CITY OF VANCOUVER

GREENEST CITY

2020 ACTION PLAN PLEMENTATION UPDATE 2016-2017 IMPLEMENTATION

PROGRESS HIGHLIGHTS



DECREASE -IN-DISTANCE DRIVEN PER PERSON SINCE 2007



INCREASE IN NEIGHBOURHOOD FOOD ASSETS SINCE 2010





NEW LOCAL FOOD AND GREEN JOBS SINCE 2010



ENHANCED



DECREASE IN GREENHOUSE GASES FROM CITY OPERATIONS SINCE 2007





DECREASE IN

SOLID WASTE

SENT TO LANDFILL AND

INCINERATOR SINCE 2008

27%

311km OF BIKE NETWORK IN VANCOUVER

DASH-BOARD

- ¹ 2016 natural gas data were not available in time for the publication of this report. Emissions are given for the most recent year available (2015).
- ² 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.
- ³ 5% of the city's land-base is industrial land area, and is not considered part of the target.
- ⁴ Private tree sales and community stewardship numbers were reassessed in 2016, resulting in an increase in total number of trees planted between 2010 and 2013.
- ⁵ Food assets include: number of community garden plots, farmers markets, community orchards, community composting facilities, community kitchens, community produce stands, and urban farms.

⁶ Air quality metrics are measured by Metro Vancouver from data from one monitoring station at Robson Square in Vancouver. The Kitsilano station is offline and awaiting relocation. 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 sulphur dioxide (SO₂) concentration >20 µg/m³, and eight hour ground-level ozone (O₂) concentration >20 µg/m³.

⁷ "People empowered to take action" are defined as those who are enabled by City-supported programs 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 in 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).

⁸ Without the benefit of universal water metering of our civic facilities, metric tracking is a best estimate only, based on available data and extrapolation. The accuracy of the metric will increase as water meters continue to be installed at prioritized City buildings.

GOAL AND TARGETS	INDICATOR	BASELINE	2016	CHANGE FROM BASELINE	IMPROVED OVER BASELINE	2020 TARGET
CLIMATE LEADERSHIP						
Target: Reduce community-based greenhouse gas emissions by 33% from 2007 levels BY 2020.	Total tonnes of community CO2e emissions from Vancouver	2,850,000 tCO ₂ e (2007)	2,410,000 tCO ₂ e (2015) ¹	-15%1	Yes	1,910,000 tCO ₂ e
GREEN BUILDINGS						
Target 1: Require all buildings constructed from 2020 onward to be carbon neutral in operations.	Kilograms of CO2e per square metre of newly built floor area	20.7 kgCO ₂ e/m ² (2007)	11.8 kgCO ₂ e/m ² (2017)	-43%	Yes	carbon neutral
Target 2: Reduce energy use and GHG emissions in existing buildings by 20% over 2007 levels.	Total tonnes of CO2e from all community buildings	1,630,000 tCO ₂ e (2007)	1,295,000 tCO ₂ e (2015) ¹	-20%1	Yes	1,300,000 tCO ₂ e
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%	50% of trips	+10%	Yes	50% of trips
Target 2: Reduce average distance driven per resident by 20% from 2007 levels.	Total vehicle km driven per person	5,950 km (2007)	4,060 km	-32%	Yes	4,760 km
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 ²	480,000 tonnes (2008)	351,000 tonnes (2015)	-27%	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.	Per cent of city's land base within a five-min walk to a green space	92.6% (2010)	92.7%	+0.1%	Yes	95%3
Target 2: Plant 150,000 additional trees.	Total number of additional trees planted ⁴	(2010)	82,000 trees	+82,000	Yes	150,000 trees
Target 3: Restore or enhance 25 hectares of natural areas between 2010 and 2020.	Total hectares of natural areas restored or enhanced	(2010)	20 hectares	+20	Yes	25 hectares
Target 4: Increase canopy cover to 22% by 2050.	Per cent of city's land area covered by tree-leaf canopies	18% (2013)	Survey to be conducted in 2018			22% (2050)
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 instances (2006)	0 instances	0	Yes	O instances
Target 2: Reduce per-capita water consumption by 33% from 2006 levels.	Total water consumption per capita	583 L/person/ day (2006)	476 L/person/day	-18%	Yes	390 L/person/ day
LOCAL FOOD						
Target: Increase city-wide and neighbourhood food assets by a minimum of 50% over 2010 levels.	Total number of neighbourhood food assets ⁵ in Vancouver	3,344 food assets (2010)	4,740 food assets	+42%	Yes	5,016 food assets
CLEAN AIR						
Target: Meet or beat the most stringent air quality guidelines from Metro Vancouver, BC, Canada, and the World Health Organization.	Total number of instances of not meeting of air quality standards for ozone, particulate matter (PM2.5), nitrogen dioxide and sulphur dioxide from both the Kits and Downtown stations combined ⁶	27 instances (2008)	0	-100%	Yes	0 instances
GREEN ECONOMY						
Target 1: Double the number of green jobs over 2010 levels.	Total number of green jobs	16,700 jobs (2010)	24,800 jobs	+49%	Yes	33,400 jobs
Target 2: Double the number of companies that are actively engaged in greening their operations over 2011 levels.	Per cent of businesses engaged in greening their operations	5% of businesses engaged (2011)	Survey to be conducted in 2017			10% of businesess engaged
LIGHTER FOOTPRINT						
Target: Reduce Vancouver's ecological footprint by 33% over 2006 levels.	Proxy: Number of people empowered ⁷ 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)	18,400 people	+17,800	Yes	To be determined
GREEN OPERATIONS						
Target Zero Carbon: 50% reduction in GHGs from City operations from 2007 levels	Total tonnes of CO ₂ e from City operations	495,000 tCO ₂ e (2007)	220,000 tC0 ₂ e	-56%	Yes	247,500 tCO ₂ e
Target Zero Waste: 70% waste diversion in public-facing	Total diversion rate (public)	65% (2013)	65%	0%	Yes	70% diverted
City-owned facilities	Total diversion rate (other)	85% (2013)	91%	+6%	Yes	90% diverted
Target Healthy Ecosystems: Reduce water use in City operations by 33% from 2006 levels	Total water use by City facilities $(m^3)^{\mbox{\tiny 8}}$	2,680,000 m ³ (2006)	2,065,000 m³	-23%	Yes	1,340,000 m ³

AWARDS

2016 Arcadis Sustainable Cities Index: Most Sustainable City in North America

2016 Milan Pact Award (Vancouver Food Strategy)

2016 World Green Building Council: Chairman's Award (for contributions to the global green building movement)

2016 Economist Intelligence Unit Global Livability Index: Third Overall Globally, First in North America

2016 YWCA Women of Distinction Awards: Environmental Sustainability (Amanda Pitre-Hayes)

2016 Community Energy Association Climate and Energy Action Awards: Public Sector Organization & Local Government Collaboration (Empower Me program) **CDP:** One of 10 Top Cities for Climate Reporting and Disclosure in 2016

2017 Heritage BC Awards: Recognition Award for Heritage Planning & Management (Heritage Energy Retrofit Grant)

2017 Canada Green Building Council: Inspired Educator Award (CityStudio)

2017 Mercer Quality of Living Survey: Fifth Overall Globally; First in North America

2017 Mediacorp Canada Inc.: Canada's Greenest Employers

2017 Tripadvisor's Travelers' Choice Awards: Top Destination in Canada (specifically for our "waterfront forests" and "cityside beaches")

This Update is organized according to the 10 goals of the *Greenest City* 2020 Action Plan, which can be found at: **vancouver.ca/GreenestCityActionPlan**

OVERVIEW

In 2011, Vancouver set a goal to become the greenest city in the world by 2020.

You're already living in a greener Vancouver than it was back then. In the last six years, the Greenest City 2020 Action Plan (GCAP) has helped make our city a more vibrant community, with a thriving green economy and a greener, healthier way of living.

You've been with us the whole way. Residents, community groups, and businesses are all helping us make the greenest city a reality. We've come so far, and we still have a ways to go. We have to start thinking about what the Greenest City Action Plan will look like after 2020. In the meantime, this Update recaps some of the work done in the past year by City staff and residents to get us closer to our goals.

"Decades ago, Vancouver residents decided that the way of the past was not for us. We chose a different path. Together, we've made the choices that have turned our home into one of the world's most livable cities."

From Greenest City 2020 Action Plan Part Two: 2015-2020

CLIMATE CHANGE ADAPTATION

We're not just reducing our impact on climate change. We have to work on preparing for climate change's impact on us. Being a coastal city, Vancouver will be affected by sea level rise, projected to be one metre within the next 80 years. Sea level rise is caused by the ocean expanding as it heats up due to global warming, and as major stores of ice from glaciers and ice sheets melt. Around the world, sea level rise, storms, drought and flood-related events are already causing billions of dollars in damage.

We have finished the Coastal Flood Risk Assessment to better understand flooding risk today and in the future, and to develop some options to start preparing the city. All new coastline projects are taking these risks into account, and new buildings in floodplain areas are being built a metre higher, thanks to a 2014 update to the Vancouver Building Bylaw.

The climate is changing, but we have time to prepare. Vancouver is planning for this now, to prevent impacts and to avoid major costs down the road. Preparing our city can also provide opportunities to make it even greener and liveable than it is today. Meanwhile, we're launching a city-wide education program this year around sea level rise, and engaging with residents and businesses in flood-vulnerable areas.

To learn more, go to vancouver.ca/climateadaptation



CLIMATE AND RENEWABLES

GOAL: ELIMINATE DEPENDENCE ON FOSSIL FUELS

TARGET:

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



INDICATOR	BASELINE	2016	CHANGE
Total tonnes of community CO ₂ e emissions from Vancouver	2,850,000 tCO ₂ e (2007)	2,410,000 tCO ₂ e (2015)*	-15%

^{* 2016} natural gas data were not available in time for the publication of this report. Emissions are given for the most recent year available (2015).

The Renewable City Strategy looks first and foremost at cutting our energy use, so we can make the move to renewable forms of energy easier.

2016-2017 SUCCESSES:

STARTED DOWN THE PATH TO A RENEWABLE CITY

The world is moving towards a clean energy future and we want to help lead the way. Six years ago, the City set a Greenest City goal to eliminate our dependence on fossil fuels, starting with cutting our carbon pollution by a third by 2020. Then in 2015, Council unanimously approved the Renewable City Strategy, committing Vancouver, community wide, to draw 100% of its energy from renewable sources before 2050. The Strategy looks at two main areas: Vancouver's buildings and Vancouver's transportation. Achieving this goal will help residents save money, ensure cleaner air and a healthier environment, and strengthen our economy.

Even though it's a 35-year Strategy, we've already made good progress. In 2016, we developed the Zero Emissions Building Plan, the first step toward a renewable city. The Plan sets targets to eliminate carbon pollution from new buildings by 2030. Building developers can either meet a zero-emission standard, which basically means much better energy efficiency, or they can connect to a neighbourhood energy utility that uses renewable energy. Read more about this in the Green Buildings chapter of this Update.

Meanwhile, our efforts to improve transit and make walking and cycling an easy choice for people are paying off. Residents are increasingly choosing those options to get around the city. For when people need to drive, we're now seeing more electric vehicles on Vancouver streets than ever before. We want to make it possible for even more residents to go electric. To do that, we're making sure there are charging stations where people need them. Building a seamless vehicle-charging network at homes, workplaces, and in public spaces will make charging an EV a hassle-free experience. Adopted in 2016, the Electric Vehicle Ecosystem Strategy sets out to do this. Learn more in the Clean Air chapter of this Update.

In December 2016, the prime minister and premiers agreed to the pan-Canadian Framework on Clean Growth and Climate Change – the first national climate change plan. The economic and environmental goals line up with Vancouver's, and we are in a good position to support the Framework and benefit from the future opportunities it represents.



CAPTURED RENEWABLE NATURAL GAS AT THE LANDFILL

When organic waste decays in a landfill. a gas containing biomethane is released. Left on its own, biomethane contributes to climate change and is twenty-five times more damaging than CO₂. The good news is that biomethane-when captured by our landfill gas recovery system—is a form of renewable natural gas and can be used just as we'd use fossil-fuel natural gas. Annual upgrades to our landfill gas recovery system mean that we are able to capture more and more renewable natural gas which can be used to heat and to generate power. These system upgrades also let us better understand how much biomethane is being released from the landfill. In 2016, 74% of the biomethane generated in the Landfill was captured, up from 71% the year before.

CHALLENGES

Between 2007 and 2016, the world's capacity to generate renewable energy doubled, according to the International Renewable Energy Agency. More people now have jobs in renewable energy worldwide than in oil and gas combined. Those shifts present big opportunities for the clean energy sector, and big challenges for how companies producing oil and natural gas will continue to do business. We want to grow and attract those clean energy businesses, and help the companies (and people) that rely on fossil fuels to shift their business models over time.

Recent changes in US climate policy has created a lot of concern, not just south of the border, but here in Canada as well. It's a good reminder of how important local action is on climate change. Vancouver is one of 30 cities across North America that have set some form of 100% renewable energy target, and that's just the start. We're also a member of several global networks, like C40 Cities and the Carbon Neutral Cities Alliance, that are working together to figure out what a clean-energy future looks like, and how to get there. Biomethane gas capture at Vancouver Landfill

UVEX

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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.



INDICATOR	BASELINE	2016	CHANGE
Kilograms of $\rm CO_2e$ per square metre of newly built floor area	20.7 tCO ₂ e/m ² (2007)	11.8 tCO ₂ e/m ² (2017)	-43%
Total tonnes of CO ₂ e from all buildings	1,625,000 tCO ₂ e (2007)	1,295,000 tCO ₂ e (2015)*	-20%

^{* 2016} natural gas data were not available in time for the publication of this report. Emissions are given for the most recent year available (2015).

Canada's largest Passive House is being built in east Vancouver. Passive House-standard buildings use up to 90% less energy than typical buildings.

2016-2017 SUCCESSES:

APPROVED A PLAN TO ELIMINATE EMISSIONS FROM NEW BUILDINGS BY 2030

Over half of all the carbon pollution in Vancouver comes from buildings—more than transportation and waste combined. In July 2016, Vancouver became the first major city in North America to set specific targets and actions to eliminate greenhouse gas emissions from new buildings by 2030, through the Zero Emissions Building Plan. The Plan takes a gradual approach, reducing emissions from newly permitted buildings by 60% by 2020 and 90% by 2025, and 100% by 2030. New buildings already produce 43% less carbon pollution today than they did in 2007.

The Plan focusses on improving energy efficiency first and foremost, and isn't a ban on any particular type of energy. In fact, a lot of it is just about better insulation, though standards like Passive House and the Zero Carbon Building Standard. Making sure your home is well-insulated and air-tight is like putting a sweater on a building. In winter, the walls and windows do a better iob of keeping the heat in, where it belongs! Some homes are so well insulated that they'll stay warm even if your power goes out in the middle of winter. This same principle works in reverse: in the summer, your home will stay cooler, meaning less need for air conditioning. The upshot of this? Using less energy means lower heating and cooling bills and a more resilient home.

PUSHED NEW REZONINGS TO LEAD THE WAY

Building to zero-emission standards isn't just good news for our environment but also for the people who live in these spaces. These new changes will mean better quality homes that are quieter, less drafty, and have better indoor air quality. The buildings themselves will need less energy to heat, meaning they can use smaller, simpler heating systems that make them inexpensive to operate and maintain.

Every year, 30 to 60 large new building projects in Vancouver go through a rezoning process, meaning they apply to the City to change the use allowed on that land (often this means increased density and more revenue). As part of negotiating a rezoning, the project must be built to a higher energy standard. In late 2016, Council approved an update to the Green Building Policy for Rezonings, the first step towards zero emission buildings by 2030. Building projects that fall under the updated Policy must cut carbon pollution by 50% or more, and meet new limits for heat loss and energy use. Builders and developers choose which type of heating system to stay under those limits, often using simple, locally developed approaches and technologies. The Policy doesn't ban anything. Even with natural gas water heaters and gas stoves, building projects can meet the new requirements. Most importantly, it won't cost any more to construct, maintain, or power such a building.



LIT UP THE NIGHT WITH LEAKY WINDOWS AND UNINSULATED ATTICS

A thermal image is a picture of the heat that comes off of an object: hot shows up bright yellow or white, while cold shows up as blue. Thermal imaging is a great way to easily find all the hidden ways your home is leaking heat (and money) into the cold outdoors. The City launched a program to help homeowners in single-family homes pinpoint their energy losses. We took images in five neighbourhoods throughout the month of January 2017. City staff will follow-up with homeowners later in the year. People who participated get their thermal image, plus information on available incentives to save energy.

CHALLENGES

We had a record-setting cold winter in late 2016 and early 2017. Heating bills (and carbon pollution) went up, as people used more energy to stay warm. This is a great reminder that we can't change the weather, but we can certainly design and retrofit our buildings to use less energy.

In 2016, we saw the second highest number of building permit applications in the City's history. While the City pushes forward with world-leading green building policies, we are also working to simplify our zoning and development regulations and reduce permit processing times. For example, we want to encourage Passive Housestandard buildings throughout the city, but some of our existing requirements in certain zones can get in the way. We can make the process simpler and more efficient for both applicants and staff by allowing for more flexibility for things like how floor space is used, building height, and building setbacks for buildings that meet the Certified Passive House standard.

One way building designers measure comfort inside a home is "overheated hours": the number of hours in a year the space is uncomfortably hot. A typical worst-case in Vancouver is currently 600 hours a year. The Green Building Policy for Rezonings cuts this by two-thirds, setting a limit of 200 hours. The walls and windows of a Passive House are thicker, providing better insulation and keeping the heat in during the winter (and the heat out during the summer).



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.



INDICATOR	BASELINE	2016	CHANGE
Per cent mode share by foot, bike and transit	40%*	50% of trips	+10%
Total vehicle km driven per person	5,950 km/person/year	4,060 km/person/year	-32%

^{*} Mode share totals for baseline year (40% of trips in 2008) was based on data gathered through a TransLink "Trip Diary" survey that is conducted about once every five years. To obtain more regular statistics, the City began an annual survey of Vancouver residents that is slightly different in methodology but is believed to better capture the full range of travel by residents. This will be used to measure Green Transportation indicators going forward.

The City worked with TransLink to deliver the most significant expansion of the downtown bus network in decades, including connecting the West End to Yaletown and Gastown.

2016-2017 SUCCESSES:

TRAVELLED 30 TIMES AROUND THE WORLD ON MOBI

Mobi by Shaw Go (Vancouver's public bike share program) has installed over 115 stations and 1.200 bikes since launching in July 2016. Anticipated challenges like helmets for all riders and a sometimes hilly city didn't slow riders down. On a busy week Mobi sees over 16.000 rides, and Mobi riders have already covered over 1.2 million kilometers: that's 30 trips around the world! Even during a cold. wet 2016 winter, people embraced Mobi, Ridership numbers show that public bike share isn't just a leisurely summer activity, but a great way to travel year-round. Staff continue to work on adding additional bikes and stations to the system.

BEGAN TRANSFORMING OUR ICONIC PUBLIC SPACES

There's a bright future ahead for exceptional public spaces in Vancouver. In 2016, 800 Robson Street (aka Robson Square) was closed to all motor vehicle traffic to create the biggest public space in downtown after Stanley Park and the Seawall. Public and stakeholder feedback helped us create a high-level design for Robson Square, and staff will continue to gather more input on the plaza's permanent design.

Meanwhile, VIVA Vancouver has been innovating public spaces, transforming road spaces into vibrant pedestrian spaces, and encouraging community, walking and cycling, and local businesses since 2011. Looking ahead, the City will refresh VIVA and produce a five yearstrategic plan for creative public spaces where people can play, meet their neighbours, relax and connect.

BEGAN REIMAGINING A HISTORIC RAIL CORRIDOR – THE ARBUTUS GREENWAY

The Arbutus Greenway now has a temporary path for all to enjoy. The wide pathway is separated from vehicle traffic and promotes urban recreation, such as walking, cycling and rolling, for people of all ages and abilities. In addition to active transportation and a future streetcar, there are opportunities to incorporate plaza space, public art, and urban ecology into the final design.

In early 2017, the City asked Vancouver residents about their vision for the future greenway and heard from over 4,000 people. The values, ideas, and themes we heard will be considered in the context of broader City objectives, and will help to guide the design process.

STARTED OUR JOURNEY TO BETTER REGIONAL TRANSIT

Transit service is continuing to improve with increased off-peak SkyTrain frequency, a 10% increase in frequency on 50 bus routes across the region, and a 15% increase in HandyDART service. The City also worked with TransLink to deliver a major trolley-bus network expansion in 2016, including connecting



the West End to Yaletown and Gastown, the most significant expansion in decades of the local bus network serving downtown.

All three levels of government have committed to advance the first phase of the Metro Vancouver Mayor's 10-Year Transportation Vision and the largest transit expansion since 2009. Phase One kickstarts pre-construction work for the Millennium Line Broadway Extension, so it will be ready to move forward when the next phase of senior government funding is announced.

CHALLENGES

Streets carry a lot of competing demands, and the City is working to improve safety, access and comfort for people walking, cycling and taking transit. Busy arterials often serve several purposes: they act as key transit and truck routes, provide access for emergency services, and accommodate local and regional motorized traffic. These arterials are also home to many of Vancouver's long-time commercial high streets, and there's often limited opportunity to expand the street right-of-way. With a large number of destinations, these are often at the heart of Vancouver's communities, and have the highest volumes of people walking and generate the most trips over all modes.

Making our streets better for all users requires a balancing act. Depending on the street width, and its context within the broader transportation network, reallocating road space can be difficult. This means we have to look at the whole road network, and develop a complete network that accommodates all modes, while managing the effects on congestion and existing users.

For the second year in a row, 10 per cent of Vancouver residents cycled to work and nearly a quarter walked to work.

The Arbutus Greenway represents a once-in-a-generation opportunity to repurpose a transportation corridor.



ZERO WASTE

GOAL: CREATE ZERO WASTE

TARGET:

Reduce solid waste going to landfill and incinerator by 50% from 2008 levels.



DECREASE IN SOLID WASTE SENT TO LANDFILL AND INCINERATOR SINCE 2008

INDICATOR	BASELINE	2015*	CHANGE
Annual solid waste disposed to landfill and incinerator from Vancouver	480,000 tonnes (2008)	351,000 tonnes	-27%

^{*} 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.

2.6 million coffee cups wind up as garbage in Vancouver each week. The City is looking at ways to deal with the waste from these and other single-use items.

2016-2017 SUCCESSES:

SUPPORTED MICRO-CLEANING PROGRAMS AROUND THE CITY

Every day, micro-cleaning heroes work tirelessly to keep our city safe, clean, and litter-free. In 2016, micro-cleaning crews supported through the City's Street Cleaning Grant Program cleaned 400 city blocks and collected over 12,000 bags of litter and 63,000 needles! Micro-cleaning is different from the sort of street cleaning typically done by City crews and offers jobs and job skills training for youth and adults with barriers to traditional employment.

LAUNCHED STREET-LEVEL RECYCLING PROJECT IN THE WEST END

Finding a place to recycle while you're out and about can be difficult. Thanks to the City and Recycle BC's new onstreet recycling pilot, recycling in the West End just got easier. In August 2016, 31 recycling stations were installed throughout the West End on Denman, Robson and Davie Streets and at Second Beach. Stay tuned for more zero waste progress as the City continues to work with Recycle BC and product producers to find creative solutions to make recycling easier in Vancouver. A map of the new recycling bin locations is available at RecycleBC.ca.

REDEPLOYED RECYCLING CREWS TO KEEP STREETS CLEAN

In October 2016, Recycle BC took on full responsibility for Vancouver's residential recycling program and the City ended its term as their contracted service provider. This means that taxpayers will no longer have to pay a recycling utility fee. This change freed up more staff and resources to work on other important programs that will get us to our Zero Waste Goal, including preventing and collecting litter, dealing with abandoned and illegally dumped waste, and other work to help keep our city clean and green.

CLOTHING DOESN'T BELONG IN THE LANDFILL

Every year 40,000 tonnes of textiles, including 19,000 tonnes of clothing, is sent to landfill or incinerator in Metro Vancouver. To better understand how to cut textile waste in the region, the City partnered with the Leverage Lab, Metro Vancouver, the Vancouver Economic Commission, and industry. This group worked together to understand why so much clothing ends up in the garbage, what happens to donated items, and how to support reuse and recycling options.

Community groups and businesses are also doing important work through local repair and reuse markets. Upcycling workshops hosted by Frameworq included sewing and repair lessons where people shared equipment and materials – some even created entirely new clothes! In addition, sorter-grader companies like Trans-Continental Textile Recycling are helping to keep textiles out of the landfill and incinerator. Unwanted clothing gets sorted into over 400 different categories for personal and industrial reuse and recycling locally and



overseas. Much of their inventory comes from clothing donated to charities and thrift stores, and they are able to find a use for almost everything – even your old socks! Clothing is a valuable material and resource that should be donated, reused or repaired whenever possible.

CHALLENGES

Waste can seem like an inevitable result of our grab-and-go lives, but it doesn't have to be. The City has made a lot of progress towards its Zero Waste goal, but we know that achieving zero waste in Vancouver is beyond the ability of any one organization. We have to nurture a zero waste culture and make reducing and reusing a priority. The City will work with industry experts, other levels of government, residents and businesses to help develop two new strategies. These will reduce waste from single use items and provide long-term guidance for Vancouver to reach zero waste.

They're so convenient, but single use items have a lasting impact on our environment long after their short use. They use up a significant amount of resources from our planet that are often not reused or recycled. They create a huge amount of waste in our landfills. and cost Vancouver taxpayers more than \$2.5 million a year to clean up, as litter in our parks, green spaces and shorelines. Finding ways to effectively reduce waste from single use, difficult to recycle items, has been a challenge for cities across North America. Vancouver's Single Use Item Strategy will explore how we can reduce waste from disposable hot and cold beverage cups, plastic and paper shopping bags, and expanded polystyrene (EPS) and other take-out food containers.

As we develop our long-term strategy, the City remains optimistic that a zero waste future is not only possible, it's a critical part of solving today's climate crisis. Zero Waste 2040 will guide the decisions and waste management investments we need to make to reduce and ultimately eliminate waste sent to landfill or incinerator.

In 2016, micro-cleaning programs provided 35,000 work hours to people with barriers to traditional employment.



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.
- Plant 150,000 new trees.
- Restore or enhance 25 hectares of natural areas between 2010 and 2020.
- Increase canopy cover to 22% by 2050.



INDICATOR	BASELINE	2016	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)	82,000 trees	+82,000**
Total hectares of natural areas restored or enhanced	(2010)	20 hectares	+20
Per cent of city's land area covered by tree leaf canopies	18% (2013)	Survey to be conducted in 2018	

Almost every Vancouver resident lives within a 10-minute walk of a green space. No other North American city even comes close.

2016-2017 SUCCESSES:

PLANTED A NEW BEE SANCTUARY AT FIFTH AND PINE

Urban bees and butterflies rely on our gardens and green spaces for food and shelter. One of the actions in the Park Board's Biodiversity Strategy is to make our parks and gardens friendlier to bees, butterflies, and other pollinators. In return, these beneficial insects pollinate our plants, crops, and fruit trees, giving us beautiful flowers, fruits, nuts, and honey. In late 2016, hundreds of residents helped us plant 1,500 plants in a new pop-up park at Pine Street and West 5th Avenue. Diverse flowering plants-much friendlier to pollinators than normal lawn—will make this an urban haven for pollen-carrying critters. The new park is also home to a large rainwater cistern that collects rainwater in the wet season to use for watering in the summertime. UBC design students are using the park to test methods (such as new types of bee houses) for enhancing pollinators and teaching residents about urban biodiversity.

BUILT A BETTER EAGLE'S NEST IN LOCARNO

Bald eagles are a well-loved part of Vancouver's biodiversity. Eagles thrive because of the richness of food supplies along our beaches and shorelines, and the number of active nests in Vancouver has gone up to around 12, from only one or two in the 1960s. Five years ago a pair of bald eagles decided to make Locarno Beach Park their home, on a Park Boardbuilt platform in a Douglas-fir tree nearly 30 metres up. The platform has an aluminum frame that holds it to the tree. Unfortunately the nest the eagles built hasn't been holding up, and strong winds have blown sticks (and baby eagles) off the platform. In September 2016, a Park Board crew of arborists climbed up again. They added larger branches to provide better landing spots for the adult eagles and weaving together a stronger and safer nest. The work was directed by David Hancock, a well-known advocate for eagles, as well as the dedicated community of nest monitors in the Jericho area.

Over 21,500 new trees were planted in Vancouver in 2016.

^{*} Vancouver's Park Board is improving the measurement for 5-minute access to green space. The City will transition to the new measurement in the next version of the Greenest City Action Plan. See the Challenges section for more details.

^{**} Private tree sales and community stewardship numbers were reassessed in 2016, resulting in an increase in total number of trees planted between 2010 and 2013.



STARTED A NEW PLAYBOOK FOR VANCOUVER'S PARKS

Almost 100% of Vancouver's residents live within a 10-minute walk to green space, but we have 630,000 residents living in what is already one of the most densely populated cities in North America. With another 150,000 people expected in the next 25 years, we need to start thinking about how we protect and improve our parks and recreation spaces. Starting in May 2017, the Park Board launched VanPlay, a year-long public conversation on a citywide vision for 240 public parks and 55 recreation facilities in Vancouver. Coming out of this will be Vancouver's Playbook, a new plan to guide how we create vibrant parks and recreation over the next 25 years. This is a chance for all of us to imagine what kind of future we want. You can get involved at vancouver.ca/vanplay.

CHALLENGES

Our five-minute walk target measures how much land is close to green space, not how many people. Also, how easy it is for them to walk there? Are there big hills or busy intersections on the way? And what do you get at the end of your walk? Is it a small patch of grass with a tree or is it a swimming pool?

The Park Board wanted to fully understand how to measure real success, when the goal is really about access to high-quality green space for all residents. A new method now looks at real human travel patterns. a smarter measurement for smarter planning. What did we find? In 2011, 99% of Vancouver residents lived within a 10-minute walk of green space, 97% lived within 8 minutes, and 80% lived within 5 minutes. Now the Park Board can look at where new parks can fill in the gaps, how to help our high-demand parks work more efficiently, and how to improve access to existing parks.

The largest big-leaf maple tree in BC is located in Stanley Park: 29 metres tall with a trunk circumference of almost 11 metres.





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.



INDICATOR	BASELINE	2016	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)	476 L/person/day	-18%

Water leaks account for about 14% of all water use in the average home. One leaky toilet can waste up to 135 litres a day.

2016-2017 SUCCESSES:

BEGAN PHASING OUT SINGLE-PASS SYSTEMS

Every year, nearly 4 billion litres of Vancouver's drinking water goes through single-pass systems, where water circulates once through a piece of equipment and then, without any recirculation or reuse, straight down the drain. This is 50% more than the total used by all City of Vancouver and Park Board facilities combined, indoor and outdoor!

Single-pass systems are already banned in many North American cities. In early 2017, City Council approved a two-step approach to phase out several types of single-pass systems, new and existing, by 2020. This will cut the water used per person in Vancouver by 3% and help us get closer to our Clean Water target. Using less water also means we can meet the water demands of a growing city for longer, before expensive system upgrades become necessary.

Replacing a single-pass system with an alternative saves money. One local lab installed a system to recirculate water used in its fume-hood systems. This cut their water usage by 100,000 litres a day, and paid for itself in less than six months through lower water and sewer utility bills.

GETTING WATER USE UNDER PAR AT VANCOUVER GOLF COURSES

Maintaining high-quality greens on golf courses can use up a lot of water. Working with the City's three public golf courses and three private ones within Vancouver, the City allocated water "budgets" based on what they've used in the past. All stayed "within budget" in 2016. We are the only municipality in the Lower Mainland that have taken this approach with our golf courses! Now they're measuring how much water they used, and trading best practices (like better irrigation systems and better maintenance) to become more water-efficient and droughtresistant in future summers.

FLUSHED OUT VANCOUVER'S LEAKY TOILETS

Silent but deadly (to water efficiency at least), leaky toilets can be the biggest water waster in the home. Finding and repairing these leaks saves treated drinking water for where it's needed most: cooking, cleaning and (of course) drinking. In 2016, the City mailed test kits to over 167,000 homes. People could also enter a contest to show they'd used the kits to detect leaks. Winning a year's supply of toilet paper was nothing to sniff at either.



CHALLENGES

Vancouver's water system delivers over 300 million litres of drinking water to Vancouver homes and businesses every day. With such a complex and aging network, water mains and service connections (the pipes that connect from the mains to your building) can occasionally leak and even break. System pressure, disturbances from construction, even cold weather can cause this. Cutting these water losses as guickly as possible is key to keeping Vancouver's water use down. The City has dedicated crews that conduct leak surveys using ultrasound. Crews listen for noises that might mean a leaky pipe, even if any water hasn't surfaced yet. This program so far has already saved over \$1.7 million worth of water. Plus. the City's capital replacement plan means we proactively replace pipes, before they break.

E. coli counts in False Creek can get pretty high in the summertime. We found the one main cause is boaters who aren't properly managing their waste, such as by emptying their sewage tanks at marinas. Speaking with them, many people mentioned there were too few of these services, or that they were inconvenient to use. Going forward, the City will tighten up requirements for sewage management services, working with marina and boat operators to make that happen. Meanwhile, we'll look at a test project in summer 2017 for a mobile pump-out service that can go right up to the boats themselves.

Kids: "Dad, why is there a seal living in the toilet?"

Dad: "No kids, I said it's important to have a good seal in the toilet tank. It's slightly different."

Actual feedback on the leaky toilet contest from one Vancouver resident

McCleery Golf Course in Vancouver





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

TARGET:

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



42% INCREASE IN NEIGHBOURHOOD FOOD ASSETS **INCREASE** IN SINCE 2010

INDICATOR	BASELINE	2016	CHANGE
Total number of neighbourhood food assets*	3,340 food assets (2010)	4,740 food assets	+42%
in Vancouver			

^{*} Food assets include: number of community garden plots, farmers markets, community orchards, community composting facilities, community kitchens, community food markets, and urban farms.

In 2013, City Council adopted the Vancouver Food Strategy to become a global leader in urban food systems. In 2016, our Strategy won the first-ever Milan Pact Award for our work in sustainable food systems.

2016-2017 SUCCESSES:

HELPED MAKE COMMUNITY GARDENS MORE BEAUTIFUL AND USABLE

Vancouver's seen a surge in community gardeners, with 4,450 garden plots growing healthy local produce all across the city. In addition to increasing the amount of garden space, we want to make sure existing gardens are the safest, most beautiful and usable they can be. In 2016, the City and the Park Board provided nearly \$30,000 in small grants to 33 community gardens. The money went towards buying new equipment, laying down new pathways, and rebuilding fences, garden boxes and composters. Gardens bring people together, to share skills, build community, and improve access to local food. A beautiful and well-equipped garden can do that even better.

GETTING COOKS BACK INTO COMMUNITY KITCHENS

A community kitchen is a place for people to gather and prepare meals together. Often, participants learn new healthy eating and cooking and preparation skills. Community kitchens provide spaces for people with common interests, but different backgrounds or health needs to come together to share knowledge. In 2016, the City looked at 47 City-affiliated kitchens, and found that some were not being used to their full potential, even though they may be in good condition. Now, the City, the Park Board, and the YMCA are working together, training staff to turn these spaces back into active, well-used kitchen spaces for everyone.

SUPPORTED MOBILE PRODUCE MARKETS

Everyone knows food brings people together, but for some residents, limited income or simply getting to a store can be a barrier to getting nutritious. affordable food. Neighbourhood Food Networks are breaking down some of those barriers, and every year the City helps them through the Sustainable Food System Grant, In 2016, we granted \$188,000 to organizations like the Cedar Cottage Food Network. They have been hosting mobile produce markets every week for the last five years, selling fresh fruit and vegetables (local and organic wherever possible) to people in the community at wholesale cost. These markets also create a welcoming gathering place, where people can sample recipes and swap stories with their neighbours.



CHALLENGES

Our Vancouver Food Strategy has achieved a lot since 2013. The number of community gardens is up 40%, and we were one of the first cities in Canada to adopt bylaws to permit and legitimize urban farming. Community food market guidelines help bring fresh food to underserved neighbourhoods and residents, but our Strategy could be doing more, and we're planning a refresh of the Strategy. In developing it, we will look at areas like better meeting the food needs of children and families, increasing food literacy opportunities, and aligning food work with indigenous food system goals.

"I've managed to kill every plant I've ever had. Gardening was out of the question. But with just the sheer number of gardens now, and all the friends we know who grow their own vegetables, this spring I finally got my own plot. Hope you like radishes, kids."

Actual feedback on Greenest City from one Vancouver resident



MURB retrofit incentive increases EV affordability in existing buildings of

> Cellular repeaters in underground parking for EV charging includes services and propagation for information vehicles

E Hubs supplement the barne charging

Construction requirements reflect building use

CLEAN AIR

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

TARGET:

• Meet or beat the most stringent air quality guidelines from Metro Vancouver, BC, Canada, and the World Health Organization.



INDICATOR	BASELINE	2016	CHANGE	
Total # of instances of not meeting air quality standards for ozone, particulate matter (PM2.5), nitrogen dioxide and sulfur dioxide from both the Kitsilano and Downtown stations combined*	27 (2008)	0	-100%	
Air quality metrics are measured by Metro Vancouver from data from one monitoring station at Robson Square in Vancouver. The				

Kitsilano station is offline and availing relocation. Four indicators of air quality are used for comparison to world standards. They are: 24 hour average particulate matter (PM2.5) concentration >25 µg/m³, one hour average nitrogen dioxide (NO₂) concentration >200 µg/m³, 24 hour average sulfur dioxide (SO₂) concentration >20µg/m³, and eight hour ground-level ozone (O₃) concentration >52 µg/b. In BC and across the country, the number of EVs went up by over 60% in 2016. There are around 1,000 EVs in Vancouver now. So many people are making the switch there could be 30,000 EVs by the mid-2020s.

2016-2017 SUCCESSES:

AN ELECTRIC VEHICLE CHARGER WHERE AND WHEN YOU NEED IT

We're starting to see a (quiet) revolution on Vancouver's streets, as more and more residents are switching to electric vehicles (EVs) and plug-in hybrids. There are so many reasons now to make the switch. EVs can travel five times further on the same amount of energy, compared to a normal gasoline vehicle. Charging an EV in Vancouver costs the equivalent of 25¢ a "litre", and they cost less to maintain (no oil changes!). EVs themselves are coming down in price, with new, more affordable models coming out every year that can travel over 300km on a single charge. No tailpipes mean we all breathe cleaner air.

We still need to help make EVs a choice that works for everyone. Even with over 250 public charging stations throughout the city, convenient access to them can be tricky. Public stations may be too slow when you're only parking for a short time. Others find it more convenient to charge at home, but can't because they live in a condo that's not equipped yet. It's a chicken-or-the-egg situation: no stations without EVs, no EVs without stations. We want to help solve this. Adopted in 2016, the Electric Vehicle Ecosystem Strategy looks at users, vehicles, and the entire system as a whole. How many people live in a particular neighbourhood? What types of housing and public services are located there? How much time do residents spend in those locations? These are the sorts of questions that go into making an EV "ecosystem", a network with charging stations in the places people need them. The Strategy will expand access to home and workplace charging and improve the public charging network. Over the next five years (the lifetime of the Strategy), we could start seeing the beginning of the end of exhaust fumes in the city!

HELPING BUSINESSES GET INTO THE CHARGING GAME

For the EV ecosystem to grow, businesses will have to provide EV charging as well, for people who don't have access at their home or workplace. Some businesses in Vancouver already are, at their own cost, but under current laws in BC, businesses cannot charge fees for electricity. This makes it harder for some businesses to justify providing EV charging. The EV Ecosystem Strategy helps get past

In a recent survey of Vancouver residents purchasing a new car in the next five years, 85% are either planning on or would consider an EV.



this early hurdle. Places like grocery stores and coffee shops, where people make quick stops, make great locations for "Ehubs", clusters of fast chargers that can get you ready for your day's driving in less than 5 minutes. The City will partner with businesses like these to own and manage EHubs for the next five to seven years. Local governments are allowed to charge for electricity, so we are more able to provide stable funding to support these early stations. At the same time, we're working with the provincial government to enable businesses to recoup the costs of charging stations, and with international partners so that installers of EV stations can sell carbon credits for their efforts.

CHALLENGES

Vancouver residents breathe some of the cleanest air in the world. Other cities and countries aren't so lucky. Air quality and urban pollution are quickly becoming a global issue. Out of the 20 world cities with the most air pollution, 13 are in India, according to the World Health Organization. Meanwhile, everyone's heard about Beijing's "red alerts": near-total shutdowns of the city due to smog. China and India are taking huge steps towards cleaning up. China is aiming for 20% of vehicles sold annually to be powered by alternative fuels by 2025. In India, no gasoline or diesel cars will be sold in the country by 2030. The world is moving away from fossil fuel-burning vehicles, and we need to move with it. Reducing our dependence on fossil fuels will keep our air clean, improve the health of Vancouver residents, and set us up for a world where gas guzzlers are a thing of the past.

Between 2011 and 2014, the City's EV charging stations logged 13,000 charging sessions over a three-year period. In 2016 alone, we logged over 33,000 sessions. At the same time, the average charging session is twice as long as needed to fully recharge the battery, meaning that people are taking up charging spots longer than they need to. With EV demand growing quickly, the City is working to speed up charger deployment in a thoughtful way, and looking at charging fees for station users, to be ready before the next wave of EVs arrives.



GREEN ECONOMY

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

TARGETS:

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



INDICATOR	BASELINE	2016	CHANGE
Total number of green jobs	16,700 jobs (2010)	24,800 jobs	+49%
Per cent of businesses engaged in greening their operations	5% of businesses engaged (2011)	Survey to be conducted in 2017	

"[Since 2011,] by virtually every measure, BC's cleantech sector shows dramatic growth: the number of cleantech companies is up 35% to 273, the number of BC-based employees is up 20% to 8,560, average wages have increased by 24% to \$84,000 and the amount of equity raised is also up 25% to \$6 billion."

KPMG, British Columbia Cleantech 2016 Status Report

2016-2017 SUCCESSES:

25,000 GREEN JOBS IN VANCOUVER

Green and local food jobs in Vancouver surged between 2014 and 2016. Nearly 24% growth means almost 4,800 new and transitional green jobs over the last three years, and over 8,000 since 2010. In part due to the City's green building policies, jobs in green building design and construction, and associated products, increased by 40%. Employment in the local food sector, which includes food processors and beverage manufacturers, grew by 27% as distribution systems improved and as people continued to buy local. Materials management and recycling jobs grew 15% as the business case for recovering and reusing waste gets stronger.

USED THE CITY AS A TEST BED FOR INNOVATION

The City of Vancouver and the Vancouver Economic Commission (VEC) work together on the Green and Digital Demonstration Program (GDDP) program to support innovative local entrepreneurs and startups by testing their products or services on cityowned assets. It helps businesses to quickly grow, commercialize, and access new markets, using the VEC's support and the City as a reference. As of early 2017, two companies have launched since participating in the GDDP, while 11 more are in preparations. Bokoeco makes a natural, probiotic-based product that repels pests and controls the smell and methane released by food scrap and compost bins. Their test-run with the bins at the Carnegie Centre downtown was a success story that let them engage other organizations. Meanwhile, LoopShare's involvement in GDDP gave them the credibility to raise millions in global investment for their product: an electric scooter share system that City staff will test in summer 2017 while on City business.

GREEN SCREENS HAVE COME A LONG WAY

Vancouver is the third largest film and TV production centre in North America. and a world-class destination when it comes to sustainable production. As part of the 2016 Vancouver International Film Festival, the Sustainable Production Forum brought together industry, studio executives, and global and local sustainability organizations for a day of learning about greening film production. The VEC hosted training workshops on reducing on-set and postproduction waste, and myth-busting common misconceptions about the cost and convenience of sustainable production. As part of the VEC's long-term support of sustainability in the industry, the VEC's office of the Vancouver Film Commissioner also works to encourage local innovation around greening of sets.



LAID THE GROUNDWORK FOR A GREENER FLATS

In 2016, the Flats Climate Action Program (FCAP) helped 18 businesses in the False Creek Flats and surrounding industrial zones to reduce energy, fuel, waste, water, and associated carbon emissions. These businesses represent nearly 22,000 tonnes of carbon pollution and over 1,100 employees. FCAP is a partnership between the Vancouver Economic Commission and Climate Smart Business with funding from the Vancouver Foundation and BC Hydro.

FCAP inspired several innovative approaches among Flats businesses to reduce carbon pollution. Landsea Tours installed a home-built greywater system to capture and filter the water used to clean buses, so that it can be used to flush toilets at their headquarters. Penfold's Roofing converted a number of its vehicles to propane. Espressotec has taken on the challenge of becoming a zero waste business. FCAP is also helping to identify older industrial buildings that are good candidates for energy retrofits, which would significantly cut the carbon pollution associated with older building stock.

CHALLENGES

Businesses all across Vancouver are already shifting their practices to be more sustainable, and we need to help businesses learn from each other. After all, what's cutting-edge for one company could be already tried-and-true for another. In today's economy, there are many new companies starting out as values-driven businesses: ones that see sustainable business practices as the new normal. Later in 2017, the VEC will be launching a survey and a platform for more companies to make that transition to greener ways of doing business.

Clean tech companies face unique challenges on the road to success. They often need more time and capital funding to go from lab to market, due to the complexities of scaling up industrial technology. They also need flexible industrial space, and are often working with limited cash and resources. The GDDP helps companies take the next step towards commercialization. The VEC also runs a Capital Attraction program, and is supporting more technology demonstration opportunities regionally.



LIGHTER FOOTPRINT

GOAL: ACHIEVE A ONE-PLANET ECOLOGICAL FOOTPRINT

TARGET:

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



INDICATOR

BASELINE

2015

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)

18,400 people empowered to

+17,800

* "People empowered to take action" are defined as those who are enabled by City-supported programs to change their lifestyle or are implementing a commulty project that helps Vancouver achieve its Greense 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 in 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 2016, \$250,000 of the Greenest City Fund went to support six great projects. Meanwhile, the Neighbourhood Small Grants program helped 123 smaller projects get off the ground, supporting and engaging over 1,000 people to improve their little slice of Vancouver.

2016-2017 SUCCESSES:

STUDENTS AT CITYSTUDIO HELPED BUILD THE GREENEST CITY

Every year we invite CityStudio students to unleash their creativity to make Vancouver more livable, joyful and sustainable. In 2016 student projects were largely focused on Northeast False Creek. Teams came up with projects looking at Greenest City themes like building social connections, reducing wasted food, and making walking and cycling safer and more fun. Umbrella Taxi "drivers" (local artists, dancers, and actors) helped pedestrians stay dry on a rainy day while having a fun chat as they walked them to their destination. Teatalk brought total strangers together to connect over free tea. The Food Recovery Map highlighted grocery stores and cafes in the neighbourhood that sell food for less when it's close to the best-before date, meaning less food gets thrown out. And Illumilane turned a bike lane and walkway into interactive art, using rainbow-patterned lights that helped make the walking path more visible at night. Pressure-sensitive lights also rewarded cyclists who were riding safely and warned them if they were going too fast. These projects increased engagement between residents of Northeast False Creek and helped show what a more sustainable and liveable future neighbourhood could look like.

RELAUNCHED GREENEST CITY FUND

The first Greenest City Fund ran in partnership with the Vancouver Foundation over four successful vears. \$1.9 million went out to support nearly 600 amazing projects, all led by residents and community groups working to make the Greenest City a reality. Now, a new version of the Greenest City Fund launched in 2017 with two grant streams: the Greenest City Grant and the Greenest City -Neighbourhood Small Grant. In the meantime, in 2016 the Fund supported six projects with \$250,000. These projects looked at issues of recovering wasted food, beekeeping, and helping newly arrived residents make use of the city's bike networks.

HELPED NEIGHBOURHOODS FORM "GREEN BLOCS"

Neighbours working together can accomplish amazing things. With help from the Greenest City Fund, Evergreen relaunched the Project Green Bloc program, which helps Vancouver residents band together to measure and reduce their ecological footprint through a community project. Neighbours gather into teams to learn new skills and develop ways to gradually improve how they live and



function as a neighbourhood. As of early 2017, the new and improved Green Bloc has already signed up four neighbourhoods, from South Cambie to the West End.

Connecting with neighbours towards a common goal is a great way to move the dial: between 2013 and 2015, the first Green Bloc Neighbourhood in Riley Park reduced their collective ecological footprint by 12%. These pioneers showed that any resident of Vancouver can make a difference. Getting a bunch of your neighbours together to make your neighbours together to make your neighbourhood more beautiful, connected and resilient? It's an amazing feeling. Contact Evergreen (**evergreen.ca**) to get your own Project Green Bloc.

CHALLENGES

Vancouver is growing quickly. How do we build a better sense of community when everyone is new? A great example is Northeast False Creek (NEFC). With the viaducts coming down and a whole new area of Vancouver opening up, we are looking at how future residents can build personal connections to their city and their new neighbourhood. One CityStudio team explored this in 2016 with a historical plaque and video project uncovering the hidden stories for eight sites in NEFC and Chinatown. This was part of the Imagination Zone, a series of CityStudio projects focussed on NEFC. The Imagination Zone will also help in planning how we connect with residents over the future of NEFC.

Measuring Vancouver's ecological footprint involves knowing how people travel, where they live, and how much they consume in terms of food and materials. Much of the data we need has been unavailable since 2006, but this changed with the return of the national long-form census in 2016. The City can now use the data to improve and re-measure Vancouver's ecological footprint, a big step towards figuring out how to reduce our overall environmental impact.





WALKING THE TALK

GREEN OPERATIONS

TARGETS:

- 50% reduction in GHGs from City operations from 2007 levels
- 70% waste diversion in public-facing City facilities, and 90% waste diversion in all other City-owned facilities
- Reduce water use in City operations by 33% from 2006 levels

INDICATOR	BASELINE	2016	CHANGE
Total tonnes of CO ₂ e emissions from City operations	490,000 tCO ₂ e (2007)	220,000 tCO ₂ e	-49%
Total waste diversion rate in City facilities and operations	65% (2013) (public-facing facilities)	65%	0%
	85% (2013) (other City-owned facilities)	91%	+6%
Total water use in City operations	2,680,000 m ³ (2006)	2,065,000 m ³	-23%*

* Without the benefit of universal water metering of our civic facilities, metric tracking is a best estimate only, based on available data and extrapolation. The accuracy of the metric will increase as water meters continue to be installed at prioritized City buildings. The Green Operations Plan is a collection of the City's strategies to lead the way on green initiatives. It's about how we do the work we do in a more sustainable way. The vision is for the City to become a world leader in environmentally responsible operations. Over the next few years Green Operations will also focus on reducing waste generation, continuing to improve the capture of landfill gas, reducing the use of toxic materials, and reducing water consumption in City operations.

2016-2017 SUCCESSES:

SET AMBITIOUS ENERGY TARGETS FOR CITY BUILDINGS

It's important that the City walks the talk. If we require buildings to be more energy-efficient throughout Vancouver, we'd better be doing the same with our own buildings. The City owns or operates nearly 600 buildings with over 11,000,000 square feet of floor space. For years, we've been upgrading and optimizing mechanical and electrical systems in our facilities, and shifting how our employees use energy. It's paid off: our carbon pollution from City facilities has dropped 23% since 2007, despite floor space going up 20% over the same time.

Now we're pushing it even further. In 2016, we set a target to derive 100% of the energy used in our buildings from renewable sources by 2040. This is 10 years ahead of the same community target set out in the Renewable City Strategy. Our new Renewable Energy Strategy for City-Owned Buildings sets out a plan to use our own buildings to lead the way towards a clean-energy future in the most cost-effective way.

One great example will be the new Fire Hall #17 planned in Southeast Vancouver. The current fire hall is 62 years old and in need of renewal. The new one will be Vancouver's first zeroemissions fire hall, meaning energy used by the building will be roughly equal to the amount of renewable energy created on-site. First, a more energyefficient Passive House-standard building design drastically cuts down its energy use. Then, solar panels on the roof will generate enough on-site renewable energy to offset its remaining emissions. This fire hall will be more resilient too: because it won't require natural gas, it will be much safer after an earthquake.

CUT WATER USE IN CITY PARKS

Parks need water, but the Park Board found some that could do with less. In 2016, Park Board staff found that Trout Lake and three sites within Stanley Park (the stream at the Zoo, the ponds at the Trains, and the Water Park) were four of the biggest water users in the park system. In some cases, cutting water use was as easy as installing a timer. now the water wheel and waterfall at the Stanley Park Train only comes on when the train passes by. Together, these four projects cut total water use



in the entire park system in 2016 by 31% compared to the 2012-2014 average, saving \$265,000 in water bills at the same time. The City has set a target to cut our City-operations water use by 33% between 2006 and 2020.

MADE OUR WASTE FLEET LESS POLLUTING

In 2016, 29 diesel powered refusecollection vehicles were replaced with compressed natural gas ones. These trucks now put out nearly 20% less carbon pollution than the units they replaced. Overall, the City's goal is to cut annual emissions from our fleet by 30% between 2007 and 2020.

DECONSTRUCTED CITY HALL'S EAST WING

The East Wing of City Hall was built in 1970, but it was only ever intended to be temporary, and it had a high risk of collapsing in an earthquake. This winter, it came down piece-by-piece: no wrecking ball, no huge dust cloud. Deconstruction is a process where a building is carefully taken apart and the waste material is reused or recycled as much as possible. With the East Wing, we aim to salvage or recycle 85% of the building's materials. Deconstruction also means better air quality, better dust control, and less noise.

Four water-saving projects in City parks cut water use in the whole park system by nearly a third in 2016.

The East Wing deconstruction project aimed to divert 85% of the material from landfill.

Subscribe to the Greenest City Newsletter at: vancouver.ca/greenestcity Facebook: Vancouver's Greenest City Initiative Twitter: @GreenestCity Instagram: @greenestcity

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GET INVOLVED!

We have only three years left until 2020. A lot is going to happen, and there are many ways to get involved. The City wants to work together with residents, businesses, and industry. Learning together (and from each other) is the only way we'll succeed. We'll provide information so you can understand what's in store, around things like zero waste, public spaces, sea level rise, and renewable energy. We'll talk with you, so you can ask questions and give us your ideas. And through our Greenest City Fund, we'll support community groups, industry, and of course residents, to help us make the greenest city a reality.

QUESTIONS? WE'VE GOT ANSWERS

Vancouver has a long-term plan to be powered by 100% renewable energy before 2050. What does that mean? Get the facts at **vancouver.ca/ renewablecity**. And if you get a group of people together, we'll come to you and answer your questions in person. Go to **vancouver.ca/100retalks** to find out more.

ACKNOWLEDGEMENTS

Thank you to all staff and members of the community for your hard work and for allowing us to share the stories of your success.