourage walking and cycling for fitness and transportation.

5.5 Reduce impacts of vehicles on environmental health, personal safety and livable neighbourhoods.

Suggested Actions:

a) Explore ways to design more local residential roads to slow vehicle speeds and discourage motorized vehicles from short-cutting through neighbourhoods.

b) Encourage more "Woonerf" or living streets which double as a park or plaza with attractive features to restrict vehicle speeds so that all users can safely share the space.

5.6 Transition to more efficient (including zero-emission) vehicles and more efficient use of vehicles.

Suggested Actions:

a) Consider developing policy to strategically support and encourage the use of electric vehicles, including charging infrastructure in new developments and publicly accessible areas.

Quick Start #13

Undertake a preliminary review and policy recommendations to support deployment of electric vehicles.

b) Support and encourage car-sharing and bike-sharing.

c) Consider developing a parking policy to encourage fewer automobile trips and prioritize more efficient and low-emissions vehicles like priority parking for carpool/vanpool, electric vehicles, and car share vehicles.

5.7 Reduce the environmental impacts of transporting goods.

Suggested Actions:

a) Advocate and consider developing policies to encourage effective environmental risk management for transporting dangerous goods through the community in bulk by rail, truck, pipeline, and shipping.

What Can You Do?

Walk

- Walk to close-by places (up to 2 km).
- Shop and eat at walkable destinations.
- Get children used to walking early on.

Cycle

- Cycle to medium distance places (2-5 km).
- Cycle to work or school one day per week (or more!).
- Go on a cycling "date".
- Teach children safe cycling skills.

Transit

- Take transit to medium to long distance places (5-20+ km).
- Choose to live in a place well served by transit.
- Support improvements to transit.

Towards Car-free

- Join a car co-operative.
- Buy a cargo bike.
- Consider going car-free!
- Choose to live close to amenities, work or school.

Want ***more info*** on how to ***get started***?
Please go to **www.burnaby.ca/ess+you**

Build - Green Buildings and Energy

Now

Why it Matters:

- Green buildings use less energy and water and cost less to operate.
- Green buildings support healthy ecosystems.
- Buildings can last a long time, so it's important to make smart choices.
- Green building knowledge and technologies are an important part of the green economy.

Now:

Burnaby already has many green residential, office, school and city buildings.

Did you know?

- UniverCity, Burnaby's award-winning sustainable community, is home to over 4,000 people. It has green buildings (energy efficient and water efficient), and a district energy system.
- UniverCity Childcare Centre is a "regenerative" building that produces all its own energy, treats its own waste water and uses only the safest materials.
- New City facilities like the Edmonds Aquatic and Community Centre and the Tommy Douglas Library have green features that help to reduce operating costs and protect the environment.

Living in Harmony with Nature

Harmony House is a "net-zero energy" house in south Burnaby designed to produce more energy then it uses - including charging the family's electric car!

+ Read more on page 60.

Future

Goal

Buildings and infrastructure that have a positive impact on the environment.

Control: Medium level of City control and influence.

City	Others

Strategies:

Big Move IN PROGRESS

6.1 Meet updated energy performance building code requirements for new buildings.

Suggested Actions:

a) Promote and encourage energy conservation for new buildings.

b) Explore working with designers, builders, energy professionals, industry and the province to identify opportunities to optimize building code compliance.

Quick Start #14

Review issues and possible opportunities to improve compliance, such as with requirements for review of development proposals by an energy professional.

c) Consider other CEEP recommended strategies for improving energy performance (e.g., energy audits/ labeling; and biannual policy reviews).

NEW Big Move

6.2 Improve building design and construction to meet higher standards of environmental performance.

Suggested Actions:

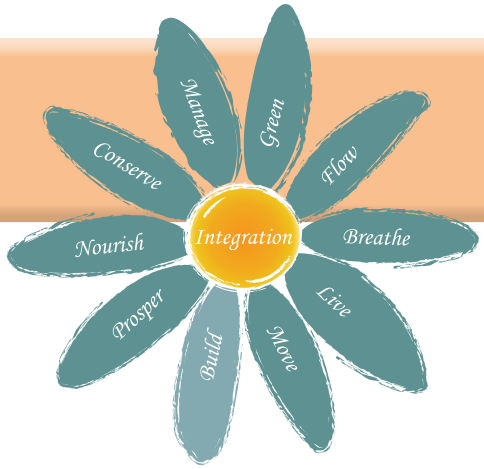
a) Promote and celebrate buildings that demonstrate leadership in conserving energy and water, reducing emissions and waste, and enhancing ecosystems.

b) Consider developing programs to further encourage and reward builders of highly energy efficient homes.

c) Explore developing 'green building' policies and programs for new developments, exceeding minimum regulatory requirements, including energy and emissions reduction, water conservation, waste reduction, ecosystem enhancement, and occupant health.

Quick Start #15

Develop policy recommendations for encouraging higher performing buildings through the City's development application process, based upon provincial Step Code or



other appropriate performance-based criteria.

6.3 Make existing buildings more 'green' – so they use less energy, less water, produce less GHG emissions, use healthy (non-toxic) and recycled materials, and reduce construction waste .

Suggested Actions:

a) Investigate opportunities to develop policies and programs to increase awareness, financing and incentives for retrofitting existing buildings to improve their environmental performance.

6.4 Reduce building demolition and construction waste.

Suggested Actions:

a) Support the development of more building materials recycling centres: places where contractors and homeowners can buy and donate salvaged materials for building and renovation projects.

b) Investigate policy approaches to encourage more adaptation of existing buildings for new uses, and/or re-using and recycling the materials at the end of their useful life.

6.5 Share and/or re-use energy and water between buildings where possible.

Suggested Actions:

a) Investigate policy approaches to encourage district energy systems within large site developments.

b) Encourage recovering and reusing waste heat from sources such as buildings, industrial plants, and sewers.

c) Explore opportunities for water re-use and recycling within large site developments.

d) Consider developing 'green neighbourhood' policies, and facilitate business leadership, to improve sustainability and encourage resource sharing within neighbourhoods (also see Live, Strategy 4.1).

6.6 Encourage a shift to renewable energy for buildings where possible.

Suggested Actions:

a) Encourage the use of renewable energy on large site developments as a component of a green energy opportunities review.

b) Consider developing policies to encourage renewable energy use in buildings such as solar hot water systems (also see Breathe, Strategies 3.1 and 3.4).

What Can You Do?

Conserve Energy at Home

- Replace incandescent light bulbs with compact fluorescent or LED.
- Choose ENERGY STAR appliances.
- Have a home energy EnerGuide assessment done.
- Fix leaky windows and doors in your home.

Home Renovations

- Choose low-impact, sustainably sourced or recycled materials.
- Use Energy Star windows/doors.
- Add extra insulation.
- Choose products low in volatile chemicals (paints, furniture, carpets, window coverings).
- Install energy efficient appliances.

New Green Buildings

- Support green buildings.
- Consider energy efficiency when choosing a new home.
- Design your new home for energy efficiency.
- Recycle demolition and building materials from construction.

Want ***more info*** on how to ***get started***?
Please go to **www.burnaby.ca/ess+you**

Prosper - Green and Inclusive Economy

Now

Why it Matters:

- The green economy is a fast-growing sector in both BC and the world.
- Improving sustainability can also improve a business's bottom line.
- Green businesses can attract people to live, work and invest in Burnaby.
- Businesses can help to encourage others to make green choices too.

Now:

Burnaby has a large number of jobs and a wide variety of industries including high technology and environmentally focused companies.

Did you know?

- Burnaby has maintained about 11% of the region's employment since 1971.
- Burnaby gained over 19,000 jobs in the 10 years from 2001 to reach almost 139,000 jobs in 2011.

Businesses 'Pledge' for Sustainability

The Burnaby Board of Trade's Pledge for A Sustainable Community is an online resource for helping businesses large and small make smart environmental choices, save money and promote their companies. Companies that take the Pledge can access tips and case studies, share their successes, serve as role models, and take on new environmental challenges. The Pledge is becoming a significant part of the BBOT brand and has generated a lot of interest from other organizations throughout North America. For more info please visit www.bbotpledge.ca.

+ Read more on page 60.

Future

Goal

A prosperous economy that supports a healthy environment.

Control: Low level of City control and influence.

City	Others

Strategies:

FUTURE Big Move

7.1 Work with the Burnaby Board of Trade, post-secondary institutions and other organizations[1] to expand Burnaby's green economic sector and improve environmental performance of businesses.

Suggested Actions:

a) Encourage more green businesses to locate in Burnaby.

b) Consider creating partnerships between businesses and educational institutions to develop plans and programs to reduce waste, use less energy/water and reduce GHG emissions.

c) Investigate the role incentives could have in encouraging innovative green business practices.

d) Encourage research and development of green technologies.

e) Support green social enterprises by promoting and partnering with non-profit groups with an environmental focus.

f) Consider updating existing City policies including the Economic Development Stategy.

g) Consider opportunities to engage businesses operating in the City via the business license process, including education and awareness during annual relicensing.

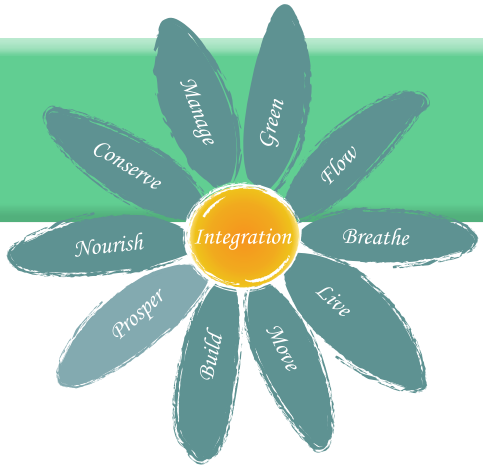
7.2 Work with the Burnaby Board of Trade, post-secondary institutions, and other organizations[1] to promote green businesses and celebrate their successes.

Suggested Actions:

a) Support and promote more businesses to take the Burnaby Board of Trade's (BBOT) Pledge for a Sustainable Community, Climate Smart program, and other similar programs.

b) Encourage businesses with outstanding green programs to apply to the City's existing annual Environmental Awards program.

c) Support the development and use of green business standards that help people make environmentally wise choices.



7.3 Work with the Burnaby Board of Trade, post-secondary institutions, and other organizations[1] to strengthen the business sector that facilitates recycling and reuse.

Suggested Actions:

a) Promote businesses that are leading in reducing their environmental footprint.

Quick Start #16

Work with BBOT to create an online directory of local 'green' products and services.

b) Explore working with businesses and industries beyond the city's borders to further reduce waste affecting Burnaby, and make use of wastes commonly produced in Burnaby.

c) Investigate ways to encourage more businesses to locate in Burnaby that recycle, reuse or harvest waste for energy.

[1]Other organizations could include local non-profits, health authorities, academics, unions, and international organizations.

What Can You Do?

Support Local Green Businesses

- Buy eco-friendly products.
- Shop at locally owned businesses instead of 'big box' stores.
- Support businesses that take action for the environment.
- Shop at thrift stores and other stores that offer re-used items.

Get Engaged

- Give businesses feedback about their environmental performance.
- Promote sustainability in your workplace.
- Encourage your company to take the Burnaby Board of Trade's Pledge for Sustainability.
- Volunteer with a local environmental non-profit community group.

Reduce, Reuse, Recycle

- *Reduce*: Share things like tools with neighbours.
- *Reuse*: Buy used items instead of new or re-sell items you no longer need.
- *Recycle*: Choose to buy products made from recycled materials.

Want ***more info*** on how to ***get started***?
Please go to **www.burnaby.ca/ess+you**

Nourish - Food Systems

Now

Why it Matters:

- Food connects us in a personal and direct way with our environment.
- Healthy food is necessary for personal health and wellness.
- Eating locally helps to strengthen the local economy and reduce air pollution caused by transporting food long distances.

Now:

Burnaby has been growing food for over 150 years.

Did you know?

- Burnaby has about 43 farms growing food on 129 hectares (318 acres) in south Burnaby.
- Burnaby's farms are very productive - they earned an average of 80% more than the provincial average or $269,000 per farm.
- Vegetables and cranberries are the main crops grown in Burnaby.
- Burnaby has a number of community gardens – the largest has 373 plots and is in the Riverside neighbourhood in south Burnaby.
- Beekeeping is allowed in most residential areas in Burnaby.

Gardens "Grow" Communities

Burnaby Food First helps to connect residents with extra garden space with others looking for a place to grow food. Sonya and Luci are two people who benefited from this service.

+ Read more on page 61.

Future

Goal

A food system that supports healthy people, a healthy community and a healthy environment.

Control: Low level of City control and influence.

City		Others	

Strategies:

Big Move IN PROGRESS

8.1 Improve food system sustainability and security to support local food production, distribution and consumption.

Suggested Actions:

a) Investigate ways to better protect Agricultural Land Reserve and City zoned agricultural lands using zoning, land use planning and other tools (also see Live, Strategy 4.1).

b) Look for ways to further reduce regulatory barriers for small-scale farms and food producers.

c) Consider developing a food system strategy to improve sustainability of food production, distribution and use, by the City and the community.

Quick Start #17

Define the scope and develop a terms of reference for the food system strategy, identify budget/funding sources and timeline.

d) Review and update policies and regulations to support local food production, distribution and consumption.

e) Support and promote Farmers' Markets in the City, particularly in convenient walkable locations within Town Centres.

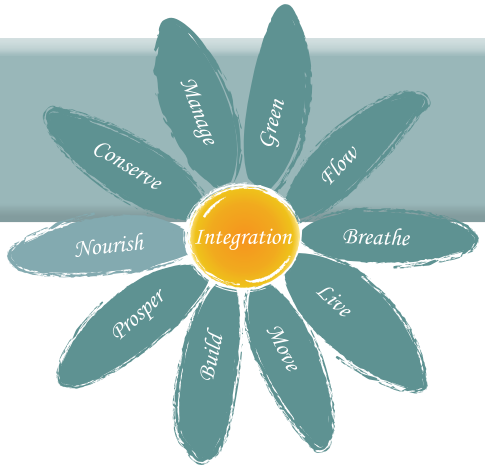
8.2 Develop a culture that celebrates and supports local, organic and healthy food.

Suggested Actions:

a) Encourage celebrations such as an annual local food and wine festival.

b) Investigate opportunities to promote and market farms and tours in the Big Bend area.

c) Encourage businesses such as restaurants and their food suppliers to purchase local, organic, sustainable food, for example by celebrating those that do and providing information for licensees to make responsible choices.



d) Promote local farms and vendors of locally produced food.

Quick Start #18

Provide information on City website to promote local farms and vendors of locally produced food.

8.3 Encourage citizens to grow and process food within the City.

Suggested Actions:

a) Consider partnering with others and/or consider hosting City workshops for citizens to learn about growing and processing food at home.

b) Support citizen-led initiatives to create new community gardens on suitable sites in the City.

Quick Start #19

Partner with a non-profit community group to establish a publicly accessible community garden and/or 'food forest' (food bearing trees and shrubs).

c) Encourage including food gardens in new development.

d) Support and encourage school programs with a focus on topics such as food gardens, nutrition, composting, and others.

e) Support efforts of community groups focused on food systems.

f) Support efforts to provide useful information to the public about local, organic and healthy food.

What Can You Do?

Buy Local Food

- Buy organic, locally grown, in season food.
- Shop at the Farmers' Market or use a farm-direct food service!

Grow Your Own Food

- Start a veggie garden or planter box.
- Join a community garden.
- Share your backyard with someone experienced in growing food.
- Start a school food garden.

Communicate and Network

- Share extra fruit or veggies with neighbours.
- Encourage local food purchasing in your workplace, school or organization.
- Teach children, friends and family about growing food.
- Join a food-focused community group like Burnaby Food First.

Want ***more info*** on how to ***get started***?
Please go to **www.burnaby.ca/ess+you**

Conserve - Waste Management

Now

Why it Matters:

- In nature, there is no such thing as "waste" – everything is recycled.
- Disposing of waste is very expensive and releases greenhouse gases.
- Creating new products from recycled materials can create local "green" jobs.
- Using waste as a resource can be good for our local economy while reducing the need for new resources.

Now:

Burnaby has a successful food-scraps collection and recycling program serving houses, townhouses and apartments.

Did you know?

- Burnaby diverts almost half of its waste by recycling and composting.
- Burnaby's new Eco-Centre accepts a variety of materials for recycling including appliances, hard and soft plastics, metal, paints and household chemicals, and Styrofoam.
- The Waste-to-Energy facility, located in Burnaby since 1998, processes 25% of the region's garbage and produces enough electricity to power 15,000 homes.

High Rise Recycling Champions

How did seemingly "ordinary" citizens – residents and strata members of an older high-rise apartment building in Burnaby become recycling super-heroes who are now sought out to teach others the secrets of their success?

+ Read more on page 62.

Future

Goal

World-leading waste reduction, diversion and management.

Control: Medium level of City control and influence.

City	Others

Strategies:

Big Move IN PROGRESS

9.1 Reduce material consumption by citizens and businesses.

Suggested Actions:

a) Encourage residents and businesses to buy less "stuff", through marketing and social media campaigns, like the Metro Vancouver "Create Memories Not Garbage" campaign.

9.2 Strengthen the sharing economy to use existing materials and resources more efficiently.

Suggested Actions:

a) Consider developing policies to encourage sharing and collaboration, for example, space (such as gardens or workspace), vehicles, bikes, food, books, tools, repair cafes, clothing and others.

b) Support opportunities for businesses and individuals to share or exchange materials and other resources such as with online tools.

9.3 Expand and improve waste reduction, recycling and food scraps programs.

Suggested Actions:

a) Promote recycling.

b) Investigate ways to expand the City's food scraps collection programs.

c) Look for opportunities to use more recycled materials in all construction and landscaping projects.

d) Explore new markets for recyclables.

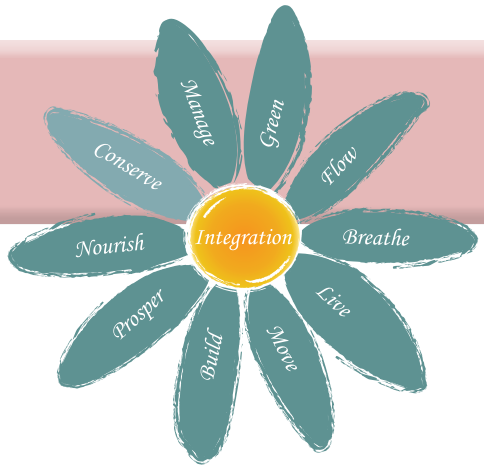
e) Investigate providing more locations at a neighbourhood scale for residents and businesses to drop off recycling and organic waste.

Quick Start #20

Conduct a policy and program scan of practices elsewhere and opportunities for Burnaby for localized neighbourhood drop-off.

f) Promote responsible purchasing and sharing to reduce waste.

= Big Moves IN PROGRESS = Big NEW Moves = FUTURE Big Moves = Quick Starts



9.4. Reduce and eliminate the sale and use of hard-to-recycle materials.

Suggested Actions:

a) Advocate for and promote Extended Producer Responsibility Programs for reducing packaging waste and hard to recycle materials and appliances.

b) Consider advocating for bans of certain harmful products like Styrofoam, plastic bags, and plastic bottles.

Quick Start #21

Consider options for eliminating bottled water sales at City facilities and encourage drinking tap water instead, such as by providing filling stations and at-cost reusable bottles.

9.5 Explore new opportunities for using waste as a resource (both materials and energy).

Suggested Actions:

a) Investigate feasibility of processing green waste locally (within Burnaby) to provide compost and/or energy.

b) Investigate opportunities for re-using waste heat such as from the regional Waste-to-Energy facility.

What Can You Do?

Reduce

- Buy less and only what you need.
- Give "experiences" as gifts instead of things.
- Buy higher quality products that last longer.
- Use refillable water bottles and coffee cups.
- Challenge yourself and your family to produce as little garbage as possible!

Re-use

- Make art or crafts from used items.
- Re-sell or donate items.
- Buy used products at thrift stores, garage sales, and online.
- Use salvaged materials and appliances for renovations.

Recycle

- Sort recycling and garbage properly.
- Recycle everywhere, including at home, school, work, restaurants and public events.
- Return batteries, oil, metal, paint, plastic, Styrofoam, glass, fluorescent light bulbs, paper to the Eco-Centre.
- Return bottles and electronics to the Return-It Depot.

Want ***more info*** on how to ***get started***?
Please go to **www.burnaby.ca/ess+you**

Manage - Governance, Education and Partnerships

Now

Why it Matters:

- Cities are leading the way in many areas of sustainability around the world.
- Burnaby relies strongly on its partnerships with others in the community.
- Education provides a foundation of knowledge and understanding for tomorrow's leaders.

Now:

Burnaby was recognized as the "Best Run City in Canada" in 2009 by Maclean's Magazine.

Did you know?

- Burnaby was the first city to celebrate World Rivers Day in 1993.
- Streamkeepers help to protect and restore many waterways across the city.
- Every year Burnaby hosts Environment Week activities and presents Environment Awards to leaders in the community.
- Burnaby provides public education on many environmental topics, including food scraps recycling, water conservation, and invasive species control.

Networks of Blue and Green

Initiated in 1972, Burnaby's Open Watercourse Policy has had far-reaching effects directly influencing the ecology and form of the city as we know it now. Today there are over 90 open streams in the city, supported by many City programs for stream protection.

+ Read more on Page 63.

Future

Goal

Environmentally aware and engaged community working together to improve Burnaby's environmental performance.

Control: High level of City control and influence.

City | Others

Strategies:

10.1 Educate citizens about ecology and sustainability.

Suggested Actions:

a) Consider working with schools and universities to engage youth in stewardship and incorporate local ecology and sustainability into curricula.

Expand and improve:

- sustainability contests, challenges and scholarships;
- school 'green teams' and Burnaby Youth Sustainability Network; and
- Burnaby Youth Week classes such as gardening, composting, cooking and bike repair.

Consider:

- eco-education as a core component of school curriculum;
- youth stewardship programs like "stream teams"; and
- City staff to visit schools to teach about environmental issues and actions.

b) Investigate ways to develop and promote education programs to encourage eco-friendly practices at home and in the community. For example:

- virtual tours of eco-friendly home renovation projects;
- recycling, re-use and sharing 'festival' celebrating local art created from found items, displays, film, live theatre, and more; and
- social media to host friendly competitions, education campaigns, and share information and resources.

Big Move IN PROGRESS

10.2 Explore innovative ways to engage the public on environmental issues.

Suggested Actions:

a) Consider developing city communication approaches to engage diverse audiences (all ages, genders, ethnic backgrounds), including using current media and technology tools.

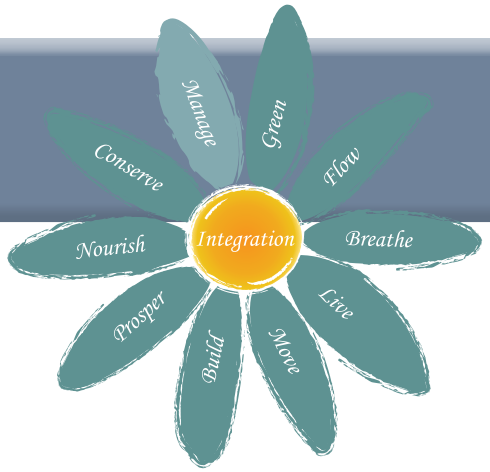
Quick Start #22

Develop recommendations to provide more opportunities for dialogue about sustainability at public festivals and events.

b) Explore ways to make it easier for people to engage, share ideas and understand how decisions are being made, for example:

- communicating the ESS with simple graphics and plain language;
- using social media and digital technology to engage the public; and

= Big Moves IN PROGRESS = Big NEW Moves = FUTURE Big Moves = Quick Starts



- communicating about sustainability initiatives in multiple languages.

NEW Big Move

10.3 Demonstrate leadership in sustainability through City facility and operations management by reducing energy and GHG emissions, conserving water, reducing and diverting waste and enhancing ecosystems.

Suggested Actions:

a) Pursue developing priorities and strategies for improving corporate sustainability.

b) Explore ways to implement further improvements in operational areas such as City procurement, vehicle fleet, staff commuting, food services, new and existing buildings and infrastructure, landscape design and management, server virtualization, and management of festivals and events.

Quick Start #23

Review upcoming civic building projects for opportunities to demonstrate energy-efficient passive design and net-zero-energy.

c) Consider financial, social, and environmental impacts over their entire lifetime when deciding how to manage hard assets like buildings and infrastructure.

NEW Big Move

10.4 Improve sustainability management through enhanced City business practices, system development, and leadership.

Suggested Actions:

a) Consider different options to resource and support the implementation of the ESS.

b) Seek to improve communication and coordination of sustainability initiatives among City departments.

Quick Start #24

Provide an annual report via the Environment Committee of Council on progress and implementation of the ESS and CEEP.

c) Seek to improve integration of sustainability into management and decision making.

d) Consider developing an approach for monitoring and reporting on progress toward the ESS vision and goals.

10.5 Develop programs to encourage and reward people who develop and try new or creative environmental practices.

Suggested Actions:

a) Encourage people to be environmental leaders by: promoting City awards programs; helping to promote existing rewards programs offered by BC Hydro, Fortis and others; promoting contests and challenges; and profiling 'citizen champions'.

b) Consider developing a program to foster neighbourhood green projects involving community education, engagement, and skills development.

10.6 Develop and nurture community partnerships.

Suggested Actions:

a) Explore ways to develop and nurture partnerships with neighbouring municipalities, other levels of government (regional, provincial, federal, First Nations), community groups, industry and businesses.

b) Consider hosting regularly scheduled meetings of Burnaby inter-departmental staff and stewardship groups to exchange information on sustainability related projects and initiatives.

c) Investigate convening interagency cooperation task forces to achieve goals across all levels of government, with business and public representation.

d) Consider partnering with community groups and schools to assess and monitor local ecology and restore ecosystems. For example:
- Review and where possible enhance city-supported coordination of environmental community groups.

Quick Start #25

Undertake an opportunity analysis for enhanced support and coordination of streamkeeper groups by the City.

- Support university-led ecology research in Burnaby.

What Can You Do?

Educate

- Learn about ecology and sustainability issues that interest you.
- Support environmental education in schools.
- Enroll children in nature programs.

Get Engaged

- Participate in events like Earth Hour, Bike to Work Week, Car-Free festivals.
- Vote!
- Give feedback to the City – write letters, attend open house events, or attend Council meetings.
- Volunteer with an environmental community organization.
- Organize a neighbourhood clean-up.

Communicate and Network

- Share your knowledge with others at work, school and at home.
- Write an article or blog.
- Host a neighbourhood party or event with a sustainability theme.

Want ***more info*** on how to ***get started***?
Please go to **www.burnaby.ca/ess+you**

Table 1: *Summary of all the "Big Moves"*

"Big Moves"

"Big Moves" are priority strategies intended to set long-term directions, while allowing flexibility to be pragmatic so that the City can better meet the needs of a changing world at every level of the organization.

Big Moves IN PROGRESS

Eight "Big Moves IN PROGRESS" have been designated to acknowledge and build on what we are already doing; lend strength and focus to our existing efforts; link to work **in progress**; and help guide, shape and improve what we are doing now.

#	ESS Goal	Big Move IN PROGRESS	Priority Strategies
2.1	FLOW	Managing Rainwater	Manage **rainwater** to restore and mimic natural flows and quality.
2.4	FLOW	Conserving Water	Conserve **water** in the home, garden, workplace and community.
3.1	BREATHE	Reducing Emissions	Reduce **community greenhouse gas** (GHG) emission rates, including in the areas of transportation, buildings, district energy and waste.
4.3	LIVE	Creating Outstanding Public Spaces	Create accessible **outstanding outdoor public spaces** that encourage active transportation, socializing and interacting with nature.
5.1	MOVE	Transportation Shift	Develop and implement **green transportation policies** that create vibrant streets, reduce pollution and support healthier, more active lifestyles.
6.1	BUILD	Building Better	Meet updated **energy performance** building code requirements for new buildings.
8.1	NOURISH	Food System Sustainability	Improve **food system** sustainability and security to support local food production, distribution and consumption.
9.3	CONSERVE	Reducing Waste	Expand and improve **waste reduction, recycling** and **food scraps** programs.
10.2	MANAGE	Engaging Creatively	Explore innovative ways to **engage the public** on environmental issues.

NEW Big Moves

Six "NEW Big Moves" have been designated to introduce **new** areas of work (policy, program, other actions); and highlight these as priorities for Council's consideration (approval-in-principle).

#	ESS Goal	NEW Big Move	Priority Strategies
1.1	GREEN	Ecosystem Health	Review and consider new **policies, plans** and **programs** to protect and enhance Burnaby's ecosystems.
3.2	BREATHE	Resilience to Climate Change	Improve **resilience** to climate change effects by assessing risks and seeking and acting on opportunities to protect the community and ecosystems from anticipated impacts.
6.2	BUILD	Regenerative Buildings	Improve **building design** and **construction** to meet higher standards of environmental performance.
10.3	MANAGE	Leading by Example	Demonstrate **leadership** in sustainability through City facility and operations management by reducing energy and GHG emissions, conserving water, reducing and diverting waste and enhancing ecosystems.
10.4	MANAGE	Community Sustainability	Improve **sustainability management** through enhanced City business practices, system development, and leadership.

FUTURE Big Moves

Two "FUTURE Big Moves" have been designated to acknowledge anticipated **future** work (likely policy); and lend **strength and focus** to future work.

#	ESS Goal	FUTURE Big Moves	Priority Strategies
4.1	LIVE	Making Our Community More Vibrant	Create a more diverse, vibrant, resilient and resource efficient **city** from the neighbourhood level up.
7.1	PROSPER	Expanding the Green Economy	Work with the Burnaby Board of Trade, post-secondary institutions and other organizations to expand Burnaby's **green economic sector** and improve environmental performance of businesses.

Table 2: *Summary of all the "Quick Starts"*

"Quick Starts" For every "Big Move" there is a supporting "Quick Start" to get things moving. "Quick Starts" are City actions designed to take advantage of short term opportunities and demonstrate commitment to the ESS.

	"Quick Start"	Goal (Strategy #)	"Big Move"
1	Define scope/phasing and develop terms of reference for the **Ecosystem Health Strategy**, identify necessary resources and timeline.	**Green (1.1)** Review and consider new policies, plans and programs to protect, connect and enhance Burnaby's **ecosystems**.	☆1.1
2	Create a **pollinator meadow** pilot project on public land to test approaches for broader enhancement of habitat for pollinators and associated species, and public benefits.	**Green (1.2)** Protect and enhance **habitat** on public and private lands.	
3	Undertake preliminary study (and mapping) to assess issue and recommend option(s) to protect **streamside protection and enhancement areas**.	**Green (1.4)** Encourage **development** and behavior that respects and reduces the impact to our **ecosystems** and wildlife.	
4	Work with Metro Vancouver to support creating regional solutions for disposal of i**nvasive plants** and **soil**.	**Green (1.6)** Reduce the environmental and economic impacts of **invasive species**.	
5	Review existing regulations for opportunities to reduce barriers to **on-site rainwater management** such as residential rain-gardens.	**Flow (2.1)** Manage **rainwater** to restore and mimic natural flows and quality.	2.1
6	Create a high-profile demonstration project to showcase **riparian/aquatic ecosystem restoration**, including community involvement and education.	**Flow (2.2)** Protect, restore and improve **aquatic ecosystems** like ponds, lakes, streams, wetlands and marine areas.	
7	Start a water metering policy review and develop **water conservation** options for consideration.	**Flow (2.4)** Conserve **water** in the home, garden, workplace and community.	2.4
8	Provide information to encourage **energy efficiency**, for example a website/ phone number with information about opportunities for energy efficiency upgrades and grants for homes (new build and renovations).	**Breathe (3.1)** Reduce **community greenhouse gas** (GHG) emission rates, including in the areas of transportation, buildings, district energy and waste.	3.1
9	Define an approach for developing a **climate adaptation** plan, including information and resource needs, process and timeline.	**Breathe (3.2)** Improve **resilience** to climate change effects by assessing risks and seeking and acting on opportunities to protect the community and ecosystems from anticipated impacts.	☆3.2
10	Review current opportunities to convert more streets for **pedestrian use**, including temporary car-free events (such as Hats-Off-Day) and opportunities for permanent conversions.	**Live (4.3)** Create accessible **outstanding outdoor public spaces** that encourage active transportation, socializing and interacting with nature.	4.3
11	Review gaps in existing **walking, cycling** routes and develop recommendations and priorities.	**Move (5.1)** Develop and implement **green transportation policies** that create vibrant streets, reduce pollution and support healthier, more active lifestyles.	5.1
12	Encourage active lifestyles by developing and promoting Parks, Recreation and Cultural Services programs to encourage **walking** and **cycling** for fitness and transportation.	**Move (5.4)** Provide programs to **encourage and reward** a shift towards walking, cycling, and transit.	
13	Undertake a preliminary review and policy recommendations to support **electric vehicles.**	**Move (5.6)** Transition to more **efficient** (including zero-emission) **vehicles** and more efficient use of vehicles.	
14	Review issues and possible opportunities to improve **compliance**, such as with requirements for review of development proposals by an energy professional.	**Build (6.1)** Meet updated **energy performance building code** requirements for new buildings.	6.1
15	Develop policy recommendations for encouraging **higher performing buildings** through the City's development application process, based upon provincial Step Code or other appropriate performance-based criteria.	**Build (6.2)** Improve **building design and construction** to meet higher standards of environmental performance.	☆6.2
16	Work with BBOT to create an online directory of **local 'green' products** and **services**.	**Prosper (7.3)** Work with the Burnaby Board of Trade, post-secondary institutions, and other organizations to promote **green businesses** and celebrate their successes.	
17	Define the scope and develop a terms of reference for the **food system strategy**, identify budget/funding sources and timeline.	**Nourish (8.1)** Improve **food system** sustainability and security to support local food production, distribution and consumption.	8.1
18	Provide information on City website to promote **local farms** and vendors of **locally produced food**.	**Nourish (8.2)** Develop a **culture** that celebrates and supports local, organic and healthy food.	
19	Partner with a non-profit community group to establish a publicly accessible **community garden** and/or **'food forest'** (food bearing trees and shrubs).	**Nourish (8.3)** Encourage **citizens** to grow and process food within the City.	
20	Conduct a policy and program scan of practices elsewhere and opportunities for Burnaby for **neighbourhood recycling** drop-off.	**Conserve (9.3)** Expand and improve **waste reduction, recycling** and **food scraps** programs.	9.3
21	Consider options for eliminating **bottled water** sales at City facilities and encourage drinking **tap water** instead, such as by providing filling stations and at-cost reusable bottles.	**Conserve (9.4)** Reduce and eliminate the sale and use of **hard-to-recycle materials.**	
22	Develop recommendations to provide more opportunities for dialogue about **sustainability** at public festivals and events.	**Manage (10.2)** Explore innovative ways to better **engage the public** on environmental issues.	10.2
23	Review upcoming civic building projects for opportunities to demonstrate **energy-efficient passive design** and **net-zero-energy**.	**Manage (10.3)** Demonstrate **leadership** in sustainability through City facility and operations management by reducing energy and GHG emissions, conserving water, reducing and diverting waste and enhancing ecosystems.	☆10.3
24	Provide an annual report via the Environment Committee of Council on progress and implementation of the **ESS** and **CEEP**.	**Manage (10.4)** Improve **sustainability management** through enhanced City reporting, business practices, system development, and leadership.	☆10.4
25	Undertake an opportunity analysis for enhanced support and coordination of **streamkeeper groups** by the City.	**Manage (10.6)** Develop and nurture **community partnerships**.	

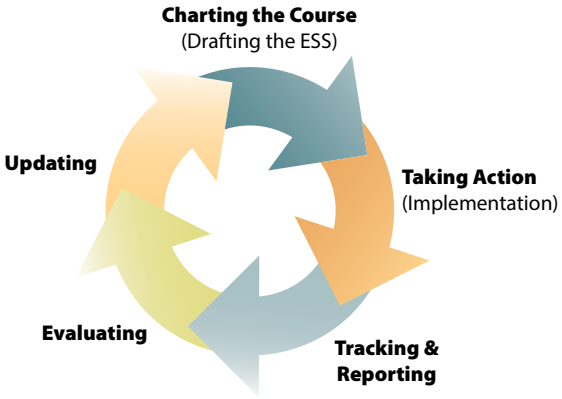
Legend: 2.1 **"Big Move" IN PROGRESS** ☆1.1 **"Big Move" NEW**

Brentwood Town Centre (2010 August).

7. Next Steps

Putting the ESS into action will require cooperation – among City departments, with partner organizations, other levels of government, citizen groups, businesses and citizens. The ESS provides a solid foundation, but it is just the beginning – the fertile soil in which more detailed policies and programs will grow. Also, the ESS is designed to be flexible and able to respond and adapt to opportunities as they arise. Following Burnaby City Council's approval of the final ESS and the CEEP, the next steps will involve putting the plan into action, and adapting as we go. This responsive and iterative approach is depicted in **Figure 9** (below).

Figure 9: *The iterative approach of carrying out the ESS.*



1. Charting the Course

(Drafting the ESS)

The ESS provides the overall plan, with a vision, goals, strategies and suggested actions, and has identified an initial set of priorities with *"Big Moves"* and *"Quick Starts"*.

2. Taking Action

The next step will be to develop an implementation plan. This will outline a plan for taking action on *"Big Moves"* and *"Quick Starts"* and/or any new priorities that have emerged. The implementation plan will outline details for work planning, such as lead department or agency, partners, whether additional resources or budget are required and an approximate timeline.

Specific new programs or policies that are developed based on the ESS may require further work-planning and Council approval, particularly if they involve a new direction or if additional City resources are required.

3. Tracking and Reporting

As stated in the Guiding Principles, the ESS includes an intention to track and report on progress. Scheduled reporting on progress would likely be delivered through the City's Environment Committee of Council, in a reader-friendly format that would also be appropriate for the public and stakeholders.

Although the ESS does not include numeric targets (with the exception of GHG targets developed through the CEEP process), **indicators** will be considered as a means to track and communicate progress towards the various goals. Indicators should follow principles such as being relevant, representative of the desired outcome, simple and inexpensive to monitor, and easy to understand. Some examples of commonly used indicators for environmental sustainability include area of protected greenspace, greenhouse gas emissions, water and air quality indexes, and transportation mode split.[1]

4. Evaluating

Checking and reporting ESS progress will allow staff and Council to evaluate how the plan is working, and whether changes are needed to adapt and respond to new opportunities.

5. Updating

As stated in the ESS Introduction, we cannot expect to predict the future, so the ESS is intended to be flexible and allow the City to be responsive as we implement it using this iterative process. The timeline for updating the ESS is not set, and depends on how well the ESS continues to serve as a guide for future policies and programs. When change is required, it may involve minor policy shifts while still referencing the higher level directions of the original ESS; or, the plan may one day be re-written and substantially updated.

[1] Sustainable Cities International, 2012: Indicators for Sustainability, how cities are monitoring and evaluating their success. http://www.mayorsinnovation.org/images/uploads/pdf/2_-_International_Case_Studies.pdf

Deer Lake / Metrotown (2007 July).

8. Conclusion

The ESS has created a vision of world leadership to strive toward. As a modern-day green community – with ample greenspace and ecosystems, complete communities and leading programs – this could be the ideal place for a shift toward a regenerative community, one that has a net positive benefit for ecosystems, people and the local economy. We can't ignore the scale of the challenge on many fronts, but we can leverage our strengths.

A Foundation of Community Support

The community's input to the ESS is a strong foundation for putting the plan into action. The Steering Committee and staff involved in creating the ESS heard loud and clear that citizens care deeply about Burnaby's environment.

Phase 1 public consultation showed that key issues (for the vision, as well as challenges and opportunities) included protecting and enhancing ecosystems, sustainable transportation, reducing waste, recycling, building and developing 'green', and reducing emissions.

Phase 2 showed strong support for the draft vision, and for all of the ten goals. Suggestions for actions were added to the ESS framework. Comments also showed that the community is motivated and ready to take action.

Phase 3 shared two draft reports, the Draft ESS and the Draft CEEP. The two draft plans were positively received, with a high response rate and strong interest. The majority of the comments expressed general support or specific reasons for supporting the two draft plans. Phase 3 confirmed the Draft ESS was headed in the right direction prior to the Final ESS being submitted to Council for approval.

Prioritizing for the Long Term

The ESS outlines a broad plan with many goals and strategies, and is one of three sustainability plans – economic, social, and environmental. The City has limited resources and needs to deliver many different services. For these reasons, the ESS identifies some high level priorities, in the form of "Big Moves" and "Quick Starts".

We will not achieve the ESS goals and vision right away, rather the ESS sets the course for a long and exciting journey with many opportunities to improve the health of Burnaby's ecosystems and community.

Future Possibilities

We live in a time of very rapid change. Ten years ago we could not have imagined the impacts that smart-phones and social media have had on our society. Similarly, as we look ahead, we should not assume that the future will only be based on small changes from how we live today.

We may be at the threshold of changes that could rapidly accelerate our transition to a low-carbon and greener society. For example, technological improvements have already resulted in a huge drop in the cost of solar power; batteries – for solar energy, electric cars and even homes – are rapidly improving; electric and self-driving vehicles are becoming more viable; and ultra-high-performance buildings consuming next to no energy are being constructed with little to no cost premium. Nature-inspired design, such as raingardens to manage stormwater, is becoming commonplace. On the social side, grassroots movements, enabled by social media, are having impacts on many different political agendas that have the potential to shift policies in support of a low carbon economy. And these are just some of the emerging issues that influence Burnaby's future.

A Hopeful Future, Together

Some emerging ideas or others we may not even be able to contemplate now may be 'game changers', creating large positive shifts in society.

As human beings we have proven we can be very creative. We can find solutions to the issues in creative and innovative ways. We can use the resources we now have available to us in better ways. We can use our ability to innovate and use new technology, together with natural systems, to regenerate our natural environment.

The ESS process has shown that the environment is important to our community and it casts a community vision for a better future. By working cooperatively with the support of all our citizens and partners, we can achieve the vision and goals of the ESS.

The ESS is a plan for Burnaby's green future!

Appendices

Burnaby
Environmental
Sustainability
Strategy

Appendix A
Further Acknowledgements

In addition to the Steering Committee, the following individuals were instrumental in development of the ESS.

100+ Sub-Committee Members
We extend our thanks to the over 100 people in total who attended 10 meetings and networked with 550 people in their broader peer groups in the fall of 2013.

"Now, Wow, How" small group activity, Sub-Committee 2 – Urban Development, Meeting No. 1 at BCIT (2013 Sept 26).

Sub-Committee No. 1
Ecosystems - Green and Flow

Karen Barry	Acting BC Program Manager, Bird Studies Canada
Frank Bassett	Senior Director of Facilities, Real Estate, and Corporate Services, Electronic Arts
Norm Caldicott	Faculty, Sustainable Resource Management, British Columbia Institute of Technology (BCIT)
Paul Cipywnyk	President, Byrne Creek Streamkeepers
Kel Coulson	Environmental Engineer, City of Burnaby
Elsie Dean	Network of Burnaby Seniors
Heather Edwards	Manager, Parks Planning Design and Development, City of Burnaby
Corinna Favaro	Science masters student, Simon Fraser University (SFU)
Cliff Fedosa	Burnaby resident
Jack Gin	Mentor and entrepreneur, Jack Gin Foundation
Ann Green	Volunteer Coordinator, Burnaby Lake Park Association
Alan James	Secretary, Stoney Creek Environmental Committee
Jayme Lewthwaite	Burnaby resident and student, Simon Fraser University (SFU)
Vivian Neal	Burnaby resident, Burnaby Mountain Residents Association
Nhi Nguyen	Byrne Creek Secondary student, Burnaby Youth Sustainability Network
David Noble	Staff Representative, BC Government and Service Employees Union (BCGEU)
Alekxos Sarter	Research Officer, City of Burnaby
Mark Sloat	Environmental Planner, City of Burnaby
Adam Vasilevich	Vice-Chair, Vancouver Public Space Network
Ian Wasson	Urban Design Planner, City of Burnaby

Sub-Committee No. 2
Urban Development – Live, Move, Build and Breathe

Kerly Acosta	Member of Sustainability Committee, Association of Professional Engineers and Geoscientists of BC (APEGBC)
Peter Cech	Burnaby resident, Citizen member of City of Burnaby's Transportation Committee
Ivan Chen	ESS Community Engagement Volunteer
Patrick Condon	Chair, Urban Design and Professor, Landscape Architecture, UBC Design Centre for Sustainability
Renée De St. Croix	Senior Long Range Planner, City of Burnaby
Elsie Dean	Network of Burnaby Seniors
Chris Dikeakos	Founder and Managing Principal, Chris Dikeakos Architects
Sharon Folkes	Housing Planning, City of Burnaby
Larry Frank	Professor, School of Population and Public Health, University of British Columbia (UBC)
Lee-Ann Garnett	Assistant Director, Long Range Planning, City of Burnaby
Diane Gillis	President, Kingsway Imperial Neighbourhood Association (KINA)
Jack Gin	Entrepreneur, mentor and public speaker, Jack Gin Foundation
Craig Henschel	Intern Architect, Council Member, Architectural Institute of British Columbia (AIBC)
Meg Holden	Assistant Professor, Urban Studies, Simon Fraser University (SFU)
Dan Johnston	Councillor, City of Burnaby
Jeewon Jung	Burnaby North Secondary student, Burnaby Youth Sustainability Network
Anderson Kang	Burnaby resident
Isabel Kolic	Executive Director, Heights Merchants Association
Peter Kushnir	Deputy Chief Building Inspector, City of Burnaby
Leah Libsekal	Transportation Planner, City of Burnaby
Margaret Manifold	Social Planner, City of Burnaby
Dale Mikkelsen	Director, Development, Simon Fraser University Community Trust
Jennie Moore	Director, Sustainable Development and Environmental Stewardship, British Columbia Institute of Technology (BCIT)
Martin Nielsen	Architect and Mechanical Engineer, Dialogue Design
John O'Donnell	Senior Vice President of Development, Ledingham McAllister
Ellen Pond	Principal, C2MP
Darseen Pooni	Environmental sustainability student and auxiliary RCMP Constable, Royal Roads University
Stuart Ramsey	Manager, Transportation Planning, City of Burnaby
Wendell Ratcliffe	Voices of Burnaby Seniors (VOBS)
Joan Selby	Social Planner, City of Burnaby
Terra Shimbashi	Architect, Elemental Architectural & Building Science Solutions
Zera Te	Community Planner, City of Burnaby
Ian Wasson	Urban Design Planner, City of Burnaby
Moreno Zanotto	past Burnaby Chair, HUB Burnaby

Sub-Committee No. 3
Health and Well-Being - Live and Prosper

Jindy Bains	Branch Manager, VanCity
Tumai Baptiste	Moscrop Secondary student, Burnaby Youth Sustainability Network
Antonia Beck	Executive Director, South Burnaby Neighbourhood House
Sherman Chan	Director of Settlement Services, MOSAIC
Mary Chan Chan Yip	Landscape Architect, PMG Landscape Architects
Sharon Folkes	Housing Planner, City of Burnaby
Lee-Ann Garnett	Assistant Director, Long Range Planning, City of Burnaby
Darlene Gering	Consultant, D. Gering and Associates
Anur Mehdic	Master's student in Resource and Environmental Management, Simon Fraser University (SFU)
Harman Pandher	School Trustee, Burnaby School District 41
Bill Schwartz	President, Polestar Communications
Joan Selby	Social Planner, City of Burnaby
Tom Sigurdson	Executive Director, BC Building Trades
David Switzer	Businessperson, Burnaby Heights Merchants' Association
Susan Todd	President, Solstice Sustainability Works
Susan Wilkinson	Volunteer Coordinator, Burnaby Lake Park Association
Diane Wood	President and Board Director, B.C. Federation of Retired Union Members (BCFORUM)

Sub-Committee No. 4
Green Economy, Food Systems and Waste - Conserve, Prosper and Nourish

Stephanie Archer	Community School Coordinator, Burnaby School District 41
Taryn Barrett	Food Services Event Leader, City of Burnaby
Jessica Beketa	Environmental Consultant, ESS Community Engagement Volunteer
KC Bell	Director, Sustainability Office, Simon Fraser University
Michelle Bonner	Vice President, Climate Smart Business
Dave Carlson	Farmer, Common Ground Community Farm
Kel Coulson	Environmental Engineer, City of Burnaby
Dipak Dattani	Assistant Director Engineering, Environmental Services, City of Burnaby
Sav Dhaliwal	Councillor, City of Burnaby
Jerry Ericsson	President, Diacarbon
Lee-Ann Garnett	Assistant Director, Long Range Planning, City of Burnaby
Athenaise Guertin	Farm Manager, Burnaby Fresh Farms
Paul Holden	President & CEO, Burnaby Board of Trade (BBOT)
Christy Intihar	Volunteer, Fresh Roots
Dan Johnston	Councillor, City of Burnaby
Lori Law	Chemical Engineer
Jeff Lawson	Alternate Regional Vice-President, CUPE BC Regional Office
Phil MacGregor	Carpenter (retired), City of Burnaby
Rebekah Mahaffey	Social Planner, City of Burnaby
Lindy McQueen	Edmonds People In Community (EPIC)
Shivani Mysuria	Cariboo Secondary School student, Burnaby Youth Sustainability Network
Carolyn Orazietti	Executive Director, Burnaby North Road Business Improvement Association
Chris Puzio	ESS Community Engagement Volunteer
Bernhard Rubbert	Business Owner, False Creek Collison
Julia Smith	Farmer, Urban Diggs Farm
Coro Strandberg	Principal, Strandberg Consulting
Tracey Tobin	Environmental Services Officer, City of Burnaby
Christine VanDerwill	Client Relations Manager, Climate Smart Business
Geoff Wensel	President, G.R. Green Building Products
Leanne Zmud	Project Coordinator, Burnaby Food First

Sub-Committee Plenary Sessions
New People

We extend our thanks to the people who took the time to join the sub-committee members at the sub-committee plenary session (fall 2013) or the sub-committee wrap-up session (winter 2014).

Janice Bobic	Beekeeper and food entrepreneur, Burnaby Food First
Kai Chan	Associate Professor and Canada Research Chair, Institute for Resources, Environment and Sustainability, University of British Columbia (UBC)
Raj Chouhan	MLA, Burnaby-Edmonds, Legislative Assembly of British Columbia
Kathy Corrigan	MLA, Burnaby-Deer Lake, Legislative Assembly of British Columbia
Bryan Green	Volunteer Coordinator, Burnaby Lake Park Association
Deborah Harford	Executive Director Adaptation to Climate Change Team (ACT), Simon Fraser University (SFU)
Irene Lau	Director/Member/Volunteer, Burnaby Lake Park Association
Richard T. Lee	MLA, Burnaby North, Legislative Assembly of British Columbia
Jane Shin	MLA, Burnaby-Lougheed, Legislative Assembly of British Columbia

23 Inter-Agency Roundtable Staff Participants
We extend our thanks to the 23 staff participants who attended the Inter-Agency Roundtable on behalf of the federal government, provincial government, regional government, neighbouring municipalities and other agencies in the winter of 2014.

Small group activity, Inter-Agency Roundtable (2014 Jan 7).

Inter-Agency Roundtable
Staff Participants

Elisa Campbell	Director, Regional and Strategic Planning, Metro Vancouver
Maurice Coulter-Boisvert	Salmoniod Enhancement Community Advisor, Department of Fisheries and Oceans Canada (DFO)
Margot Davis	Sustainability Manager, City of Port Moody
Erin Embley	Regional Planner, Metro Vancouver
Eve Hou	Air Quality Planner, Metro Vancouver
Kaitlin Kazmierowski	Environmental Coordinator, City of Richmond
Michael Liu	Energy Solutions Manager, FORTIS
Dr. Lawrence Loh	Medical Health Officer (Burnaby / Tri-Cities), Fraser Health
Jennifer Lukianchuk	Environmental Coordinator, Engineering Department, City of New Westminster
John Madden	Director of Community Planning & Development, Light House Sustainable Building Centre
Greg Maximiuk	Drainage Supervisor, Metro Vancouver
David Ramslie	Principal, Integral Group
Helen Roberge	Unit Section Head, Clean Communities, BC Ministry of Environment
Ann Rowan	Senior Policy Analyst, Metro Vancouver
Maria Stanborough	Senior Policy Analyst (Health and Environment Portfolios), Union of BC Municipalities
Karen Storry	Project Engineer, Metro Vancouver
Mark Wellman	Senior Engineer, Utility Planning, Metro Vancouver
Peter Whitelaw	Principal, Anura Consulting
Gil Yaron	Director, Special Projects and Partnerships, Lighthouse

2,100+ Members of the Public

We extend our thanks to the over 2,500 people who have taken the time to participate in the ESS process in Phases 1 and 2. Thank you for taking the time to participate!

---

22 Community Engagement Volunteers

We extend our thanks to the 22 community engagement volunteers who helped us connect with so many people and helped us collect so much valuable input to the ESS process.

Members of the public completing the Phase 2 "My Green Goals" questionnaire on an iPad at the Environment Festival (2014 May 24).

Phase 1 (Spring 2013)	Jessica Beketa
	David Brown
	Ivan Chen
	Swati Mukherjee
	Chris Puzio
	Gareth Wasylynko
	Annika Wilczewski
Phase 2 (Spring 2014)	Mehdi Aminipouri
	David Brown
	Chi Chi Cai
	Ken Chu
	Alli Dawn
	Cong Le
	Marie Pudlas
	Chris Puzio
	Karen Sawatzky
	Jacint Simon
	Sarah Slater
	Gabrielle Vacheresse
	Carmen Villotti
	Alexander Winardi
	Meghan Woods

---

11 Youth Video Contest Submissions

We extend our thanks to the dozens of secondary school students who helped to create the following 10 Youth Video Contest Submissions in the spring of 2014. The five finalist videos can be viewed at www.burnaby.ca/ess-videocontest.

Youth Video Contest Submissions

Phase 2

Fizza Ali	Cariboo Hill Secondary School	Prosper Entry: "Growing Burnaby"
Suchayte Bali	Cariboo Hill Secondary School	Move Entry: "Eco-Friendly Transport"
Amanda Bourdages	Burnaby Mountain Secondary School	Manage Finalist: "Manage"
Jonathan Budiardjo	Cariboo Hill Secondary School	Conserve Entry: "Recycling"
Denson Cohee	Burnaby Mountain Secondary School	Manage Entry: "Environmental Management"
Sarah Fletcher	Britannia Secondary School (Vancouver)	Move Entry: "The Future of Transportation"
Alice Huang	Moscrop Secondary School	Green Finalist: "Green"
Mitchell Kilmaster	Burnaby Mountain Secondary School	Move Finalist: "Move"
Mischa Price	Burnaby Central Secondary School	Conserve Finalist: "Food Scrap Recycling?"
Aishwi Roshan	Moscrop Secondary School	Nourish Finalist and Winner: "Let's Heal the Hurt"

80+ City Staff

We extend our thanks to the over 80 City staff who participated in multi-departmental workshops at two different points in the process – two workshops held in the summer of 2014 as part of Phase 2 and two workshops held in the summer of 2015 as part of Phase 3.

City Staff Workshop Participants

Phase 2 (summer 2014) and Phase 3 (summer 2015)

Building	Peter Kushnir, Assistant Chief Building Inspector - Permits and Customer Service
	Dan Mulligan, Assistant Chief Building Inspector – Bylaw Enforcement
	Craig Skinner, Senior Building Inspector
Engineering	Brian Carter, Manager, Public Works and Operations
	Richard Ching, Energy Coordinator
	Robin Choi, Superintendent - Facilities Management
	Ed Clark, Civil Engineer, Public Works
	Kel Coulson, Environmental Engineer
	Chris Ensing, Environmental Services Officer
	Saleh Haidar, Environmental Services Officer
	Ernie Jensen, Traffic Technician
	Doug Louie, Assistant Director Engineering, Traffic and Parking Management
	Tom Ng, Assistant Director Engineering, Facilities Management
	Darseen Pooni, Environmental Services Officer
	Simone Rousseau, Environmental Engineer
	Tracey Tobin, Environmental Services Officer - Community and Special Projects
	Ron Weismiller, Civil Engineer, Public Works
Finance	Angela Boal, Admin Assistant
	Shirley Brightman, Senior Real Estate Property Administrator
	Gisele Caron, Purchasing Manager
	Kimberly Chow-Tan, Asset Manager
	Linda Dunnett, Admin Officer
	Chris Hoang, Financial Analyst
	Denise Jorgenson, Director Finance
	Bob Klimek, Deputy Director, Finance
	Dan Layng, Chief Licence Inspector
	Maria Lecce, Clerk
	Frances Lee, Senior Internal Auditor
	Michelle Lu, Coordinator Financial Support
	Richard Rowley, Assistant Director Finance - Revenue Services
	Alan Scales, ERP Training Specialist
	Doug Spindler, Manager, Treasury Operations
	Larry Wong, Asset Manager
	Evelyn Wong, Clerk
	Willie Zhang, Capital Asset Analyst
Fire Department	Doug McDonald, Fire Chief
Human Resources	Jordan Brewer, HR Advisor
	Maggie Knapton, HR Advisor
	Pat Tenant, Director, Human Resources
Information Technology	Heather Manning, Business Analyst
	Carolyn Pang, Web Development Manager
	Bindu Taylor, Manager Tech Education, Process Documentation and Testing
	Shari Wallace, Chief Information Officer
Legal	Bruce Rose, City Solicitor
	Parry Zielke, Property Value Negotiator
Library	Deb Thomas, Deputy Chief Librarian
	Edel Toner-Rogala, Chief Librarian

Parks, Recreation and Cultural Services	John Callaghan, Superintendent
	Kate Clark, Parks Designer
	Craig Collis, Assistant Director, Recreation
	Henry DeJong, Parks Designer
	Heather Edwards, Manager, Parks Planning, Design and Development
	Dave Ellenwood, Director Parks, Recreation and Cultural Services
	Bert Gillman, Recreation Centre Supervisor
	Nancy Hoyles, Manager, Recreation Services
	Don Hunter, Assistant Director, Parks
	Marie Ishikawa, Manager, Community Marketing and Sponsorship
	Barry Johnson, Foreman 2
	Andre Kolber, Admin Assistant
	Kristine Lewis, Coordinator - Youth Recreation Services
	Denis Nokony, Assistant Director, Cultural Services
	Dean Pelletier, Manager, Business Operations
	Jim Pickering, Acting Superintendent
	Peter Resch, Arboricultural Foreman
	Teri Sabot, Recreation Centre Supervisor
	Donna Savoie, Coordinator, Recreation Programs
	Andy Simpson, Equipment Operator
	Melinda Yong, Environmental Technician, Parks Design
Planning	Deirdre Bostock, Long Range Planner
	Renee De St. Croix, Senior Long Range Planner
	Jesse Dill, Long Range Planner
	Lily Ford, Zoning Planner
	Lee-Ann Garnett, Assistant Director, Long Range Planner
	Donna Iacobellis, Subdivision Technician
	Lina Johannson, Subdivision Technician
	Leah Libsekal, Transportation Planner
	Rebekah Mahaffey, Social Planner
	Margie Manifold, Senior Social Planner
	Stu Ramsey, Manager - Transportation Planning
	Demian Rueter, Community Planner
	Mark Sloat, Environmental Planner
	Ian Wasson, Urban Design Planner
	Zeralynne Te, Community Planner

Members of the Project Team

City staff whose work contributed directly to the project.

Maisaloon Al-Ashkar	Program Leader
Sherri Aldis	Clerk Typist
Sharie Arrotta	Clerk Typist
Laurie Bedford	Recreation Programs Coordinator
Janet Chau	Clerk Typist
David Clutton	Long Range Planner
Katherine Cosco	Program Leader
Renee De St. Croix	Senior Long Range Planner
Dipak Dattani	Deputy Director, Engineering
Don Dool	Graphics Artist
Heather Edwards	Manager, Parks Planning, Design and Development
Laura Endrizzi	Program Leader
Angela Essak	Program Leader
Carollynn Fong	Program Leader
Lee-Ann Garnett	Assistant Director, Long Range Planning
Sonica Gurjal	Program Leader
Janine Hajek	Program Leader
Karishma Harpalani	Program Leader
Ashley Hildebrand	Planning Assistant
Janice Hum	Program Leader

Andrea Ivaz	Recreation Leader
Ranoo Jaswal	Program Leader
Tracy Klewchuk	Program Leader
Ed Kozak	Assistant Director, Current Planning
Lauren Kutashi	Program Leader
Penny Leithwood	Clerk
Shaun Leong	Program Leader
Veronica Leung	Program Leader
Leah Libsekal	Transportation Planner
Deena Liguori	Program Leader
Kristin Lum Tong	Program Leader
Rebekah Mahaffey	Social Planner
Heather Manning	Business Analyst
Laura Meehan	Program Leader
Lia Miller	Recreation Leader
Rod Nevison	Graphics Artist
Emily Nickason	Program Leader
Kathryn Norada	Program Leader
Lou Pelletier	Director, Planning and Building
Roberto Ramogida	Recreation Leader
Nikole Rampuri	Recreation Instructor
Stuart Ramsey	Manager, Transportation Planning
Beriwan Ravandi	Program Leader
Denise Relke	Program Leader
Johannes Schumann	Senior Current Planner
Joan Selby	Senior Social Planner
Mark Sloat	Environmental Planner
Grant Taylor	Current Planner
Lise Townsend	Ecosystem Planner
Beth Tucker	Program Leadert
Laura Ursic	Program Leader
Kate VanMeerMass	Executive Assistant
Wendy Wilson	Executive Assistant
Jim Wolf	Senior Long Range Planner
Adam Wright	Community Consultation Coordinator
Justin Wu	Program Leader
Andrew Yao	Planning Assistant
Blanka Zeinabova	Admin Officer

Other Organizations

We would like to thank the following organizations.

Burnaby Now	For allowing us to reprint the "Gardens Connect Residents" inspiring story used for Nourish in **Appendix D.**
Literacy Now Burnaby	For their assistance in helping us to understand how to convey the ESS concepts in way that the broader community would better understand.
Vancouver Foundation	For allowing us to use the graphics from their "Neighbourhood Small Grants Program" as the main elements of the ESS + You "What You Can Do?" graphic

Supporting Consultants
Phase 1 – "Issues and Priorities" and Phase 2 – "Exploring Further"

Golder Associates	Rob Barrs
	Alex Boston
	Edel Burke
	Joanna Clark
	Sarah Cloherty
	Pascale Cometto
	Laurel Cowan
	Keltie Craig
	Emory Davidge
	Derek de Biasio
	Janine de la Salle
	Kerry Dow
	Daniella Fergusson
	Bud Fraser
	Amy Gore
	Mark Johannes
	Joaquin Karakas
	Aaron Licker
	David Reid
	Sarah Rutherford
	Anthony Smith
	James van Hemert
	David van Seters
	Vince Verlaan
	Sarah Wilmot
	Christina Worster
Bunt Associates (sub-consultant)	Paul Dorby

Supporting Consultants
Phase 2 – "Exploring Further" and Phase 3 – "Draft ESS"

Clear Language	Joan Acosta
Integral Group	David Ramslie
	Alison Walker
	Rachel Moscovich
MODUS	Peter Whitelaw
	Daniella Fergusson
	Laurel Cowan
	Collyn Chan
	Tesicca Truong

Presenters
Steering Committee Meetings / Sub-Committee Meetings

Deborah Harford	Adaptation to Climate Change Team (ACT)
Patrick Lucey	Aqua-Tex Scientific Consulting
Helen Goodland	Brantwood Consulting
Kai Chan	Institute for Resources, Environment and Sustainability, UBC

Appendix B
ESS Process Summary

Led by the Mayor's ESS **Steering Committee**, the ESS process is one of the largest and most creative public consultation processes the City has ever undertaken. A summary of the ESS process phases and timeline is shown in **Figure B1** (below).

In total, over 2,500 people have participated in the ESS process and helped to shape the ESS. Extensive and creative community engagement methods were used including a website, information displays and brochures, mobile online questionnaires on iPads, community engagement volunteers, environmental Super-Heroes (Phase 1), a Vision Tree (Phase 1), a public workshop (Phase 2), Sustain-A-Bucks group activity (Phase 2), a youth video contest (Phase 2), an ESS plinko trivia game (Phase 3), social media (Phase 3), webinar (Phase 3), and "flash survey" (Phase 3). The process has brought together motivated individuals, groups, businesses and institutions to envision and create a plan for Burnaby's green future.

The ESS process and the creation of the draft ESS framework was guided by the 20 member ESS Steering Committee of recognized community leaders from diverse background and interests, chaired by Mayor Corrigan and served by Councillors Dan Johnston (vice chair), Sav Dhaliwal, Colleen Jordan, and Richard Chang.

Phase 1 Consultation – "Issues and Priorities"

Phase 1 public consultation was held from May to July 2013, focusing on "Issues and Priorities" and this initial round of consultation, focused on broad and high-level engagement, was designed to raise awareness about the process and to attract input from diverse audiences and voices. Seven public events were attended by staff and volunteers and about 500 people were engaged through a variety of methods including an online questionnaire hosted on iPads.

Phase 1 public consultation revealed broad interest and support for environmental protection, restoration, and related sustainability initiatives. Respondents also stated a strong desire for more information, education and involvement, demonstrating a willingness to take an active part in Burnaby's sustainability initiatives. This feedback was used to refine the draft vision and goals for the ESS.

To view the complete summary of ESS Phase 1 public consultation, please visit www.burnaby.ca/ess-report-B.

Figure B1. *The ESS Process*

Phase 2 Consultation – "Exploring Further"

In advance of engaging the public in Phase 2, four **Sub-Committees** were convened in the Fall of 2013. In total 11 meetings were held with over 100 people in total and networking was undertaken by sub-committee members among 550 people in their broader peer groups.

An **Interagency Roundtable** was held in January 2014, with about 20 attendees representing neighbouring municipalities, other levels of government (Metro Vancouver, the provincial government, and the federal government) and other policy-focused organizations (Fraser Health, Fortis - Energy Solutions, Lighthouse Sustainability Building Centre, UBCM).

The input provided by both the sub-committees and the interagency roundtable was used to refine the ESS draft goals, strategies and example actions used for the Phase 2.

Phase 2 ("Exploring Further") took place between March and July 2014 and engaged the public in deeper and more focused ways by presenting a draft vision statement, 10 draft ESS goals and 51 draft ESS strategies to the community for feedback. 10 public events and three presentations were attended by staff and volunteers and a variety of methods were used to engage over 1,600 people during Phase 2.

The Phase 2 public consultation was **positively received**, with a **high response** rate and **strong attendance** at events.

- Over 800 questionnaire responses completed.
- Good representation from a variety of age groups among the public, with the ESS team targeting groups of people who are often harder to engage (e.g. youth and seniors).
- Over 60 staff participated in two workshops and contributed over 700 ideas.

There was generally a **high level of support** for the proposed ESS vision, goals and strategies.

- Draft vision statement was well received (84% support).
- Draft goals and strategies were well received and strongly supported (80%-97% support).
- No major 'missing pieces' or areas of focus at the goal level.
- No "red flags" identified.

Two questions on 'actions' were asked in the questionnaire:

1. What can the City and its partners do to help reach the stated goal and strategies?
2. What can you (as individual citizens) do to help reach the stated goal and strategies?

Many ideas were submitted in response to these two questions in the online questionnaire.

- Almost 3,900 suggestions and comments were received.
- Many constructive ideas were submitted, indicating people are very well informed.
- About 2,300 ideas (2,329 or 60% of the 3,900 suggestions) were received for the first question - "What **We (City)** Can Do".
- About 1,600 ideas (1,554 or 40% of the 3,900 suggestions) were received for the second question - "What **You (Public)** Can Do".

Ideas were analyzed in detail using a key word approach to group similar ideas. This detailed analysis was then used as key input to help develop the proposed ESS Structure, "Big Moves" and "Quick Actions", as described in **Section 6** ("The ESS Framework"), of this report.

To view the complete summary of ESS Phase 2 public consultation, please visit www.burnaby.ca/ess-report-C.

Phase 3 Consultation – "Draft ESS"

Phase 3 was the third and final phase of public consultation and took place between March 16 and June 16, 2016. Phase 3, shared two draft reports - the Draft ESS and the Draft CEEP - and was a check in with the community to see if we were on the right track before submitting the ESS to Council for adoption.

The Draft ESS included a four level draft ESS **framework** of one vision, 10 goals, 49 strategies and 151 suggested actions.

A variety of approaches and techniques were used to engage people of many ages and backgrounds.

Overall, the engagement was **positively received**, with a **high response** rate and **strong interest** at the **16 events** attended. Over **1,200 ideas** were collected from the public in total with a high number of comments expressing general support or specific reasons for supporting the two plans.

Phase 3 had two streams – **awareness** and **engagement**. Over **5,600 people** were made aware of the ESS/CEEP and over **580 people** were engaged to provide feedback. 17% of people engaged had previously been involved in the ESS process and **83% were new to the ESS process**.

As a result, the public input from Phase 3 confirmed the **Draft ESS is heading in the right direction** overall.

- All 10 draft ESS goals had a **significant level of interest** (number of responses) and there was relatively little spread between each of the goals.
- There was a **high level of support** (ranging from 87% to 99% support) for each of the 10 draft ESS goals and 49 draft ESS strategies.
- Specific priorities in the ESS comments included **protection of greenspace**, **improving walkability** and **bike-ability**, and **recycling and waste**.
- The majority of the ESS comments showed a **high level of comfort** with the **"goals" and "strategies"** contained within the Draft ESS.
- Most of the detailed ESS comments put forward **changes to "suggested actions"**.

The input collected from Phase 3 was used to create the **Final ESS Report** and the **Final CEEP Report**, before they were submitted to Council for approval.

To view the complete summary of ESS Phase 3 public consultation, please visit www.burnaby.ca/ess-report-D .

Appendix C
Burnaby's Environmental Achievements

Deer Lake and Kingsway Ridge

A separate 34-page report was drafted to summarize Burnaby's Environmental Achievements. This appendix provides a few excerpts from the discussion paper. The full report can be viewed at www.burnaby.ca/ess-report-A.

Excerpts

Our environment is our surroundings that sustain us – the air we breathe, the earth we walk on, the places we live, work and play. A healthy environment in turn supports healthy ecosystems, vibrant and prosperous communities, and personal health and well being. In this context, the City of Burnaby has implemented a comprehensive framework of policies and regulations and has undertaken leading initiatives in cooperation with our partners. These policies and initiatives are organized in this report according to the following topics, as shown in **Figure C1**:

1. Environmental Governance
2. Ecosystem Restoration and Enhancement
3. Climate and Air Quality
4. Green Development and Economy
5. Water, Energy and Resource Management
6. Stewardship, Education and Health

Youth volunteers helping to remove invasive species.

In order to recognize successes and challenges of the past, today, and the future, these categories are organized around three questions:

- Where are we today?
- What have we accomplished?
- What lies ahead?

This document reviews some of the key environmental achievements in the past 10 to 15 years, recognizing that these have been preceded by many more in earlier years.

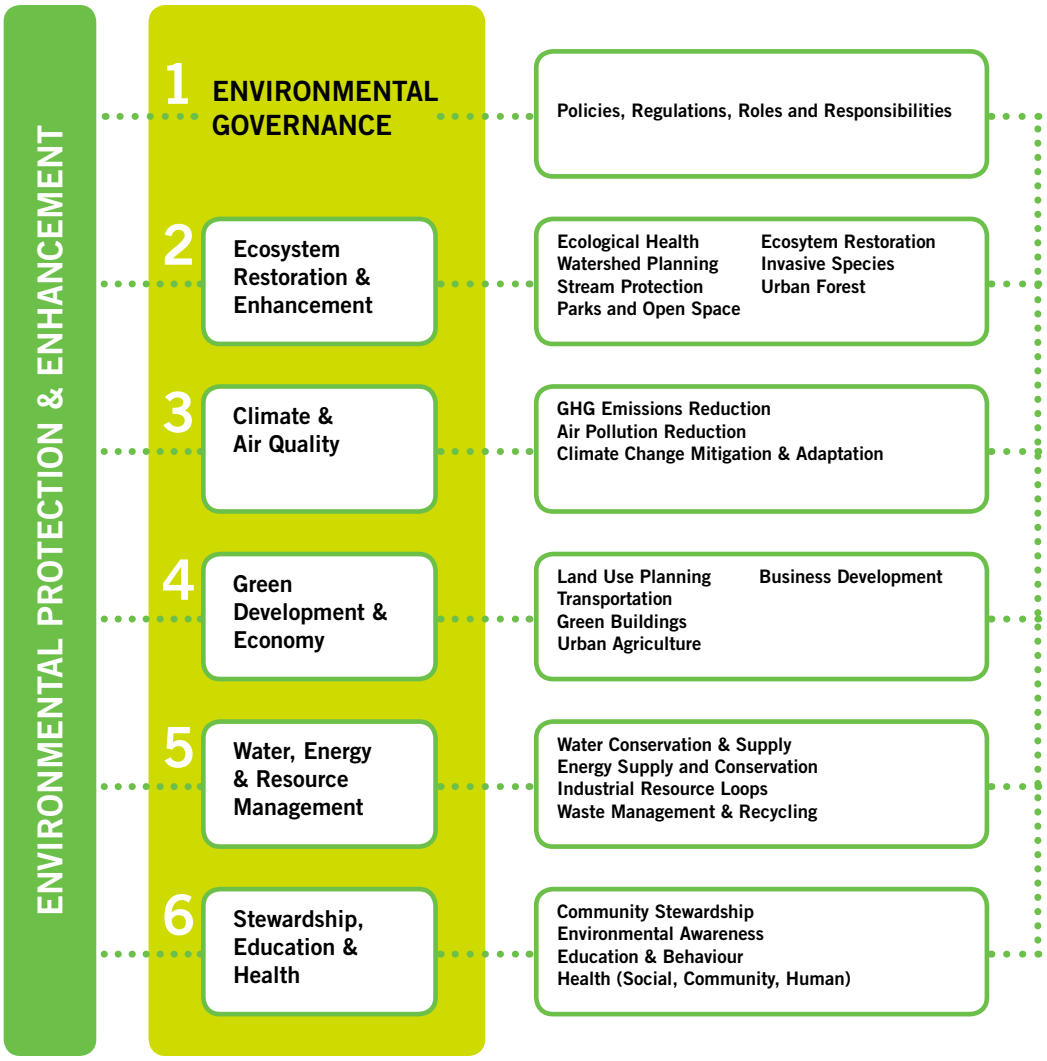


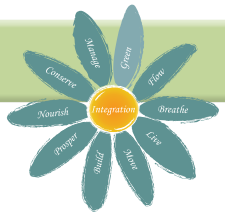
Figure C1. *Topics supporting environmental protection and enhancement in Burnaby, as presented in Burnaby's Environmental Achievements - a Discussion Paper*

Appendix D
Inspiring Stories (Continued from Section 6 – "The ESS Framework")

These stories were introduced in **Section 6**, "The ESS Framework", under the heading "Now".

The *grey italicized text* appeared in the Framework, and the rest of the stories are continued below.

Green - Green Space and Habitat

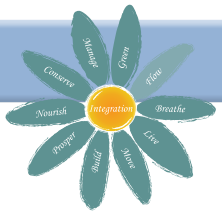


A "Great" place for Herons

One of the region's largest Great Blue Heron colonies is located in Deer Lake Park and hosts around 40-60 nests and over 100 birds. Each spring, beginning in March, the herons can be seen gliding nearby as they forage to refurbish their nests and hunt to feed their chicks. Each mating pair raises one or two chicks, which leave the nest by July or August. The existing colony has been active since 2008, beginning with just a few nests. Monitoring of the colony began in 2010 when Burnaby Central School was under construction, and continues today, helping to ensure disturbances to the birds are minimized. This habitat is all the more important as Great Blue Herons are classified as a species at risk in BC and they are exposed to a lot of urban stresses throughout the region. You can help by ensuring off-leash dogs do not chase herons, and supporting protection of habitat like wetlands and shorelines.

Nesting heron at Deer Lake Park
Photo credit: George Clulow
Used with permission.

Flow - Water Management



Salmon in the City

Burnaby has over 90 unique streams and two lakes, part of three major watersheds (land basins draining to a common point) - the Brunette River, the Fraser River, and the Burrard Inlet. Thanks to long-term efforts by the community working together, in the fall of 2013 salmon returned to spawn in some streams for the first time in living memory. In tiny Buckingham Creek at Deer Lake, more than a dozen chum salmon were seen spawning. Salmon are now able to swim from the Fraser River via the Brunette River and all the way up Still Creek as far as Rupert Street in Vancouver to spawn.

Watch an inspiring video here about the salmon returning to Still Creek, featuring Mark Angelo, BCIT professor emeritus and World Rivers Day founder: https://www.youtube.com/watch?v=7XWH4us7M8w

Salmon in Stoney Creek.

Breathe - Climate and Air Quality

Youth Taking Action

Youth are taking the lead and inspiring others of all ages to take action on climate change, from reducing emissions in schools, to organizing sustainability conferences and events, to making presentations to the United Nations. The Burnaby Youth Sustainability Network (BYSN), a student-led organization founded in 2010 by high school student Jennifer Hao is a great local example.

Although facilitated by School District staff, it's the energy of the students that makes the Burnaby Youth Sustainability Network go. Green Teams from each high school organize their own events and convene regularly to exchange ideas on topics including renewable energy, recycling, food, and invasive species. A "Do it Green" conference is held each year for students across the city, with all the sophistication of a professional sustainability event, including keynote speakers, entertainment and breakout sessions. The 2015 DIG conference featured several speakers and organizations with a strong focus on climate change.

Local and Regional:

The winning entry of the ESS Youth Video Contest, by Aishwi Roshan, features Burnaby high school students making a food garden as a way to reduce greenhouse gas emissions, with an emotional and creative backdrop depicting oil's impact on the planet.

Kids for Climate Action is "a Vancouver-based non-profit youth organization advocating stronger political action on climate change".

BYSN'S Executive Team

Youth4Action is a Metro Vancouver youth leadership program, providing resources, events and information to engage youth in sustainability.

The Jellyfish Project is a youth-founded "unique and powerful assembly focussed on generating awareness among youth about ocean sustainability, climate change, and environmental stewardship. Through the power of music and live performance, students are engaged into the environmental conversation and are given information on how to become active participants in the sustainability movement." The JFP office is located in Gibsons, BC, but they have given presentations across B.C.

National:

The Starfish Canada, which has a Burnaby office, is a Canada-wide communications portal founded by and directed toward youth, offering information and dialogue on environmental issues including climate change.

The Canadian Youth Climate Coalition is "a united front of youth from across Canada tackling the biggest challenge of our generation, the emerging climate crisis. Acting locally, provincially, federally, and internationally, we combine our forces to organize actions, influence government and implement concrete solutions. Working in schools and communities from coast to coast to coast, we are calling for and building a just and prosperous transition to the new Canada we all need to see."

Global:

Action4Climate is a worldwide youth film contest on the theme of climate change held in 2014. There were 230 entries from 70 different countries! Check out the website to watch the highly inspiring winning entries in a number of different age and topic categories.

UniverCity

UniverCity, Burnaby's award-winning sustainable mixed-use community beside Simon Fraser University atop Burnaby Mountain, is home to more than 4,000 people. A variety of people, including young families and working professionals, are choosing to live here for its proximity to nature, walkable and safe streets, local services, and good transit connections to other locations.

Other "green" features of the community include energy and water efficient green buildings, natural rainwater management, and a district energy system.

Retail shops within a walkable neighbourhood at UniverCity.

Planning of UniverCity began with the SFU Official Community Plan (OCP) in 1996, coupled with a land transfer of 320 hectares of forest land from SFU to the City which became the Burnaby Mountain Conservation Area. SFU Community Trust, representing the university and associated stakeholders, coordinates development. As of 2015, there were over 4,000 residents living at UniverCity. Eventually, about 10,000 people will call UniverCity home. The community currently includes a mix of multi-family residences, an elementary school, a childcare centre, a grocery store and pharmacy, various businesses and offices, and a number of cafes and restaurants.

UniverCity exemplifies many sustainable practices, including:

Managing rainwater to mimic a natural forest – allowing water to soak into the ground through rain-gardens and permeable pavement , which are required for all new roads and buildings. These practices are closely monitored and have provided an example for many other sites in Burnaby and beyond.

Green building requirements: Since 2010 UniverCity has had requirements for green buildings to address energy and water conservation that go beyond the BC Building Code standards. Native plant landscaping and on-site stormwater management are also required.

District Energy: A low-carbon neighbourhood scale energy system is being planned to serve new buildings at UniverCity and the SFU campus, and will reduce greenhouse gas emissions by 80% overall. Four residential buildings are currently connected to a temporary natural gas boiler, which will be replaced with a biomass (waste wood) fuelled system once there is enough demand.

Green Buildings: The University Highlands Elementary School was built to LEED™ Gold standards, and includes outdoor teaching areas and a curriculum strongly focused on the environment and sustainability.

The UniverCity Childcare Centre opened in 2012 and is designed to meet the "Living Building Challenge" standard, one of the world's most stringent green building rating systems. For more information, please visit http://univercity.ca/sustainability/living-building/ or http://www.archdaily.com/390874/sfu-univercity-childcare-hcma.

Car sharing is available to residents through a car co-operative.

UniverCity has won many awards for sustainable innovations:

- 2015 City of Burnaby Environment Award for Planning and Development (Phase 3)
- 2012 City of Burnaby Environment Award for Planning and Development (Childcare Centre)
- 2011 Canadian Institute of Planners, Planning Award of Excellence in Neighbourhood Planning
- 2008 American Planning Association National Planning Excellence Award
- 2007 City of Burnaby Environment Award for Planning and Development
- 2005 BC Hydro Power Smart Excellence Award
- 2005 Urban Development Institute Award of Excellence
- 2005 Association of University Real Estate Officials, Project of the Year

Move - Transportation

'Living' Streets

Streets in Burnaby's four Town Centres are taking on a whole new look and feel, with wide sidewalks, public art, lush rain gardens and street trees, comfortable seating areas and separated bike paths. This is the result of Council's adoption of the new Town Centre Street Standards, and these features are intended to create delightful environments that encourage people to walk, cycle, or take transit to their daily activities.

Many cities are developing landscaping and urban design approaches, but Burnaby's approach is unique in having been inspired by some of the 'best of the best' practices used in leading cities around the world. This includes Chicago's wide sidewalks, Washington DC's raingardens, Toronto's street tree soil standards, and Utrecht's cycle tracks in the Netherlands. In many older neighbourhoods sidewalks were built after maximizing road space for automobiles, or perhaps some trees and public space was included but didn't address accessibility for people with disabilities.

In Burnaby there was a rare opportunity to try to 'get it right' from the start, by deliberately including many different objectives, such as improved safety, sustainability, and an "all ages and abilities" approach. These street designs are already being built and more will be constructed as new developments are built in the town centres.

This integrated approach means that the street standards contribute to many ESS goals:

Green (Greenspace and Habitat) – Healthy and resilient ecosystems
- Large street trees and rain-garden vegetation provide habitat.

Burnaby's new street standards for town centres contribute to Burnaby being a modern-day green city by providing mobility for all, street trees/habitat, rain-gardens, and social spaces (2015 September).

Flow (Water Management) - Healthy and resilient watersheds.
- Rain-gardens provide a place for runoff to soak into the ground and be cleaned before entering creeks, improving water quality for fish.

Breathe (Climate and Air Quality) - A community resilient to climate change, with clean air and low carbon emissions.
- Encouraging walking and cycling, particularly in areas near SkyTrain and bus hubs, reduces carbon emissions.
- Trees capture carbon and provide shade.
- Rain-gardens help to absorb rainwater with less burden on pipes.

Live (Land Use Planning and Development) - A network of compact and complete communities, within a fabric of healthy ecosystems.
- The designs include seating, art and inviting places for people to mingle and interact.

Move (Transportation) - A walkable, bikeable, and transit-supported city that supports a healthy community and environment.
- The designs are intended to be delightful walking environments that encourage people to walk, cycle or take transit to their daily activities.

Prosper (Green and Inclusive Economy) - A prosperous economy that supports a healthy environment.
- People walking and cycling and enjoying the public spaces, generally contributing to a vibrant street scene, are more likely to visit local stores.

Read more here:
www.burnaby.ca/town-centre-streets

Build - Green Buildings and Energy

Living in Harmony with Nature
Harmony House is a "net zero energy" house in south Burnaby designed to produce more energy than it uses – including charging the family's electric car!

Harmony House is the name given to Les and Linda Moncrieff's home, nestled on a South Burnaby hillside with a view that looks out over the Fraser River. The two-storey, 4,700 square foot residence with a full basement and attached garage is part of the Equilibrium Sustainable Housing Demonstration Initiative, a CMHC program to encourage designers and builders to explore truly sustainable housing developments.

Harmony House, a single family home in south Burnaby designed to generate as much power as it uses each year.

This net-zero energy home produces as much energy as it consumes, annually, through energy conservation strategies and the use of renewable energy technologies. Charging of the family's electric car is included in this energy budget. Other sustainability features of the project include the use of renewable and recycled building materials, passive solar design, and water conservation measures, with a number of building materials sourced within Burnaby.

Prosper - Green and Inclusive Economy

Businesses 'Pledge' for Sustainability
The Burnaby Board of Trade's Pledge for A Sustainable Community is an online resource designed to help make it easier for businesses large and small to make smart environmental choices, save money and promote their companies. Companies that take the Pledge have access to many valuable resources, tips, and case studies to help them create a more sustainable workplace. They have the opportunity to share their successes, serve as role models, and pledge to take on new environmental challenges. The Pledge is becoming a significant part of the BBOT brand and has generated a lot of interest from other organizations throughout North America.

For more info please visit:
http://bbotpledge.ca

Pledge
FOR A SUSTAINABLE COMMUNITY
by the BURNABY BOARD OF TRADE

Gardens "Grow" Communities

Burnaby Food First helps to connect residents with extra garden space with others looking for a place to grow food. Sonya and Luci are two people who benefited from this service.

Gardens Connect Residents

When Sonya Govahi came to Canada in 2006, she found the produce tasteless - nothing like the fresh tomatoes, eggplant and herbs her family grew back home in Iran. Govahi figured the lack of flavour was because much of the produce found in Canadian grocery stores was not organic, so she planted a few things on her apartment balcony in Burnaby, but space was at a premium.

Meanwhile, Luci Baja, who lives in the D.C. Patterson heritage house on 18th Avenue, wanted to turn her yard into a community garden, but she wasn't much of a green thumb. The two belonged to different community groups - EPIC residents' association and Burnaby Food First. They learned about each other through a mutual connection and became the first match in a new program called Sharing Backyards.

Burnaby Food First, a local food security group, created the program to connect gardeners with residents who have surplus yard space.

"I like to garden because it makes me feel connected to the Earth," Govahi says, seated on Baja's porch swing. *"I don't have the knowledge, and it's a big space," Baja adds. "I just wanted to share it. The way of the future is community gardens, growing food ourselves, ... I just thought it was selfish, all this land we weren't using."*

From left, Luci Baja and Sonya Govahi are the first pair set up through Sharing Backyards, a new program from Burnaby Food First. Baja has extra space on her property, and Govahi is using it to grow food. The two will share the harvest.

Photograph by Jennifer Moreau. [1]

Burnaby Food First facilitates the Sharing Backyards matches, and the pairs come up with an agreement on how and when the space will be used and what will be done with the harvest. So far, Govahi has planted kale, lettuce, swiss chard, tomatoes, potatoes, cucumbers, beets, peas, beans, parsnips, squash, onion, garlic, chives and marigold.

The two women have been working together, digging the earth side by side, and Baja is learning a lot from Govahi, who plans to share her harvest in exchange for using the land. There are no rules with Sharing Backyards; each agreement is tailor-made for the pair involved.

"Sonya can come anytime she wants, but she lets me know," Baja says. "It's up to the homeowner to set those rules."

Govahi would like to see the program grow in Burnaby, so people meet their neighbours and grow their own food. Burnaby is very multicultural, she says, and there are a lot of people from different places. *"This will build a stronger community,"* she says. To get involved in the program, go to http://burnabyfoodfirst.blogspot.ca and click on Sharing Backyards. Then register for the group's online forum, and post a description of what you're looking for or what you're offering.

[1] This story and photo reprinted with the permission of The Burnaby Now, from: http://www.burnabynow.com/community/new-gardening-project-connects-residents-1.1184860#

High Rise Recycling Champions

How did seemingly "ordinary" citizens - residents and strata members of an older high-rise apartment building in Burnaby - become recycling super-heroes who are now sought-out to teach others the secrets of their success?

It all began rather inauspiciously with clogged and stinking garbage chutes in the 238-unit Park Avenue Towers in Metrotown. Solutions were not simple and initially residents were not interested in change. Then in 2013, a small team of volunteers from the strata began by creating signs and information about how to dispose of various kinds of recyclable items. This led to a building-wide garage sale, then a food scraps workshop with Burnaby staff, to prepare for the mandatory food scraps collection that would begin in 2015.

Once they had the right information, residents jumped on board. The residents became early adopters of Burnaby's Green Bin Multi Family Program for food scraps, volunteers collected materials not picked up in curbside recycling and donated reusable to local charities. In the first half of 2015 they diverted 37 tonnes (37,000 kg) of food waste from the landfill, and recycled StyroFoam and hundreds of batteries, fluorescent light tubes/bulbs, returnable containers, egg cartons and small appliances.

The High Rise Recycling Champions celebrating one of their awards at Burnaby Lake. From left to right: Chris Eng, Sharon Eng, Joyce O'Dougherty, and Martha Barbosa.

Park Place Towers was recognized with several awards, including from the City of Burnaby (2015 Environment Award) and the Rotary Club (certificate of appreciation for a successful Rotary Coats for Kids drive), and has been featured as champions in a video by Multi-Material BC. They also give tours and talks to people from other interested multi-family stratas about their success.

Manage - Governance, Education and Partnerships

Networks of Blue and Green

Initiated in 1972, Burnaby's Open Watercourse Policy has had far-reaching effects, directly influencing the ecology and form of the city as we know it now. Today there are over 90 open streams in the city, supported by many City programs for stream protection.

In 1972, Burnaby City Council passed a motion calling for "a procedure through which the preservation and conservation of streams might be accomplished". This seemingly simple act has had a profound effect on the ecology and form of the city. At the time, regulations around stream protection were not as strong as today, and many cities were enclosing streams in pipes to allow for easier and more profitable land development. Bucking this trend, Burnaby City Council directed that streams be left in an open condition wherever possible, and asked staff to inventory all existing watercourses. As a result, today there are over 90 open streams in Burnaby, many of which provide valuable recreation, as well as habitat. Burnaby's programs for stream protection include bylaws, an environmental review committee, water quality monitoring and spill response, city-initiated restoration projects, requirements for protection and enhancement with private and public development, education and outreach, and community partnerships with universities and streamkeeper groups.

These interrelated policies and programs have also allowed the City to progress from preserving the environment to actually regenerating ecosystems. One example is the daylighting of a section of Byrne Creek along with the development of new multi-family homes in the Edmonds community. For more information on the daylighting and regeneration of Byrne Creek, please visit www.burnaby.ca/byrnecreek.

Read more about the City's policies for environmental planning here.

Appendix E
Green Concepts Summary

What is Sustainability?
Sustainability has many different definitions. Simply put, it is the capacity of an entity – for example an ecosystem, society or organization – to keep itself going in perpetuity. This may involve cycles of disruption and renewal, but the basic processes that make the system what it is must be maintained.

This is where we are challenged today, in that many human activities are damaging the health of our supporting ecosystem on a global scale.

A sustainable society is one that supports the health of ecosystems, human communities, and future generations. Sustainable development involves a process toward this objective, of continuous, ongoing learning, improvement, and a realignment of community goals and practices, to be more healthy, livable and resilient.

Sustainability is usually understood to encompass three interrelated systems: the environment, society and the economy, which are functionally nested one within the other, as shown in the diagram below (**Figure E1**).

Sustainability itself can be represented as the area in which these three spheres overlap (**Figure E2**).

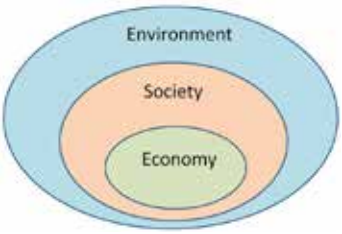


***Figure* E1.** *Nested Systems*

***Figure* E2.** *Spheres of Sustainability*

Ecosystem Model of Sustainability
In nature there is no such thing as "waste". Instead, outputs from one organism become resources for another. For example, trees provide habitat for birds, mammals and bugs, as well as materials and places for people. When the tree or leaves die, organisms like bugs, worms and fungi on the forest floor feed on them, creating rich soil for new trees to grow in (**Figure E3**).

Unfortunately, much of our society instead takes raw materials, makes things and then discards them, in a one-way process that creates toxic and long-lasting waste (**Figure E3**). To be sustainable, we need to follow Nature's rules and re-use materials and energy with 'closed loops' that produce little or no waste.

Toward a Regenerative Community
Practices that seek to reduce harm to the environment, like first-generation "green buildings", are an improvement, as they reduce energy needs and use less toxic materials. However, we need to go further, to a point where there is 'no harm' and even to a point where there is a net benefit to the environment, to regenerate ecosystems, value and community well-being (**Figure E4**). Regenerative development is becoming more common, such as in the form of ecosystems restored alongside new urban development, energy systems that convert organic waste to fuel, and products that can be taken apart to re-use their components at the end of their useful life.

Designing With Nature
True sustainability depends on how well we can model human communities and systems on these natural principles. Moving to having a net benefit on our environment is the next "big step" we can make as a society.

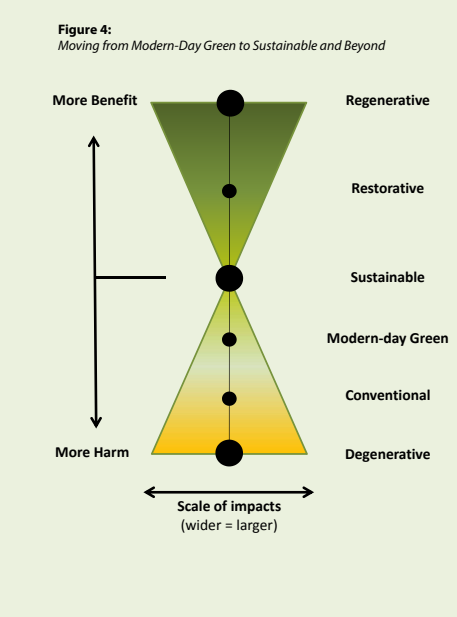


***Figure* E4.** *Moving beyond 'sustainable' toward 'regenerative' development*

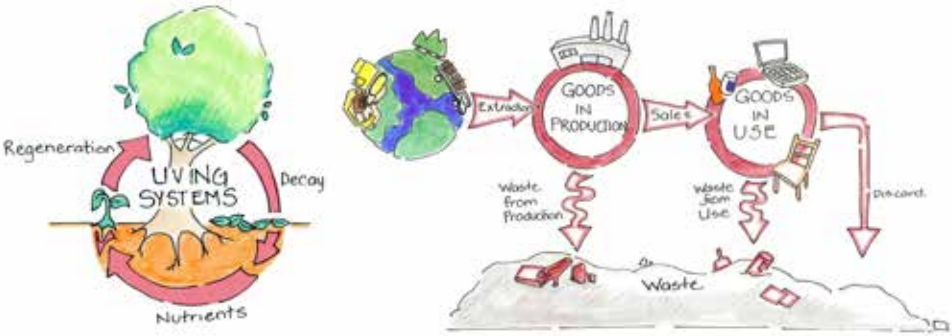


***Figure* E3.** *Nature has 'closed loops' with no waste (left), in contrast to human societies (right)*

The Value of Nature
Most people feel some emotional connection with nature, and would agree that we rely on "goods" like wood from trees to build homes, and "services" like oxygen produced by plants. Yet until recently these benefits have been largely underappreciated, in part because they were assumed to be "free". This had led to decision making that takes into account only the short term interests of society and the economy, and has undermined the health of ecosystems which in fact provide our 'life support system'.

Ecosystem Services
Ecosystem services are **the benefits people obtain from ecosystems.** They include provisioning services such as food, water, timber, and fiber; regulating services that affect climate, floods, disease, wastes, and water quality; cultural services that provide recreational, aesthetic, and spiritual benefits; and supporting services such as soil formation, photosynthesis, and nutrient cycling[1] . See **Figure E5.**

There are now many efforts underway worldwide to estimate the value of ecosystem services. Such studies are even occurring at the city level. For example, BC's Lower Mainland ecosystems were estimated to provide services worth **$5.4 billion** per year[3]. And urban forest studies are helping to create a sound rationale for investing in trees in our cities. Some of the benefits of urban trees are shown in **Figure E6.**

Even though the valuation of ecosystem services is not a perfect science, it is helping to ensure that the benefits of healthy ecosystems are better recognized in policy and decision making.

***Figure* E5.** *Types of Ecosystem Services[2]*

***Figure* E6.** *Benefits of Urban Trees (*values for Metro Vancouver region[4])*

[1] Source: www.millenniumassessment.org
[2] Graphic used with permission from: www.csir.co.za/nre/ecosystems/ProEcoServ.html
[3] David Suzuki Foundation 2010: Natural Capital in BC's Lower Mainland.
[4] Data Source: TD Economics,2014: The Value of Urban Forests in Cities Across Canada

Networks of Green and Bue

Burnaby has done a great job of preserving greenspace, including large areas like Burnaby Mountain, Burnaby Lake, Deer Lake and Central Park. Large intact habitats provide homes for more species of plants and animals, including those that require larger areas and/or that are more sensitive to human disturbance. Protected greenspace forms 25% of Burnaby's land, one of the largest percentages among medium sized cities in North America.

There are few remaining opportunities for creating new large protected areas of greenspace [5] in Burnaby. The next big opportunity for greenspace and ecosystem health in Burnaby is to **connect and enhance** the many existing protected areas.

Habitat Corridors

Connections between ecosystems are important to allow wildlife to move into new areas, in order to find new food sources and mates. In cities, streets, traffic and buildings can act as barriers to this movement. For example, picture a squirrel trying to cross a busy four-lane street! This means that a preserved patch of forest becomes like an "island" when it is surrounded by urban development, allowing fewer species of plants and animals to survive there.

We can help by creating habitat corridors to connect these "islands". Corridors can include streams, ravines and riparian areas, like those shown in **Figure E7.** Multi-use cycling and walking trails can also function as habitat corridors when they include native vegetation planted alongside. Even small areas like vegetated roofs and backyard gardens with native plants can provide 'stepping stones' for species like birds to rest and forage on their way to larger areas.

Enhancing Existing Habitats

Ecosystems in cities are subjected to many stresses. For example, invasive species, which are not native to the local ecosystem, cause environmental damage by spreading aggressively and "taking over" a site, so that native species cannot survive. Some examples include Japanese knotweed, English ivy and American bullfrog.

Other stresses can include soils damaged or polluted from previous activities on a site, and water pollution of streams caused by road runoff.

Preserving greenspace and ecosystems is the first step; the next is to work to improve their health, such as by cleaning up pollution, removing invasive plants and planting native species.

Ecosystems can be enhanced when sites are developed, a common condition of development approval in Burnaby. The City also partners with others to restore ecosystems on City lands. The ESS includes strategies to build on these initiatives, and to develop an Ecosystem Health Strategy to take stock of the health of our ecosystems and identify new opportunities for enhancement.

Figure E7. *Burnaby's waterways help to connect habitats*

[5] This is because Burnaby is a maturing city with few large areas of undeveloped greenspace remaining. However, smaller areas are still considered for acquisition as opportunities come up, for example with development or changes in land use.

Appendix F
Guiding Principles

ESS GUIDING PRINCIPLES
Under the guidance of the ESS Steering Committee, Guiding Principles were developed to help steer the ESS. These Guiding Principles are intended to:

- be clear, concise, simple and action-oriented;
- apply to all actions;
- be separate from, and broader than, strategies, actions and other policy direction(s);
- help guide the project through to completion; and
- help communicate the City's values, and ensure a consistent approach in the development and implementation of the ESS.

Ecosystem Health

1. We recognize that we need healthy ecosystems for our survival, health and well-being [i], and that species and ecosystems also have intrinsic value (in their own right) [ii] .
2. We aim to "live off the interest" to ensure continued ecosystem health and resilience.
3. We undertake and encourage ecosystem based management [iii], protect the health of existing ecosystems, and actively enhance and restore degraded ecosystems.

Integration of Systems

4. We recognize that **economic** vitality, **environmental** health, **social** equity and **human health** are all interrelated and mutually dependent.
5. We seek synergies rather than trade-offs, and strive for solutions with multiple benefits.

Connections

6. We acknowledge that local actions can have far-reaching impacts.
7. We recognize that the well-being of our community is linked with the (ecological, social and economic) well-being of the region, the province, the nation and the world.

Wise Use of Resources

8. We proactively manage our resources by seeking creative solutions and prioritizing actions that create holistic [iv] and long term value for our community (ecological, social and economic).

The Long View

9. We make decisions and act today with the long-term resilience of our community and ecosystems in mind, and prepare ourselves for changes to come.
10. We recognize our responsibility for the well being of future generations.

Leadership

11. We lead by example, learn from others, and foster leadership by community stakeholders.
12. We work to encourage and reward positive behaviour.

Collaboration

13. We work together to achieve our shared goals, across City departments, business sectors, public interests, institutional programs, neighbouring municipalities and other levels of government.

Engagement

14. We build trust by fostering internal and external relationships, partnerships, and networks.
15. We engage in and support education, building community awareness, responsibility and participation.
16. We employ and promote diverse methods of community engagement.

Evaluation and Improvement

17. We commit to continual improvement through adaptive management [v] and building on the success of others.
18. We monitor and evaluate our performance toward our goals with targets and indicators [vi], and adjust our approach accordingly.
19. We clearly communicate our performance to stakeholders and the public.

May 23, 2013

---

[i] Benefits people obtain from ecosystems are known as "ecosystem services". These include provisioning services such as food and water; regulating services such as flood and disease control; cultural services such as spiritual, recreational, and cultural benefits; and supporting services such as nutrient cycling that maintain the conditions for life on Earth. (Source: Millennium Ecosystem Assessment)

[ii] Intrinsic value is generally defined as the inherent worth of something, independent of its value to anyone or anything else. For example, the United Nations World Charter for Nature (1982) notes: "Every form of life is unique, warranting respect regardless of its worth to man."

[iii] Ecosystem-based management is an integrated approach to management that considers the entire ecosystem, including humans. The goal of ecosystem-based management is to maintain an ecosystem in a healthy, productive and resilient condition so that it can provide habitat as well as the services humans want and need. Ecosystem-based management differs from approaches that focus on a single species, sector, activity or concern; it considers the cumulative impacts of different sectors (Source: U.S. Commission on Ocean Policy and the Pew Oceans Commission, 2005).

[iv] Holistic means "relating to or concerned with wholes or with complete systems rather than with the analysis of, treatment of, or dissection into parts."

[v] Adaptive Management can be defined as a systematic process for continually improving policies and practice by learning from outcomes of operational programs, and normally consists of a cyclical process of **Assessment, Design, Implementation, Monitoring, Evaluation, and Adjustment** (linking back again to Assessment… and so on).

[vi] Targets and indicators are themselves flexible, and are periodically re-evaluated, to adjust to new information.

Appendix G
Relationships Between ESS, SSS, EDS Goals and Strategies

The ESS is the third and final component of the City of Burnaby's suite of sustainability strategies, following upon the Social Sustainability Strategy (SSS), completed in 2011, and the Economic Development Strategy (EDS), completed in 2007. These plans, although completed separately, are closely related and overlap in many areas. Furthermore, the ESS goals themselves are closely interrelated, and as such each strategy supports more than one goal. To reflect these interrelationships, the table on the following page illustrates the relative degree to which each ESS strategy supports the other nine goals – in addition to the 'parent' goal – and the overall suite of goals in the SSS and EDS.

This table is intended to illustrate how closely the components of the ESS, SSS and EDS are related, and can provide a resource for ESS implementation, acting as a reminder of multiple benefits that may be achieved through implementing a particular strategy.

Interpreting the Table:

- Strong/direct support for a particular goal, by a Strategy, is indicated by dark shading and an "X".
- Moderate/indirect support for a particular goal, by a Strategy, is indicated by light shading and an "o".
- Little or no overlap/support between a Strategy and Goal is indicated by no shading/notation.
- The 'parent' goal for each strategy is blacked out, since its support is a given.

This can be illustrated with the following example shown below, using Build Strategy #2, which is also noted as a "NEW Big Move": *Improve building design and construction to meet higher standards of environmental performance.*

Goal	Strategies		Other Goals:												
			GREEN	FLOW	BREATHE	LIVE	MOVE	BUILD	PROSPER	NOURISH	CONSERVE	MANAGE	SSS	EDS
BUILD	1. Big Move IN PROGRESS #6 – Meet updated energy performance building code requirements for new buildings.				X	o	o		X			o	o	X
	2. NEW Big Move #3 – Improve building design and construction to meet higher standards of environmental performance.		X	X	X	X	o		o	o	X	o	o	X
	3. Make existing buildings more 'green' – so they use less energy, less water, produce less GHG emissions, use healthy (non-toxic) and recycled materials, and reduce construction waste.		o	o	X	o			o		o	o	o	
	4. Reduce building demolition and construction waste.		o		o		o		o		X	o		o
	5. Share and/or re-use energy and water between buildings where possible.			X	X	o			o		x	o		o
	6. Encourage a shift to renewable energy for buildings where possible.				X	o			o			o		o

Build Strategy 2 **strongly** supports the following goals, as shown by the darker shading and "X":

- **Green** – by reducing pollution and helping to regenerate ecosystems, for example with native plant landscaping and restored streams on or nearby the site.
- **Flow** – by helping to conserve water, such as with water saving fixtures, and mimicking natural flows with on-site rainwater management features like rain gardens and green roofs.
- **Breathe** – by reducing greenhouse gas emissions through energy efficient building designs and systems.
- **Live** – with building and landscape features that help to encourage walking, cycling and interacting with nature.
- **Conserve** – by reducing waste, for example by re-using (salvaged) materials, using materials with recycled content, and reducing construction and demolition waste.
- **EDS goals** – including helping to support environmental technology and services (in green buildings) and helping to create a greener community.

Build Strategy 2 **moderately** supports the following goals, as shown by the lighter shading and "o", in the following ways:

- **Move** – with the opportunity to provide bicycle facilities and electric vehicle charging.
- **Prosper** – by supporting the green business sector in Burnaby such as businesses providing recycled building materials and green building consulting services.
- **Nourish** – with the opportunity to provide food gardening facilities in new development.
- **Manage** – by demonstrating leadership in City buildings.
- **SSS goals** – by helping to reduce homeowner energy costs with more efficient design, and to make buildings healthier.

Relationship Between ESS Strategies, ESS Goals and SSS/EDS (Strength of Support*)

Goal	Strategies	Other Goals: GREEN	FLOW	BREATHE	LIVE	MOVE	BUILD	PROSPER	NOURISH	CONSERVE	MANAGE	SSS	EDS
GREEN	1. NEW Big Move #1 - Review and consider new policies, plans and programs to protect, connect and enhance Burnaby's ecosystems.		X	X	X	X	X		o		X	o	o
	2. Protect and enhance habitat on public and private lands.		X	X	X	o	o		o		o	o	o
	3. Connect existing high value habitat with habitat corridors.		X	X	X	X	o				X	o	
	4. Encourage development that respects and reduces the impact to our ecosystems.		X	o	o		o				o	o	
	5. Promote the value of habitat and ecosystems to human well-being.		X	X	X			o	o		o	o	o
	6. Reduce the environmental and economic impacts of invasive species.		X	X			o	X	o		X	o	
	7. Ensure Species and Ecosystems at Risk (SEAR) are considered in planning, development and habitat enhancement, on public and private lands.		X	o	o	o	o				o	o	
FLOW	1. Big Move IN PROGRESS #1 - Manage rainwater to restore and mimic natural flows and quality.	X		X	X	X	X	o			o	o	o
	2. Protect, restore and improve aquatic ecosystems like ponds, lakes, streams, wetlands and marine areas.	X		X	X		o				o	o	
	3. Protect and improve water quality in aquatic ecosystems like ponds, lakes, streams, wetlands and marine areas.	o			o	X	o			X	o	o	
	4. Big Move IN PROGRESS #2 - Conserve water in the home, garden, workplace and community.	o		X	o		X	o	o		o	o	
BREATHE	1. Big Move IN PROGRESS #3 – Reduce community greenhouse gas (GHG) emission rates, including in the areas of transportation, buildings, district energy and waste.	o			X	X	X	o	o	X	X	o	o
	2. NEW Big Move #2 – Improve resilience to climate change effects by assessing risks and seeking and acting on opportunities to protect the community and ecosystems from anticipated impacts.	X	X		X	o	X	o	X		o	X	o
	3. Reduce emissions and health impacts of air pollutants (other than greenhouse gases).	o	o		o	X	o	o		o	X	X	o
	4. Reduce dependence on fossil fuels such as oil and gas.	o	o		X	X	X	o	o	o	X	o	
LIVE	1. FUTURE Big Move #1 - Create a more diverse, vibrant, resilient and resource efficient city from the neighbourhood level up.	X	X	X		X	X	X	o	o	o	X	X
	2. Strengthen the network of complete, compact, and walkable neighbourhoods served by transit.	X	X	X		X	o	o	o		o	X	X
	3. Big Move IN PROGRESS #4 - Create accessible outstanding outdoor public spaces that encourage active transportation, socializing and interacting with nature.	X	X	o		X	X	o			o	X	o
	4. Integrate more green space and nature into urban areas, including Town Centres and Urban Villages.	X	X	o		X	X	o	o		o	o	o
MOVE	1. Big Move IN PROGRESS #5 – Develop and implement green transportation policies that create vibrant streets, reduce pollution and support, healthier, more active lifestyles.	X	X	X	X		o	o			o	X	X
	2. Make cycling and walking easy, safe and comfortable.	o	o	X	X		o			o	o	X	o
	3. Improve public transit.	o	o	X	X		o	o			o	X	X
	4. Provide programs to encourage and reward a shift towards walking, cycling, and transit.	o	o	X	X		o	o			o	o	o
	5. Reduce impacts of vehicles on environmental health, personal safety and livable neighbourhoods.	o	o	X	X		o	o			o	o	o
	6. Transition to more efficient (including zero-emissions) vehicles and more efficient use of vehicles.	o	o	X	X		X	o	o		o	o	
	7. Reduce the environmental impacts of transporting goods.	X	X	X	X			o	o	o	o	o	
BUILD	1. Big Move IN PROGRESS #6 – Meet updated energy performance building code requirements for new buildings.			X	o	o		X			o	o	X
	2. NEW Big Move #3 – Improve building design and construction to meet higher standards of environmental performance.	X	X	X	X	o		o	o	X	o	o	X
	3. Make existing buildings more 'green' – so they use less energy, less water, produce less GHG emissions, use healthy (non-toxic) and recycled materials, and reduce construction waste.	o	o	X	o			o		o	o	o	
	4. Reduce building demolition and construction waste.	o		o		o		o		X	o		o
	5. Share and/or re-use energy and water between buildings where possible.		X	X	o			o		x	o		o
	6. Encourage a shift to renewable energy for buildings where possible.			X	o			o			o		o
PROSPER	1. FUTURE Big Move #2 – Work with the Burnaby Board of Trade, post-secondary institutions and other organizations to expand Burnaby's green economic sector and improve environmental performance of businesses.	o	X	X	o	X	X		o	X	X	o	X
	2. Work with the Burnaby Board of Trade, post-secondary institutions, and other organizations to promote green businesses and celebrate their successes.	o	o	o		o	o		o	o	X	o	X
	3. Work with the Burnaby Board of Trade, post-secondary institutions, and other organizations to strengthen the business sector that facilitates recycling and reuse.			X	o	X	o		o	X	o		X
NOURISH	1. Big Move IN PROGRESS #7 – Improve food system sustainability and security to support local food production, distribution and consumption.	o	o	o	X	o	o	o		X	X	X	o
	2. Develop a culture that celebrates and supports local, organic and healthy food.				o			o		o	X	X	o
	3. Encourage citizens to grow and process food within the City.	o		o	X	o	o	o		o	o	X	
CONSERVE	1. Reduce material consumption by citizens and businesses.	o	o	o		o	o	X			X	o	o
	2. Strengthen the sharing economy to use existing materials and resources more efficiently.			o	o	X	X	X	o		o	o	o
	3. Big Move IN PROGRESS #8 – Expand waste reduction, recycling and food scraps programs.	o	o	X	o		X	X	X		X	o	o
	4. Reduce and eliminate the sale and use of hard-to-recycle materials.	o	o	o			o	X			X		o
	5. Explore new opportunities for using waste as a resource (both materials and energy).			X	o			o	o		o		o
MANAGE	1. Educate citizens about ecology and sustainability.	o	o	o	o	o	o	o	o	o		o	o
	2. Big Move IN PROGRESS #9 – Explore innovative ways to engage the public on environmental issues.	o	o	o	o	o	o	o	o	o		X	o
	3. NEW Big Move #4 – Demonstreate leadership in sustainability through City facility and operations management by reducing energy and GHG emissions, conserving water, reducing and diverting waste and enhancing ecosystems.	X	X	X	o	o	X	o	o	X		o	X
	4. NEW Big Move #5 – Improve sustainability management through enhanced City business practices, system development, and leadership.	o	o	o	o	o	o	o	o	o		X	o
	5. Develop programs to encourage and reward people who develop and try new environmental practices.	o	o	o	o	o	o	o	o	o		o	o
	6. Develop and nurture community partnerships.	X	X	o	X	o	o	o	X	X		X	o

**Darker shading (and "X") indicates strong/direct support; light shading (and "o") indicates moderate/indirect support.*

Burnaby Environmental Sustainability Strategy

A Plan for Burnaby's Green Future

City of Burnaby

City of Burnaby Planning Department, 4949 Canada Way, Burnaby V5G 1M2