



GREENEST CITY

2020 ACTION PLAN

2013-2014 IMPLEMENTATION UPDATE



PROGRESS HIGHLIGHTS



DECREASE
-IN-
COMMUNITY GREENHOUSE GASES
SINCE 2007

23,400
NEW TREES PLANTED
SINCE 2010



-TRIPS MADE BY-
BIKE, WALKING, OR TRANSIT



NEW LOCAL FOOD AND GREEN JOBS
SINCE 2010



ELECTRIC VEHICLE CHARGING STATIONS



INCREASE IN NEIGHBOURHOOD FOOD ASSETS
SINCE 2010



DECREASE IN SOLID WASTE SENT TO LANDFILL OR INCINERATOR
SINCE 2008



18% DECREASE
-IN-
TOTAL WATER CONSUMPTION
SINCE 2006



265km OF BIKE NETWORK IN VANCOUVER

ACKNOWLEDGEMENTS

Thank you to all staff and members of the community for their hard work and for contributing their stories.



For More Information:

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DASH-BOARD

GOAL AND TARGETS	INDICATOR	BASELINE	2013	% CHANGE	IMPROVED OVER BASELINE	2020 TARGET
GREEN ECONOMY						
Target 1: Double the number of green jobs over 2010 levels by 2020.	Total number of local food and green jobs	16,700 jobs (2010) ¹	19,900 green jobs	19%	Yes	33,400 jobs
Target 2: Double the number of companies that are actively engaged in greening their operations over 2011 levels, by 2020.	Percent of businesses engaged in greening their operations	5% of businesses engaged (2011)	New survey to be conducted early 2015	--	--	10% of businesses engaged
CLIMATE LEADERSHIP						
Target: Reduce community-based greenhouse gas emissions by 33% from 2007 levels by 2020.	Total tonnes of community CO ₂ e emissions from Vancouver	2,755,000 tCO ₂ e (2007)	2,585,000 tCO ₂ e	-6%	Yes	1,846,000 tCO ₂ e
GREEN BUILDINGS						
Target 1: Require all buildings constructed from 2020 onward to be carbon neutral in operations.	Total tonnes of CO ₂ e from residential and commercial buildings	1,145,000 tCO ₂ e (2007)	1,110,000 tCO ₂ e	-3%	Yes	920,000 tCO ₂ e
Target 2: Reduce energy use and GHG emissions in existing buildings by 20% over 2007 levels.						
GREEN TRANSPORTATION						
Target 1: Make the majority of trips (over 50%) by foot, bicycle and public transit.	Per cent mode share by walk, bike and transit	40% of trips (2008)	44% of trips (2012) ²	10% (2012) ²	Yes	50% sustainable mode share
Target 2: Reduce average distance driven per resident by 20% from 2007 levels.	Total vehicle km driven per person	Not available	New survey to be conducted late 2014	--	--	20% below 2007 levels
ZERO WASTE						
Target: Reduce total solid waste going to the landfill or incinerator by 50% from 2008 levels.	Annual solid waste disposed to landfill or incinerator from Vancouver	480,000 tonnes (2008)	424,000 tonnes (2012) ³	-12%	Yes	240,000 tonnes
ACCESS TO NATURE						
Target 1: Ensure that every person lives within a five minute walk of a park, greenway or other green space by 2020.	Per cent of city's land base within a 5 min walk to a green space	92.6% (2010)	92.7%	0.1%	Yes	95% ⁴
Target 2: Plant 150,000 additional trees in the city between 2010 and 2020.	Total number of additional trees planted	-- (2010)	23,400 trees	--	Yes	150,000
LIGHTER FOOTPRINT						
Target: Reduce Vancouver's ecological footprint by 33% over 2006 levels.	Proxy: Number of people empowered ⁵ by a City-led or City-supported project to take personal action in support of a Greenest City goal and/or to reduce levels of consumption (cumulative)	600 people (2011)	6,700 people	1117%	Yes	To be determined
CLEAN WATER						
Target 1: Meet or beat the most stringent of British Columbian, Canadian and appropriate international drinking water quality standards and guidelines.	Total number of instances of not meeting drinking water quality standards	0	0	0	Yes	0
Target 2: Reduce per capita water consumption by 33% from 2006 levels.	Total water consumption per capita	583 L/person/day (2006)	480 L/person/day	-18%	Yes	390 L/person/day
CLEAN AIR						
Target: Meet or beat the most stringent air quality guidelines from Metro Vancouver, British Columbia, Canada, and the World Health Organization.	Total number of instances of not meeting of air quality standards for ozone, particulate matter (PM 2.5), nitrogen dioxide and sulfur dioxide from both the Kits and Downtown stations combined ⁶	27 instances (2008)	0 instances ⁷	-100%	Yes	0
LOCAL FOOD						
Target: Increase city-wide and neighbourhood food assets by a minimum of 50% over 2010 levels.	Total number of neighbourhood food assets ⁸ in Vancouver	3,340 food assets (2010)	4,332 food assets	30%	Yes	5,158

¹ The 2013 Green Jobs Study refined the definition and measurement of green jobs (due most significantly to changes to the long form census and the data available from Statistics Canada). This resulted in a change to the 2010 baseline: an increase of 12 per cent. The method and approach have been reviewed by Ernst & Young, and targets will be based on this method going forward.

² New survey to be conducted late 2014. There has been a 10 per cent change from the baseline of 40 per cent mode share by foot, bike, and transit, and a four per cent increase in mode share.

³ Solid waste data is compiled first at a regional level and then at the city level. As a result, Vancouver's data is always one year behind the reporting period.

⁴ 5% of the city's land-base is industrial land area, and is not considered part of the target.

⁵ "People empowered to take action" are defined as those who are enabled to change their lifestyle or are implementing a community project that helps Vancouver achieve its Greenest City goals as a result of support provided by a City-led or City supported program. Examples include learning to preserve food or ride a bike through a community centre class, as well as people involved in projects supported by the Vancouver Foundation and City of Vancouver Greenest City fund. The definition excludes people participating in a dialogue or consultation, attending an event, using infrastructure (e.g., bike lanes, food scraps collection), or receiving a personal incentive (e.g., home energy retrofits).

⁶ Air quality metrics are measured by Metro Vancouver from data from two monitoring stations in Vancouver: one in Kitsilano and one at Robson Square. Four indicators of air quality are used for comparison to world standards. They are: 24 hour average particulate matter (PM 2.5) concentration >25 µg/m³, one hour average nitrogen dioxide (NO₂) concentration >200 µg/m³, 24 hour average sulfur dioxide (SO₂) concentration >20 µg/m³, and eight hour ground-level ozone (O₃) concentration >52 ppb.

⁷ The BC government plans to set more stringent SO₂ and NO₂ objectives in the future, and Metro Vancouver will review its SO₂ objectives in 2014. New exceedances could occur next year, and air quality improvement remains a priority.

⁸ Food assets include: number of community garden plots, farmers markets, community orchards, community composting facilities, community kitchens, community produce stands, and urban farms.

OUR PROGRESS

AWARDS

2013 World Wildlife Fund Earth Hour City Challenge: Global and People's Choice Earth Hour Capital

2013 World Green Building Council Global Government Leadership Award: Best Overall Green Building Policy

2014 Federation of Canadian Municipalities Green Champion Award (Municipal)

2013 Government Green Fleet Award: Greenest Municipal Fleet in Canada

2013 Canadian Association of Municipal Administrators: Willis Award for Innovation (for CityStudio program)

2014 Federation of Canadian Municipalities Sustainable Communities Award: Transportation (for Electric Vehicle Charging Infrastructure)

2014 Mediacorp Canada Inc.: Canada's Greenest Employers

2013 Tides Canada Top 10 Award: CityStudio

2013 Ashoka U Exchange and Cordes Foundation: Innovation Award (for CityStudio program)

2013 ASHRAE Milton W. Garland Commemorative Refrigeration Award: South East False Creek Neighbourhood Energy Utility

This update is organized according to the ten goals of the *Greenest City 2020 Action Plan*, which can be found at: vancouver.ca/GreenestCityActionPlan

OVERVIEW

In 2011, Vancouver adopted the goal of becoming the greenest city in the world by 2020.

The Greenest City 2020 Action Plan (GCAP) aims to prepare Vancouver for the potential impacts of climate change, while building a vibrant community, a thriving green economy, and a greener, healthier city.

Hundreds of projects across the city are reducing energy use, supporting alternative modes of transport, decreasing waste and water use, and improving access to nature and local food. Often these projects support

multiple Greenest City goals at once. For example, energy audits for rental buildings help move towards achieving the Green Buildings, Green Economy, Clean Water, and Lighter Footprint goals.

Thanks to the combined efforts of the entire community, Vancouver was named the 2013 Earth Hour Capital by the World Wildlife Fund Earth Hour City Challenge. This award recognizes the efforts of every resident, business, and community group that has taken action on a Greenest City initiative since our journey began in 2011.

“Together we created not just a vision, but also a realistic and measurable path to get there. City staff are working on implementing actions in the plan that fall within the City’s jurisdiction. As citizens, we all play a role in ensuring the ten goals are achieved.”

From Greenest City 2020 Action Plan





1 GREEN ECONOMY

GOAL: SECURE VANCOUVER'S INTERNATIONAL REPUTATION AS A MECCA OF GREEN ENTERPRISE

TARGETS:

- Double the number of green jobs over 2010 levels by 2020.
- Double the number of companies that are actively engaged in greening their operations over 2011 levels by 2020.

 **NEW LOCAL FOOD AND GREEN JOBS SINCE 2010**

INDICATOR	BASELINE	2013	% CHANGE
Total number of green jobs	16,700 jobs (2010)*	19,900 jobs	+19%
Per cent of businesses engaged in greening their operations	5% of businesses engaged (2011)	New survey to be conducted early 2015	

* The 2013 Green Jobs Study refined the definition and measurement of green jobs (due most significantly to changes to the long form census and the data available from Statistics Canada). This resulted in a change to the 2010 baseline: an increase of 12 per cent. The method and approach have been reviewed by Ernst & Young, and targets will be based on this method going forward.

Green building design and construction jobs increased 50% between 2010 and 2013, driven by demand in response to the City's green building programs and policies.

2013-2014 SUCCESSES:

GROWING GREEN JOBS THROUGH GREENEST CITY INITIATIVES

Green and local food jobs in Vancouver have increased 19 per cent between 2010 and 2013. One in 20 people in Vancouver work in a green or local food-related industry. In addition to consumer demand enabled by innovation and entrepreneurship, Vancouver's ambitious Greenest City vision has helped to sustain this remarkable rate of growth.

For example, green building design and construction jobs increased 50 per cent between 2010 and 2013. While international demand for Vancouver's globally recognized green building talent was strong, much of the growth came from local demand in response to the City's award-winning green building programs and policies. In addition, local food jobs increased 21 per cent between 2010 and 2013, driven by strong consumer preferences for healthy and locally produced food. City programs and policies have also facilitated greater access to local food by supporting urban farms, farmers markets, street food vendors, and craft breweries. Similarly, green transportation-related jobs increased 19 per cent between 2010 and 2013. While funding for public transit remained stable, growth was fuelled by public demand for electric vehicles, made more feasible by the City's investments in charging infrastructure and policies requiring electric vehicle-ready new construction.

BUILDING VANCOUVER'S BRAND AS A MECCA OF GREEN ENTERPRISE

The Vancouver Economic Commission (VEC) supported 36 green economy companies at the GLOBE 2014 Conference in Vancouver. Along with other supporters, including BC Innovation Council, Foresight Cleantech Accelerator Centre, and the National Research Council of Canada, VEC's support enabled promising BC companies to host their own stand at the PowerHaus Pavilion on GLOBE's tradeshow floor, and to pitch their innovative technologies and solutions in a "grizzly den" format to over 400 investors from around the world. In the lead up to GLOBE, VEC also worked with Canada's Department of Foreign Affairs, Trade and Development to provide tours for three groups of international business delegates who visited nine local companies in the green building, green transportation, and materials management sectors.

The VEC also collaborated with eight other green economy-oriented events in 2013 to help build Vancouver's reputation as a mecca for green enterprise, including the Canada Green Building Council's National Conference, Eco Fashion Week, and UBC's Partnerships for Canada's Clean Economy 2014 conference.



CHALLENGES

While growth rates have been remarkable so far, sustained efforts are needed to continue this growth, and advance the positive climate for green economy businesses. Innovative policies from the City, programs from VEC, and partnerships with other levels of government, academia, businesses, and Vancouver residents are all needed to accelerate green entrepreneurship, economic growth, and prosperity.

Furthermore, engaging businesses in greening their operations is a challenge to do effectively. Businesses often believe the task will be too difficult or require more resources and time than they can afford. Collaborative approaches are required to engage business associations and those providing sustainability solutions, and deliver recognition and support to businesses that are on the road to greener practices.

“In Vancouver, we found a special combination of things we didn’t find anywhere else and it got us really excited. There is a feeling of looking forward, a commitment to excellence, of innovation and sustainability.”

Chris Anderson, curator of TED, quoted in the Vancouver Sun, February 5, 2013





2

CLIMATE LEADERSHIP

GOAL: ELIMINATE DEPENDENCE ON FOSSIL FUELS

TARGETS:

- Reduce community-based greenhouse gas emissions by 33% from 2007 levels.



**DECREASE IN
COMMUNITY
GREENHOUSE
GASES** SINCE 2007

INDICATOR	BASELINE	2013	% CHANGE
Total tonnes of community CO ₂ e emissions from Vancouver	2,750,000 tCO ₂ e (2007)	2,585,000 tCO ₂ e	-6%

tCO₂e = tonnes of carbon dioxide equivalent (GHGs)

416,000 tCO₂e was captured from the landfill in 2013. This is equivalent to taking 104,000 cars off the road for a year.

2013-2014 SUCCESSES:

EXPANDED EXISTING DISTRICT ENERGY SYSTEMS

The Southeast False Creek Neighbourhood Energy Utility (NEU) has demonstrated that large scale renewable energy projects using current technologies can be economically viable if planned and executed well. The NEU uses waste heat from a municipal sewer line to provide energy for heat and hot water for 3.5 million square feet of building space, an increase of 30 per cent over 2012.

This system is expanding, with service area extensions planned to the education hub and campus on Great Northern Way. Future district energy systems located downtown and in the Cambie Corridor are in the works. To further their development, the City is identifying utility development partners and securing agreements from large developments to connect their buildings to these systems.

IMPROVING RESILIENCE TO SEA LEVEL RISE AND FLOODING

2013 was a record-breaking year for flooding in many parts of Canada. Vancouver completed the first phase of a Coastal Flood Risk Assessment (CFRA) in 2013: the first of its kind in Canada to be done at a city level. The City is now working with other municipalities on a regional approach to planning for flood-proofing.

Phase 1 of the CFRA used computer models of storms and floods to identify the risks to residents and property from rising sea levels by the year 2100. Phase 2, now underway, will identify and prioritize ways to improve our ability as a community to adapt and recover quickly from flooding events.

This preparedness is known as resilience planning. Strategies can be physical (such as building dikes or adaptive beach landscapes) or social (such as strengthening neighbourhood connections to improve resident preparedness).

“Local governments around the world are striving to create attractive, smart cities while tackling a multitude of urgent environmental challenges. Vancouver can serve as a role model for how cities can engage residents in these efforts, thereby accelerating the transition towards low carbon development. I applaud Vancouver’s vision and innovation.”

Jim Leape, Director General of WWF International



CAPTURING ENERGY AT THE LANDFILL

Methane is a powerful greenhouse gas and a by-product of landfill waste. At the Vancouver Landfill, this gas is captured to heat buildings. Continual upgrades to the system will increase the capture efficiency each year. In 2013, 416,000 tonnes of greenhouse gas emissions (CO₂e) were captured: equivalent to taking 104,000 cars off the road for a year.

CHALLENGES

Pipeline expansions, such as the proposed Trans Mountain project, run counter to the Climate Leadership goal to eliminate dependence on fossil fuels. The increase in oil sands production facilitated by these projects will impact greenhouse gas emissions on a global scale. The National Energy Board has said that they do not intend to consider issues of climate change and the long-term impacts of bitumen shipped by the new pipeline. This will make it increasingly challenging to meet national emission reduction commitments and will exacerbate climate-related damage to our community due to rising sea levels and coastal flooding.

Many of the Greenest City goals, including greenhouse gas reduction, rely on factors outside of the City's control. For instance, Provincial policy and the carbon tax help make it possible for cities to take climate action. Also, because our power supply is mainly hydroelectric, annual precipitation impacts the carbon-intensity of our electricity supply.





3 / GREEN BUILDINGS

GOAL: LEAD THE WORLD IN GREEN BUILDING DESIGN AND CONSTRUCTION

TARGETS:

- Require all buildings constructed from 2020 onward to be carbon neutral in operations.
- Reduce energy use and greenhouse gas emissions in existing buildings by 20% over 2007 levels.



BETTER ENERGY PERFORMANCE
-REQUIRED IN-
OFFICE AND COMMERCIAL BUILDINGS

INDICATOR	BASELINE	2013	% CHANGE
Total tonnes of CO ₂ e	1,145,000 tCO ₂ e (2007)	1,110,000 tCO ₂ e	-3%

tCO₂e = tonnes of carbon dioxide equivalent (GHGs)

The World Green Building Council recognized the City of Vancouver's green building policy as the best of any jurisdiction in the world in 2013.

2013-2014 SUCCESSES:

GREENING NEW BUILDINGS

City Council approved the 2014 Vancouver Building By-Law in September 2013, which requires a higher energy performance for all newly constructed buildings. Homes built in Vancouver will emit half the greenhouse gases compared to those built to Provincial code. Energy performance in office and commercial buildings must now be 15 per cent better than before. In 2013, the World Green Building Council recognized the City of Vancouver as having the "Best Green Building Policy" of any jurisdiction in the world.

IMPROVING EXISTING BUILDINGS

As part of the building code update, Vancouver is now the first jurisdiction in Canada to require energy efficiency upgrades to existing buildings at the time of renovation. Homes with high air leakage or without attic insulation will need to address these problems in order to obtain a renovation permit. Larger buildings are required to undertake energy upgrades related to the nature and scale of their renovation. These required improvements will pay for themselves in reduced energy bills and help to lower greenhouse gas emissions from existing buildings.

RETROFITTING RENTAL BUILDINGS

In 2013, the City partnered with LandlordBC and building owners to launch the Green Landlords pilot program, which helped rental building owners identify ways to reduce energy use. Cost effective energy savings opportunities, such as boiler upgrades, pipe insulation, and washing machine replacements were identified in nearly all of the 23 participating buildings. The landlords committed to act on the identified opportunities due to the excellent business case for doing so. They could recoup up to 37 per cent of the upgrade costs in the first year alone.

BC Hydro and FortisBC are now launching follow-up programs modelled on this successful City pilot. These initiatives will include energy studies and support for implementing upgrades for dozens of additional apartment buildings in 2014 and 2015. Working with landlords is an important part of greening buildings; Vancouver can have a big impact in this area, as an estimated 77 per cent of the Lower Mainland's rental apartment housing is located in Vancouver.



CHALLENGES

Condominium complexes represent an excellent opportunity for energy savings. However, the City's initial pilot program to work with strata councils to identify and implement cost effective energy savings improvements was not successful. Although many cost-effective retrofits were identified, and further support was offered by BC Hydro and FortisBC, it was difficult for condominiums to move forward given the high turnover of suite owners and the complex relationships between

strata councils and their members. The City will identify a new approach based on these lessons and practices from other jurisdictions in order to develop and launch a new program that will help condominium owners reduce their GHG emissions and energy costs.

Low natural gas prices continue to make the business case for energy conservation challenging, but failing to act now increases the risk to residents and businesses if energy costs do increase in the future.

As of 2014, a typical home built in Vancouver will produce half the greenhouse gas emissions compared to one built to the Provincial building code.





4

GREEN TRANSPORTATION

GOAL: MAKE WALKING, CYCLING, AND PUBLIC TRANSIT PREFERRED TRANSPORTATION OPTIONS

TARGETS:

- Make the majority (over 50%) of trips by foot, bicycle, and public transit.
- Reduce average distance driven per resident by 20% from 2007 levels.



-TRIPS MADE BY-BIKE, WALKING, OR TRANSIT

INDICATOR	BASELINE	2012*	% CHANGE
Per cent mode share by foot, bike and transit	40% of trips	44% of trips	10%*
Total vehicle km driven per person	Not available	New survey to be conducted late 2014*	--

* New survey to be conducted late 2014. There has been a 10 per cent change from the baseline of 40 per cent mode share by foot, bike, and transit, and a four per cent increase in mode share.

19% of Vancouver's 265 kilometre bike network is designated "All Ages and Abilities" or AAA. These are high-quality, low-stress routes that are comfortable for novice riders, families with children, and the elderly.

2013-2014 SUCCESSES:

EXPANDED WALKING AND CYCLING NETWORK

The City expanded and upgraded Vancouver's walking and cycling network in 2013. Cyclists can now travel from Stanley Park to Hornby Street through the West End on the Comox-Helmcken Greenway and enjoy the final leg of the 28-kilometre Seaside Greenway connecting the Burrard Bridge to Jericho Beach Park. Union Street bikeway also received a facelift, which improved connections between the Adanac Bikeway, Dunsmuir Viaduct, Carrall Street, and the Seawall.

IMPROVED BURRARD STREET BRIDGE ACCESS

Major improvements were made to the Burrard-Cornwall intersection at the south end of the Burrard Bridge. This complex intersection was simplified in early 2014, improving safety and connectivity for all users. A major collision hotspot was addressed, and crossing the street on foot or bike is much easier, requiring only two crosswalks instead of five.

Work was completed as part of a larger False Creek Bridge strategy that takes advantage of necessary maintenance projects to improve safety for cycling and walking on all three False Creek crossings.

IMPROVED SAFETY AND ACCESS ON POWELL STREET

Due to be completed in summer 2014, the new Powell Street Overpass will support active transportation by developing a core-section of the Portside Greenway, a walking and cycling route connecting downtown to Boundary Road. It will also support a thriving economy and sustainable goods movement by increasing rail reliability and capacity to and from Port Metro Vancouver.

SAFETY FOR ALL ROAD USERS

Improving the safety of all road users is critical, as an increasing number of trips are made by foot and bicycle on limited road space. The City, the Vancouver Police Department (VPD), and other partners are working together to improve safety through engineering, enforcement, and education efforts. An example is the School Active and Safe Travel Planning Program which identifies safety measures such as raised crosswalks near schools and route designs that enhance bike safety and comfort. Other considerations include revisiting parking regulations, enforcement on nearby streets, and supporting the VPD's School Safety Patrol education program.



CHALLENGES

The City of Vancouver's Transportation 2040 Plan identified rapid transit for the Broadway corridor as the City's number one transportation priority and one of the most significant infrastructure investments for our region's future. The region's mayors came together to create a 10-year plan that outlines the priorities for the region, and calls for rapid transit along the Broadway corridor between Commercial Drive and UBC, with the first phase of the project a tunnelled extension—not cut and cover—of the Millennium Line to Arbutus Street. The plan must still be approved by the Province.

The City's plans to launch a public bike share system were delayed as a result of challenges faced by the selected proponent's bicycle and station supplier. The City continues to work with Alta—one of the largest and most experienced operators of public bike shares in the world—to develop a bike share program with the intent to launch a network of shared bicycles in 2015.

More than 80,000 trips are made on the Burrard Street Bridge by foot, bike, transit, or vehicle every day. They all pass through the intersection of Burrard and Cornwall at the south end. Improvements in 2014 greatly simplify this intersection, making it safer for all users.





5 / ZERO WASTE

GOAL: CREATE ZERO WASTE

TARGETS:

- Reduce solid waste going to the landfill or incinerator by 50% from 2008 levels.



DECREASE IN SOLID WASTE SENT TO LANDFILL OR INCINERATOR SINCE 2008

INDICATOR	BASELINE	2012	% CHANGE
Annual solid waste disposed to landfill or incinerator from Vancouver	480,000 tonnes (2008)	424,000 tonnes*	-12%

* Solid waste data is compiled first at a regional level and then at the city level. As a result, Vancouver's data is always one year behind the reporting period.

New public waste receptacles designed for easy access to binners resulted in 94% fewer beverage containers going to landfill.

2013-2014 SUCCESSES:

EXPANDED FOOD SCRAPS COLLECTION

Twelve per cent less waste is going to landfill. Food scraps composting collection from Vancouver single family and duplex homes will help decrease this even further. In 2013, the amount of garbage produced by single-family homes dropped by approximately 40 per cent, and Green Bin collection increased approximately 60 per cent. An unprecedented 39,000 tonnes of Green Bin waste was diverted from landfill in 2013 and was instead used for composting.

LAUNCHED WORLD'S FIRST CIGARETTE BUTT RECYCLING PROGRAM

The City partnered in a pilot project to collect and recycle cigarette butts in late 2013. The first of its kind in the world, this program cuts down on toxic litter on city streets, while creating green jobs for people with barriers to employment. The City has now taken over the program and is evaluating the results: approximately 100 receptacles were installed throughout downtown, with more than 200,000 butts collected in the first six months alone.

Since the new Green Bin program began in 2013 for single family and duplex homes, approximately 40 per cent more of their waste is being diverted from the landfill and being used for compost instead.



INSTALLED BINNER-FRIENDLY PUBLIC RECYCLING RECEPTACLES

The binning community plays an important role in decreasing the amount of garbage to landfill that could otherwise have been recycled. Public recycling receptacles were designed to allow easier access to refundable drinks containers for binners, thanks to a partnership with Encorp Pacific and with input from United We Can. Results show that where new receptacles were installed, 94 per cent fewer recyclable drinks containers go in the garbage. The program began in 2013 with 60 receptacles, another 100 were installed later in the year, and more are on the way.

CHALLENGES

A Metro Vancouver regional ban on all compostable material from landfill and incinerator, targeted for 2015, is a major driver for reducing our city's waste. Progress towards the Zero Waste target will be impacted by the implementation of this initiative.

Private companies collect more than 80 per cent of Vancouver's waste. The diversity of haulers, contracts, and building types makes collecting food scraps from condominium complexes a challenge. As a priority for the Zero Waste goal, the City is actively engaging the 1,300 buildings with City waste collection services and private waste hauling companies who service Vancouver's remaining 3,800 multi-unit residential buildings.



**RECYCLE
STATION**



CITY OF
VANCOUVER

GREENEVALE
Green Spaces





6

ACCESS TO NATURE

GOAL: VANCOUVER RESIDENTS ENJOY INCOMPARABLE ACCESS TO GREEN SPACES, INCLUDING THE WORLD'S MOST SPECTACULAR URBAN FOREST

TARGETS:

- All Vancouver residents live within a five-minute walk of a park, greenway, or other green space by 2020.
- Plant 150,000 new trees by 2020.

**23,400
NEW TREES
PLANTED**
SINCE 2010



INDICATOR	BASELINE	2013	% CHANGE
Per cent of city's land base within a 5 minute walk to a green space	92.6% (2010)	92.7%	0.1%
Total number of additional trees planted	(2010)	23,400 trees	--

New mini-parks are planned at Yukon Street and 17th Avenue and as part of the rezoning at 2220 Kingsway, bringing new public green spaces to otherwise nature-deficient areas.

2013-2014 SUCCESSES:

DOUBLED NUMBER OF NEW TREES PLANTED

Nearly 11,000 new trees were planted in 2013, almost doubling the number of new trees planted since 2010. In 2013, the Park Board partnered with TreeKeepers to encourage tree planting within the community. Programs like the Citizen Forester training program, the first-ever TreeKeepers Day, and tree distribution events were designed to enable residents and businesses to support this Greenest City goal. As a result, 900 trees—including more than 200 fruit trees—were planted on private land in 2013, with a target of 4,000 more for 2014.

INTRODUCED URBAN FOREST STRATEGY TO BETTER PROTECT TREES

In early 2014, City Council approved a comprehensive Urban Forest Strategy which will protect existing trees, lead to strategic planting of new trees, and manage a healthy and resilient urban forest. The urban forest helps to clean the air, manage storm water runoff, store carbon, provide habitat, and improve the health and well-being of residents.

Since 1995, nearly all tree removals in the City occurred on private property. The Urban Forest Strategy includes an update to the Protection of Trees By-Law, which ended the ability of private property owners to remove healthy, mature trees without cause. This brings Vancouver in line with tree protection measures common to other cities in the region and beyond.

In Oak Meadows Park, 300 new trees were planted in 2013 along with songbird habitat and pollinator habitat for bees.



ENHANCED BIODIVERSITY AT OAK MEADOWS AND CREEKWAY PARKS

In Oak Meadows Park at Oak Street and West 37th Avenue, the Park Board worked with the Environmental Youth Alliance and others to plant 300 new trees, create 550 square metres of pollinator habitat for bees, and create 275 square metres of new songbird habitat.

The 3.2-acre Creekway Park project restored a section of Hastings Creek, a stream that had been buried for nearly a century. As part of the Hastings Park renewal, an abandoned parking lot was transformed into a new, ecologically rich and diverse green space, with a bird habitat alongside pedestrian and cycling paths. Creekway Park is surrounded by a range of human-made infrastructure such as roads, rail lines, storm drains, and power lines.

The parks both blend native habitats with the urban landscape and demonstrate how biodiversity can be reintegrated into the heart of Vancouver neighbourhoods.

CHALLENGES

Parks can only accommodate a portion of our targeted 150,000 additional trees. More space is needed than is available on public land. Trees planted by residents on private land are crucial to reaching this target. The City also works with developers to integrate green space into building developments.

At the same time, improving access to nature for residents requires more than just planting trees. Restoring natural habitats—forests, wetlands, streams, and shorelines—will create more opportunities for Vancouverites and visitors alike to encounter thriving wildlife, plants, and ecosystems in the urban environment.





7 LIGHTER FOOTPRINT

GOAL: ACHIEVE A ONE-PLANET ECOLOGICAL FOOTPRINT

TARGETS:

- Reduce Vancouver's ecological footprint by 33% over 2006 levels.

6,700 PEOPLE EMPOWERED TO TAKE ACTION ON GREENEST CITY 

INDICATOR	BASELINE	2013	% CHANGE
Proxy: Number of people empowered* by a City-led or City-supported project to take personal action in support of a Greenest City goal and/or to reduce levels of consumption (cumulative)	600 people empowered to take action (2011)	6,700 people empowered to take action	1,117%

* "People empowered to take action" are defined as those who are enabled to change their lifestyle or are implementing a community project that helps Vancouver achieve its Greenest City goals as a result of support provided by a City-led or City-supported program. Examples include learning to preserve food or ride a bike through a community centre class, as well as people involved in projects supported by the Vancouver Foundation and City of Vancouver Greenest City Fund. The definition excludes people participating in a dialogue or consultation, attending an event, using infrastructure (e.g., bike lanes, food scraps collection), or receiving a personal incentive (e.g., home energy retrofits).

In partnership with the Vancouver Foundation, the Greenest City Fund awarded grants to 136 community initiatives in 2013, totalling nearly \$400,000.

2013-2014 SUCCESSES:

DEVELOPED RESOURCES FOR GREENING EVENTS

There are nearly 1,000 permitted events in Vancouver parks and streets each year. A Green Event Planning Guide was developed in 2013 to help event organizers support more sustainable choices by attendees. Event planners can facilitate access to portable water fountains, provide bike racks and resources to support recycling, and use better signage to make it easy to find these things in the excitement and bustle of a successful event. Progress made towards greener events is measured through a Green Event Form, which collected baseline information in 2013.

SUPPORTED CITY STUDIO PROJECTS

In 2013, nearly 600 students worked on green projects through the award-winning City Studio program. Examples of their community-reaching projects include:

- Working with a Britannia Food Share program to help youth recover edible but unmarketable produce from local grocers which saves money, engages

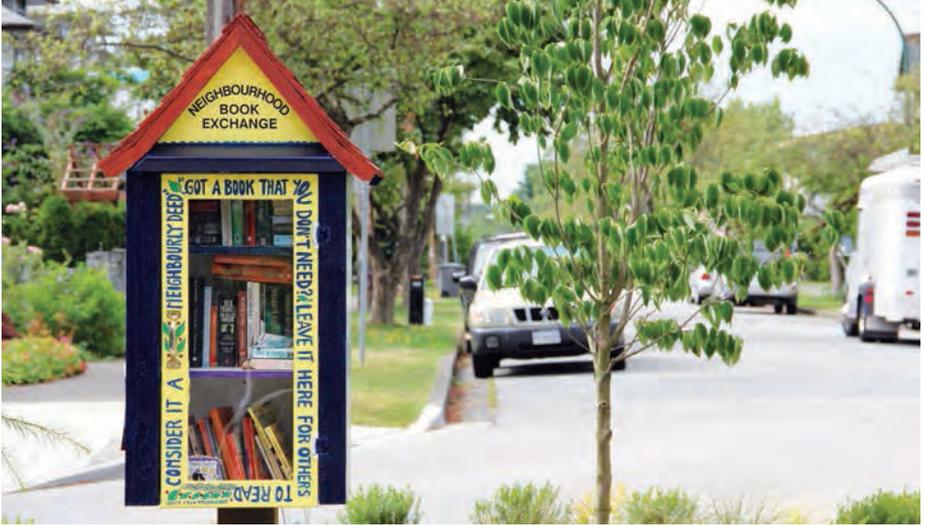
businesses and residents, and reduces otherwise healthy food going to waste;

- Installing free, playable pianos in public spaces to inspire active transportation and public engagement;
- Working with City staff and community groups to design and build garden structures at three community food gardens.

HARNESSED GREENEST CITY SCHOLARS FOR FRESH INSIGHTS

The Greenest City Scholar Program, a partnership between UBC and the City, offers graduate students valuable real-life work experience by supporting and offering a fresh perspective on Greenest City projects. In 2013, 11 scholars worked 250 hours each investigating and implementing diverse initiatives, from guidelines to increase urban songbird habitat to addressing improper recycling at community events. Much of their research and recommendations will be used to support future City programs, initiatives, and policies. Now in its fifth year, the program will grow to 16 scholars.

In 2014, the first annual Vancouver Awards of Excellence included a Greenest City Leadership category to recognize outstanding individuals or groups who help achieve *Greenest City 2020 Action Plan* goals.



CHALLENGES

Measuring Vancouver's ecological footprint is very complex, and made more difficult because much of the required data is only available on a national or regional level. Measuring the number of "people empowered to take action" is a way to measure success in the ultimate objective of the Lighter Footprint goal: to enable residents to help collectively reduce our community's environmental impact.

Greenest City actions such as greening of buildings, increasing recycling, as well as shifting to walking, cycling, and transit all help to reduce Vancouver's ecological footprint. The challenge is that a significant portion of our footprint results from the food and consumption choices we make. To address this, the City is working to foster a "sharing economy", where people buy, rent, trade, and share their under-used resources and goods with one another. Not only will this make goods and services more accessible, affordable and less wasteful, it can also help build community and resilience.





8

CLEAN WATER

GOAL: VANCOUVER WILL HAVE THE BEST DRINKING WATER OF ANY CITY IN THE WORLD

TARGETS:

- Meet or beat the strongest of British Columbian, Canadian, and appropriate international drinking water quality standards and guidelines.
- Reduce per capita water consumption by 33% from 2006 levels.



**18%
DECREASE**
-IN-
**TOTAL WATER
CONSUMPTION**
SINCE 2006

INDICATOR	BASELINE	2013	% CHANGE
Total number of instances of not meeting drinking water quality standards	0	0	0
Total water consumption per capita	583 L/person/day (2006)	480 L/person/day	-18%

Businesses that participated in an audit of their operations identified money-saving opportunities to reduce their water usage by up to 22%.

2013-2014 SUCCESSES:

INSTALLED WATER-SAVING TOILETS IN RENTAL BUILDINGS

Nearly all 23 participating buildings in the City's Green Landlord pilot program identified cost saving opportunities to reduce water use by 20 per cent. Should the landlords implement the changes identified, such as installing low-flow showerheads and low-flush toilets, nearly 21 million litres of water a year (or the equivalent of over 100,000 bathtubs every day) could be saved.

SUPPORTED WATER EFFICIENCY IN RESTAURANTS AND OFFICES

Industrial and business activity account for a quarter of Vancouver's annual water usage. In a pilot program to tackle water consumption, seven restaurants and offices agreed to have audits done to identify opportunities to reduce water usage in their operations. The group also committed to inexpensive water-saving upgrades—such as faucet aerators, pre-rinse spray valves, and high-efficiency toilets—that will reduce water use by up to 22 per cent and pay for themselves in less than two years.

TRAINED GREEN PLUMBERS

Green Plumbers® is an international program that was offered for the first time in Canada in 2013. Over two days, 67 Vancouver plumbers and apprentices learned about the latest in high-efficiency fixtures and appliances, and learned to calculate potential water and financial savings to help their clients make smart decisions about water use.

RAISED PUBLIC AWARENESS THROUGH DESIGN CHALLENGE

The Ironclad Art Challenge, which helped raise awareness of the importance of sewers in keeping local water healthy, received more than 1,000 unique and exciting entries. The contest asked for the public's help to distinguish storm from sanitary sewer manhole covers, highlighting the importance of separated sewer systems. As the City upgrades sewer mains each year, old combined sewer mains are replaced with twin mains to separate sanitary sewage from storm water, which helps prevent flooding and reduces overflows into Vancouver's waterways.

More than 1,000 entries were received for the Ironclad Art Challenge, in which manhole covers become public art to highlight the important role that sewers play in clean and healthy water systems.



CHALLENGES

Innovative programs are a priority for making and keeping people aware of water conservation. Vancouver has rainy days nearly 50 per cent of the year, leading to a perception that water conservation is less important here. However, Vancouver also has long, dry stretches in the summer where we rely on water stored over the rainy season. Additionally, Metro Vancouver and the City have finite infrastructure to store and deliver clean water to residents, and a growing population means that each person will need to use less to defer the need for costly system expansion.





9

CLEAN AIR

GOAL: BREATHE THE CLEANEST AIR OF ANY MAJOR CITY IN THE WORLD

TARGETS:

- Meet or beat the most stringent air quality guidelines from Metro Vancouver, British Columbia, Canada, and the World Health Organization.



ELECTRIC VEHICLE CHARGING STATIONS

INDICATOR	BASELINE	2013	% CHANGE
Total # of instances of not meeting of air quality standards for ozone, particulate matter (PM 2.5), nitrogen dioxide and sulfur dioxide from both the Kits and Downtown stations combined*	27 (2008)	0	-100%

*Air quality metrics are measured by Metro Vancouver from data from two monitoring stations in Vancouver: one in Kitsilano and one at Robson Square. Four indicators of air quality are used for comparison to world standards. They are: 24 hour average particulate matter (PM 2.5) concentration >25 ug/m³, one hour average nitrogen dioxide (NO₂) concentration >200 ug/m³, 24 hour average sulfur dioxide (SO₂) concentration >20 ug/m³, and eight hour ground-level ozone (O₃) concentration >52 ppb.

New fireplaces and other wood-burning heating devices in Vancouver must now have 15 times lower emissions than a typical fireplace.

2013-2014 SUCCESSES:

BANNED COAL SHIPMENTS ON INDUSTRIAL LANDS

In July 2013 City Council banned the handling and shipment of coal on industrial lands within the City. Proposed increases in coal shipments from terminals, and the coal dust that would be generated, are deemed to pose significant health concerns and would negatively impact Vancouver's air quality.

ADOPTED THE HIGHEST STANDARD FOR WOOD-BURNING APPLIANCES IN NORTH AMERICA

Wood burning heating devices—like fireplaces, wood stoves, and furnaces—produce smoke and fine particles that impact air quality and human health, especially for the elderly and those with respiratory issues. The 2013 Vancouver Building By-Law requires the tightest standard for new wood-burning heating devices in North America, setting a limit 15 times lower than the emissions of a typical fireplace.

DOUBLED ELECTRIC VEHICLE CHARGING INFRASTRUCTURE

The City has installed 93 electric vehicle charging stations to date, including 54 in 2013. Charging stations were installed in multiple locations including Hillcrest Community Centre, Pacific Centre, Oakridge Mall, Vancouver General Hospital, and curbside in Yaletown. Working with residential and mixed-use complexes as well as public facilities, the City plans to install up to 17 more for fleet, public, and tenant use in 2014.

The Federation of Canadian Municipalities awarded the City with a 2014 Sustainable Communities Award for its electric vehicle community infrastructure program. Across Vancouver, the City and organizations such as the Building Owners and Managers Association of BC continue to build infrastructure in new residences and commercial buildings and work with community groups and car-share companies to address real and perceived barriers to electric vehicle use.

The number of electric vehicle charging stations doubled in 2013. Currently, 93 charging stations are operating across the city.



CHALLENGES

The BC government plans to set more stringent SO₂ and NO₂ objectives in the future, and Metro Vancouver will review its SO₂ objectives in 2014. As result of these more stringent standards, new exceedances could occur next year and to meet these new standards, air quality improvement remains a priority.

One of the greatest challenges for air quality in Vancouver is limiting SO₂ emissions, the primary source of which is marine shipping. If the proposed expansion to the Trans Mountain Pipeline is approved, the number of oil

tankers passing through the Burrard Inlet will increase from five tankers a month to 34, with negative impacts on the air we breathe.

Finally, current Provincial regulation makes it difficult for private businesses to recoup the costs of installing and operating an electric vehicle charging station. The City is working with BC Hydro and the Province to understand how regulations may be updated to better support the spread of EV charging stations to support the market transition to these ultra-low emission vehicles.




EV
**ELECTRIC
VEHICLE
CHARGING
ONLY**



10 LOCAL FOOD

GOAL: VANCOUVER WILL BECOME A GLOBAL LEADER IN URBAN FOOD SYSTEMS

TARGETS:

- Increase city-wide and neighbourhood food assets by a minimum of 50% over 2010 levels.



INCREASE IN NEIGHBOURHOOD FOOD ASSETS SINCE 2010

INDICATOR	BASELINE	2013	% CHANGE
Total number of neighbourhood food assets* in Vancouver	3,340 food assets (2010)	4,332 food assets	30%

* Food assets include: number of community garden plots, farmers markets, community orchards, community composting facilities, community kitchens, community produce stands, and urban farms.

Vancouver has 4,166 community garden plots, with 481 new plots added in 2013.

2013-2014 SUCCESSES:

LAUNCHED INCUBATOR KITCHEN PROJECT

Vancouver Incubator Kitchen (VIK) is a kitchen space created to support culinary education, food-related job creation, and the local food economy. Located in the Save-On-Meats building, VIK supports skills training for students and local residents, and acts as a commissary for independent food service businesses and community organizations. VIK is a partnership between Vancouver Community College, Mark Brand Inc., Vancity Credit Union, and the City.

EXPANDED FOOD ASSETS IN PARKS

With support from a task force of community stakeholders, Park Board Commissioners passed the Local Food Action Plan in July 2013. The plan includes actions that are already underway, such as working with food suppliers to offer local, healthy food options at beach concessions.

Three park sites have received improved farmers market infrastructure and the Park Board also approved or renewed license agreements for 17 community gardens in parks, approved eight new community gardens, and supplied 170 fruit trees to existing community gardens.

DEVELOPING A HEALTHY CITY STRATEGY

A healthy, just and sustainable food system is key to building a healthy city for all residents. Currently in development, the Healthy City Strategy ties into key priorities such as Local Food and other Greenest City goals. It will be a long-term, integrated plan for social sustainability that will help create healthier people, healthier places, and a healthier planet.

An updated Farmers Market Policy helped three new farmers markets debut in 2013, for a city-wide total of 12.



FOSTERED COMMUNITY FOOD MARKETS

Community food markets provide a way to bring fresh, nutritious food closer to residents who need it, but may have physical or economic difficulty accessing a grocery store or farmers' market. The Westside Mobile Food Market is a non-profit "market on wheels" supported through the Greenest City Fund. From July to September 2013, the market delivered fresh, affordable produce to residents at community gathering places throughout the Westside.

CHALLENGES

As local food assets increase, available land becomes an issue. The City encourages a diversity of urban agriculture and garden types designed to allow gardens to be established and then moved if necessary. A variety of innovative growing techniques are less dependent on long-term land use: moveable planters, vertical growing and rooftop gardens. Community gardens can also be used for short-term educational programs or as artistic food-growing spaces.



GREENING CITY OPERATIONS

CITY OPERATIONS GO GREEN

The City continues to lead the way by greening our own operations. Comprehensive green operations planning and projects involving new construction and vehicle technologies, as well as improving and expanding existing programs, all helped the City reduce carbon, pollution, and environmental impacts of civic operations.

2013-2014 SUCCESSES:

EXPANDED CIVIC ZERO WASTE PROGRAM

The City continues to expand the corporate waste diversion program that began two years ago. There are now 41 civic facilities participating and another 30 planned for 2014. In 2013, we achieved an average 70 per cent waste diverted from landfill in City buildings, with City Hall achieving 85 per cent diversion. City staff have set a target of 90 per cent by 2020.

MAINTAINED AWARD-WINNING ELECTRIC VEHICLE FLEET

The City was recognized for having the greenest municipal vehicle fleet in Canada, and moved up 11 spots to reach the top 20 greenest municipal vehicle fleets in North America. The City also has the largest municipal fleet of electric vehicles in Canada, with 27 electric vehicles.

A new program to test fire hydrants for leaks will save 200 million litres of water and up to \$200,000 annually.

REDUCED FIRE HYDRANT LEAKAGE

More than 100 of the City's 6,000+ fire hydrants are leaking at any given time. In 2013, ongoing funding was established for a twice-yearly hydrant leak survey program. This program will save 200 million litres of water and up to \$200,000 a year. Moving forward, new equipment will provide greater sensitivity when "listening" for leaks and allow pressures to be dialed down to reduce leakage in the City's pipe network.

REDUCED POLLUTION FROM POLICE VEHICLES

Vancouver police officers are required to leave squad cars idling while they investigate accidents and deal with dangerous situations, to avoid draining the battery or compromising response readiness. Since 2013, new Vancouver Police Department vehicles are equipped

with technology that minimizes idle time and emissions. The system monitors battery levels when the emergency lights are operating with the engine switched off. When the charge level drops too low, the engine restarts automatically, running long enough to refresh the battery before shutting down again.

PILOTED TRENCHLESS CONSTRUCTION TECHNOLOGY

The City began a pilot to use trenchless technology for sewer and water main projects. Instead of digging a long trench to replace something such as a pipe, holes are dug at either end and the replacement pipe is pushed through. This helps reduce waste and cuts down on traffic disruptions. This new method was used with great success when 600 metres of water main was installed along West Georgia Street in 2013.

The City won the Federation of Canadian Municipalities Sustainable Communities Award for its electric vehicle infrastructure program.



GET INVOLVED!

Nearly 100 Greenest City-related projects were completed between 2011 and 2013. Partnerships with the community have been crucial to our success. The City of Vancouver thanks everyone who contributed their time, expertise and passion for the city in which we all

live. On our journey to becoming the Greenest City by 2020, there is still much work to be done.

Every resident, business, and community group has a role to play, and the time has never been better to take action.

If you have an idea that will help make this city greener, more vibrant, and even more amazing, consider applying for a Greenest City Grant. Visit the Vancouver Foundation website at vancouverfoundation.ca/initiatives/greenest-city-fund for more details.



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