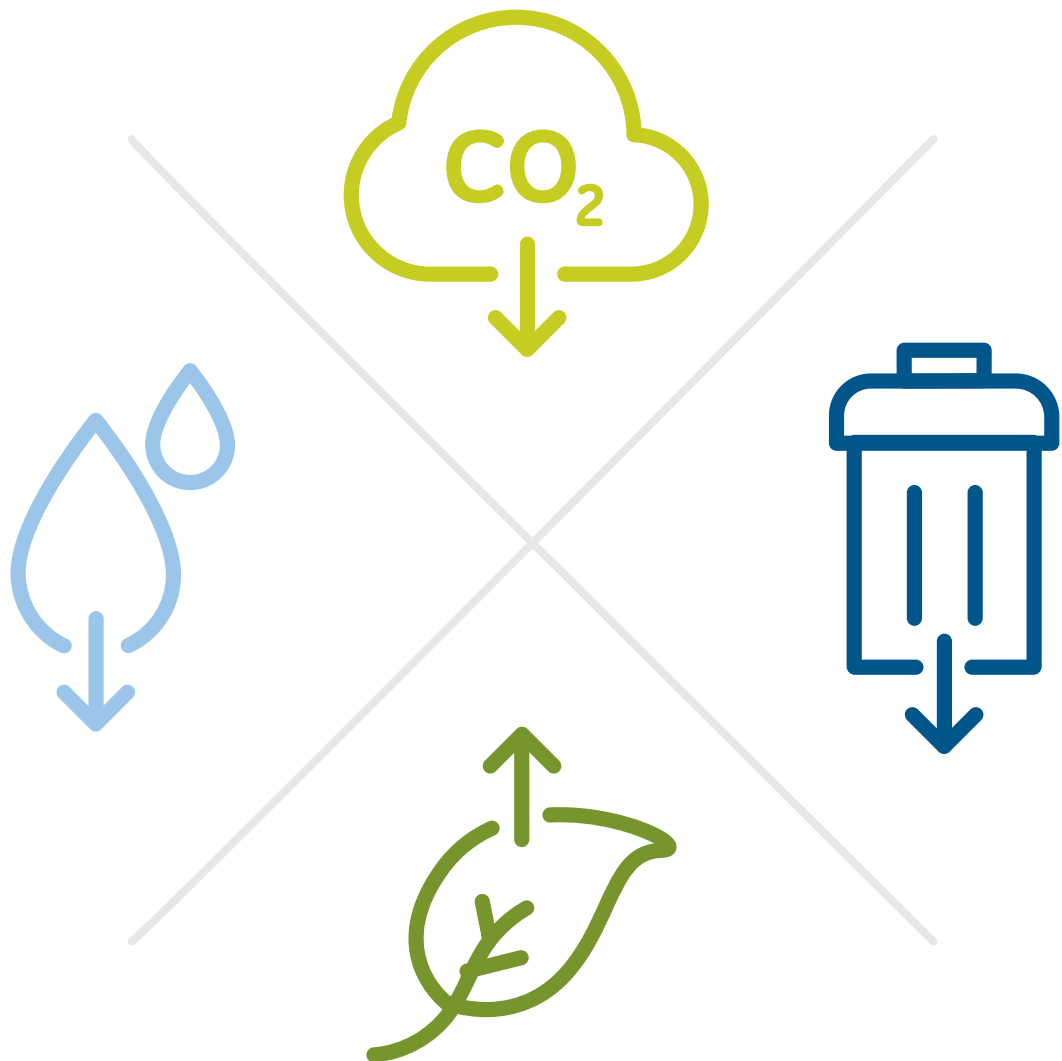


2020-2024

ENVIRONMENTAL MANAGEMENT PLAN



MESSAGE FROM CRAIG RICHMOND

President & CEO

Environmental stewardship is central to who we are and how we operate at YVR. Our commitment to sustainability is an integral part of our strategic plan and we measure our social, environmental, governance and financial performance every day.

Over the last decade, YVR has experienced unprecedented growth in passengers, while at the same time working to reduce our environmental footprint and pace our necessary construction program to sustainably serve our community's needs. As part of this development, we are investing in one of Canada's largest GeoExchange plants, which will significantly reduce the greenhouse gas emissions from heating and cooling our terminal building.

Our **2020–2024 Environmental Management Plan** lays the foundation for YVR's environmental stewardship over the next five years. It outlines our environmental priorities that are aligned with our mission and values, and sets measurable targets to reduce our carbon emissions, increase our water efficiency, divert waste

from our landfills and protect and enhance the habitat on Sea Island.

YVR is the place where people begin journeys of discovery and adventure. Our environmental plan is also a journey—one where we engage with our employees, passengers and the hundreds of companies operating on Sea Island to reduce the impact of our operations, care for our resources and connect British Columbia proudly to the world for generations to come.



CRAIG RICHMOND

President & CEO
Vancouver Airport Authority

Our environmental plan is also a journey—one where we engage with our employees, passengers and the hundreds of companies operating on Sea Island to reduce the impact of our operations, care for our resources and connect British Columbia proudly to the world for generations to come.



Mission: Connecting British Columbia proudly to the world

Vision: A world class sustainable hub airport

Values: Safety, Teamwork, Accountability and Innovation



VANCOUVER INTERNATIONAL AIRPORT

Vancouver International Airport (YVR), Canada's second busiest airport, strives to be a world-class sustainable hub. In 2018, we served a record 25.9 million passengers, with 56 airlines providing non-stop flights to 125 destinations.

Perhaps we enabled you to take a flight to visit family, meet with colleagues or embark on an adventure that connected you with a new experience or culture. In 2019, we were honoured to be recognized as the **Best Airport in North America** for a record tenth consecutive year by the Skytrax World Airport Awards, the global benchmark for aviation excellence. We take our responsibility to live up to that recognition very seriously and reflect it in all that we do.

Vancouver Airport Authority, a community-based, not-for-profit organization, manages YVR. Our unique operating model eliminates the need for shareholders and allows us to reinvest all profits towards improving YVR and the community. YVR is accountable to the region through a community-appointed Board of Directors whose focus is to ensure that we serve the best interests of the public. This operating model has helped us grow into a powerful connecting hub and economic contributor—one that supports thousands of jobs, connects local companies with customers around the world and welcomes millions of visitors to our province every year.

YVR occupies approximately 1,340 hectares of federal property on Sea

Island in Richmond, 15 kilometres from downtown Vancouver on lands traditionally occupied by Musqueam First Nations. Our historic, 30-year Friendship and Sustainability Agreement with the Musqueam Indian Band is enabling us to work together to build a sustainable and mutually beneficial future for the airport and our communities.

Sustainability is part of YVR's culture and guides every decision we make. Our goal is to grow in a way that brings economic, environmental and social benefits to our community, our province and our country—not only for today, but for many years to come.

Sustainability is important to us. Built on four pillars—Economic, Social, Environment and Governance—our approach to sustainability places the safety and security of our passengers, community and employees above all other considerations. Making financial, environmental and social choices that optimize environmental outcomes, create socio-economic benefit, spur innovation and enhance stakeholder relationships enables us to build on our success and create lasting value. We report annually on our activities through

We report annually on our activities through our

Annual & Sustainability Report

which can be found on our website at

yvr.ca

these four lenses through our Annual & Sustainability Report which can be found on our website at yvr.ca.

Sustainability is about more than reducing our impact; it is also about enhancing opportunities, including positive relationships with our business partners and the public. More than 26,500 people work on YVR's Sea Island and the Airport Authority works to influence and collaborate with those individuals and business operators to advance more sustainable approaches to planning and operations. Collectively, we are working together on solutions, engaging the public and passengers in advancing best practices and working hard to improve this place we call home.

ENVIRONMENTAL MANAGEMENT AT YVR

YVR is surrounded by the Fraser River and the Salish Sea, both significant ecosystems that are affected by rapid regional growth and home to environmentally sensitive fish and bird habitat. As such, implementing sustainability initiatives requires innovative thinking, designs and solutions.

YVR is supported by a community of informed citizens in the Vancouver area to incorporate sustainability as a central value to our operations. This approach reinforces our commitment to minimizing our environmental footprint, as we continue to develop as a world-class sustainable hub airport.

Vancouver Airport Authority strives to be a leader in environmental management. To effectively manage the environment, we maintain robust policies and procedures aligned with regulatory obligations, as well as our values. Those commitments are outlined clearly in our Safety, Security and Environmental Policy which is

outlined on the following page. We actively identify, seek out and report issues and hazards, promoting a culture of accountability. And we always seek to improve our performance because we care about our environment and our place in it. YVR's Environment Management Plan outlines our environmental priorities, which are aligned with our mission and values, and sets measurable targets in four key areas—**carbon reduction, water conservation, waste reduction** and **ecosystem health**.

Our environmental priorities:

carbon reduction

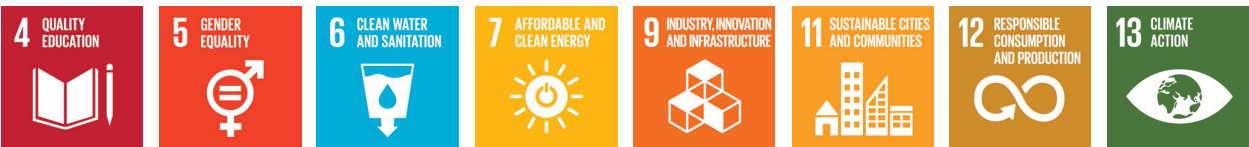
water conservation

waste reduction

ecosystem health

UNITED NATIONS SUSTAINABLE DEVELOPMENT

We are also doing our part to support the United Nations Sustainable Development Goals. Our most significant contributions are in the following eight areas:



SAFETY, SECURITY AND ENVIRONMENTAL POLICY

Our Safety, Security and Environment Policy serves as a reminder to each Airport Authority employee that we are all individually responsible to report hazards and to always look for ways to improve our programs and processes—especially regarding safety, security and environmental performance.

Each member of our Executive Team has signed the Policy, which is available externally in YVR's Environmental Management Plan.


Policy

Vancouver Airport Authority is committed to excellence in safety, security and environmental management. Our primary objective is to build, operate and maintain a safe, secure and environmentally sustainable airport for our employees, stakeholders and customers.

Our commitment is delivered through a collaborative approach with continuous review and improvement of our operating performance, processes and procedures. Our safety, security and environmental programs are driven and supported by our Executive Team working together with our strong, flexible and capable team of professional employees.

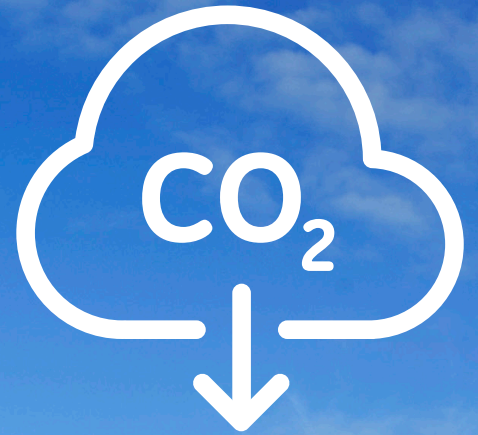
The Executive Team will lead our efforts to:

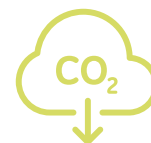
- Meet all applicable safety, security and environmental laws and regulations
- Train and educate our employees and allocate sufficient resources in support of safety, security and environmental excellence
- Set specific measurable goals for safety, security and environmental performance and regularly report on these results
- Promote transparency and accountability through a culture whereby employees and stakeholders can:
 - Voluntarily self-report any acts, deficiencies, hazards, incidents or occurrences that threaten safety, security or the environment; and
 - Actively and collaboratively identify, seek out, report, analyze and rectify hazards in order to prevent or mitigate re-occurrence and maintain a safe, secure and environmentally sustainable airport.



YVR's Environment Management Plan outlines our environmental priorities, which are aligned with our mission and values.

CARBON REDUCTION





→ PROGRESS TO DATE

Air emissions are a key indicator of our impact on the atmosphere and managing greenhouse gases is an important priority for the aviation industry. YVR invests heavily in time and resources to minimize our emissions and those of our partners, while advancing cleaner, more efficient use of energy. With a focus on reducing carbon, we work with employees, business partners and communities to minimize greenhouse gas emissions associated with vehicles, buildings and aircraft.

In our 2015-2019 Environmental Management Plan, we set an ambitious target to reduce Airport Authority greenhouse gas emissions by 33 per cent in 2020 from 2012 levels. We calculate annual emissions using a methodology consistent with the Government of British Columbia’s framework for reporting greenhouse gas emissions, which draws on protocols established by the World Resources Institute and the Climate Registry. We measure, monitor and review greenhouse gas emissions under several categories:

- Direct emissions from Vancouver Airport Authority-owned and controlled operations (Scope 1);
- Indirect emissions from the purchase of electricity for our operations (Scope 2); and
- Some activities we can only estimate and influence because they are generated by airport partner businesses and public sources (Scope 3).

Airport Authority **Scope 1 and 2** greenhouse gas emissions are generated by natural gas use, electricity, fleet vehicle operations, and back-up generator use. Strong passenger growth results

in greater heating, cooling and electrical demands. This, combined with annual fluctuations in weather, contribute to our annual energy demand and associated emissions. By 2018, emissions have decreased 12 per cent from 2012 levels, and emissions per passenger have improved 40 per cent.

The Airport Authority is also working to collaborate with partners to assist them in reducing the emissions under their control. **Scope 3** emissions are largely comprised of emissions from traffic on Sea Island, non-terminal buildings occupied by airport-affiliated businesses and partner airlines, ground support vehicles and equipment and aircraft landing, taxiing and take-offs. We have low to moderate control over these emissions, but we can influence reductions in greenhouse gases from the public and our business partners through land use planning decisions, construction permitting, investments in infrastructure, and facilitating collaboration amongst our business partners to support positive change.

YVR achieved a Level 3 Optimisation certification under the Airport Council International

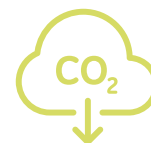
EMISSIONS BY 2018:

↓
12%

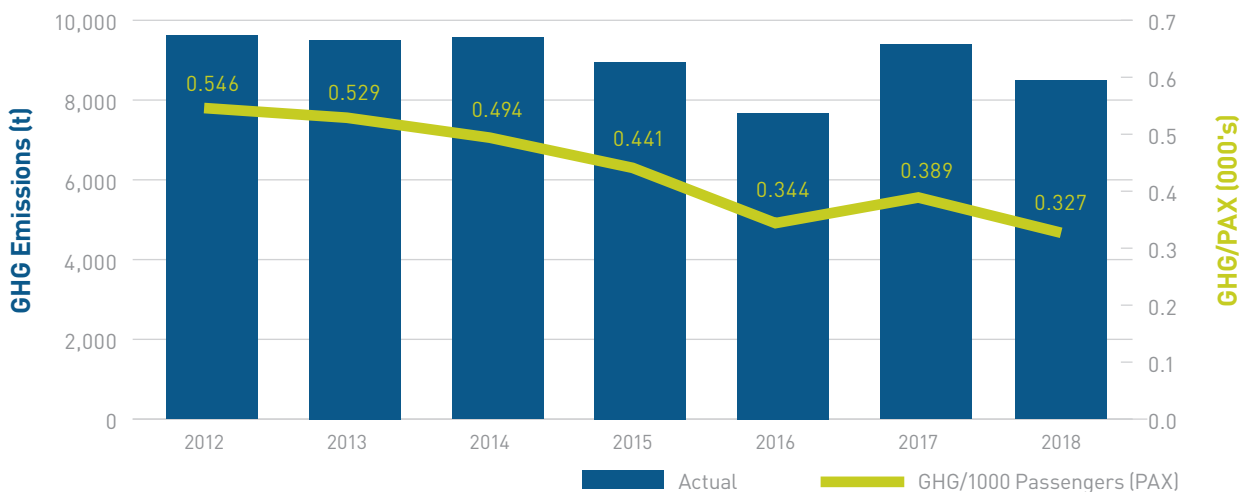
DECREASE FROM
2012 LEVELS

👍
40%

IMPROVEMENT
PER PASSENGER



Scope 1 & 2 Airport Authority Greenhouse Gas Emissions 2012-2018



Carbon Accreditation program in 2018, in recognition of reductions in greenhouse gas emissions and our work with tenants and business. Airport Carbon Accreditation is the independent, institutionally endorsed global standard for carbon management at airports.

Several initiatives have already been completed to reduce greenhouse gas emissions:

Building improvements

YVR's terminal building is the biggest building in BC and, as such, has a lot of heating and cooling needs:

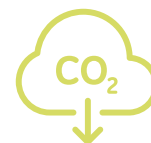
- YVR has made an investment in one of Canada's largest **GeoExchange plants**, located underneath our new Central Utilities Building. The construction is expected to be complete in 2021, with all systems fully operational in 2022. This investment will enable us to meet, and possibly beat, our 33 per cent reduction target.

- Investments in **roofing replacements** and ventilation improvements to the terminal building have provided insulating energy efficiency.
- We have been investing in **on-site renewable energy production** to reduce our emissions, offset electrical demand and increase resiliency. We use solar hot-water in our terminals to pre-heat washroom water, and our Airside Operations Building is supplied by over 90 per cent renewable energy.
- We are using schedules and sensors to **reduce lighting loads**, and have completed several LED conversion projects, including the largest apron LED lighting system in Canada
- YVR is **working collaboratively with BC Hydro** to advance low carbon electrification, energy conservation, and long-term infrastructure planning.

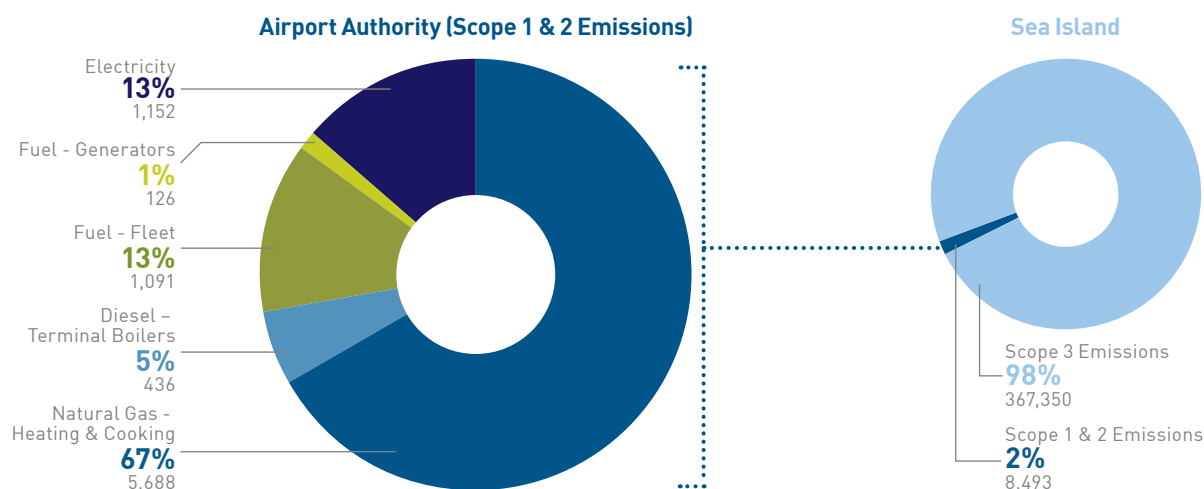


Level 3 Optimisation Certification

under the Airports Council International Airport Carbon Accreditation program



2018 GHG Emissions by Source (in tonnes CO₂e)



Fleet improvements

- YVR has a comprehensive **Fleet Management Plan**, which sets goals to right-size and electrify the fleet. We have made progress in electrifying our diverse fleet of vehicles, including 11 per cent electric light duty vehicles and 13 per cent electric heavy-duty/non-road vehicles. We introduced Diesel-hybrid JetSet buses and YVR fleet bicycles in 2016.

Working with business partners

- Our partnership with **Climate Smart** has helped 51 businesses measure and reduce their ecological footprint, creating stronger and more coordinated relationships with our tenants.
- New **LED lighting** and higher efficiency electrical heating and cooling units were installed in tenant buildings on Sea Island.

Greening our airfield

- We are working closely with our airline partners to **optimize**

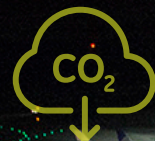
gate infrastructure so that aircraft engines can be shut off when parked at gates. We have installed infrastructure at all of our bridged gates, which allows aircraft operators to plug into electric power and heat/cool their aircraft with electricity instead of jet fuel—significantly reducing greenhouse gas emissions.

- In 2015, we set a goal to have our contracted ground handling companies, that support aircraft operations, to run **50% of their fleet on electric power** by 2020. In late 2019, 53 per cent were electric and YVR had installed 50 charging stations to support the electrification of ground handling operations.
- YVR has introduced bussing operations to take passengers to and from aircraft parked outside the terminal on the apron. To reduce the impact of bussing, we **introduced 8 electric apron buses** and were the first airport in North America to introduce

this technology on the apron. Bussing operations will allow more aircraft to operate at YVR during peak periods without the need for additional building space, thereby reducing heating, cooling and lighting needs.

Greening transportation

- As part of our commitment to sustainable transportation, we **invested \$300 million in the Sea Island portion of the Canada Line**, which opened in 2009. 21 per cent of YVR passengers are using the Canada Line to get to and from the airport and 36 per cent of Airport Authority employees commuted by transit, carpooling, biking or walking in 2018.
- 60 accessible **electric vehicle charging stalls** are available for public, employee and fleet use.
- Since 2012, YVR has added 5 km of **new cycling routes**, including additional bicycle parking at the main terminal, wayfinding signs and cycling maps.



**We aim to be
carbon neutral in
2020 and to achieve
net zero carbon
emissions by 2050.**

THIS PLAN GOING FORWARD →

The International Panel on Climate Change warns us that ambitious actions to reduce greenhouse gas emissions are needed in order to limit global warming to 1.5 degrees Celsius while achieving sustainable development. For many years YVR has acted to reduce our emissions and we will continue to take responsibility for them while supporting our partners in addressing climate change. We aim to be carbon neutral for Scope 1 and 2 sources in 2020, and to achieve net zero emissions by 2050.

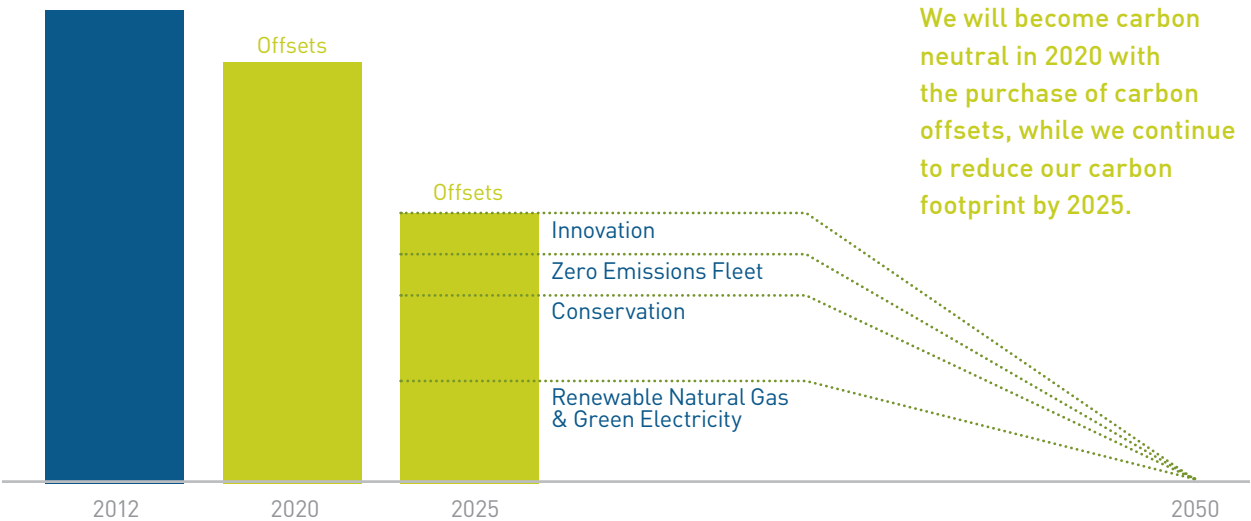
In 2020, the Airport Authority will purchase carbon offsets to balance our carbon emissions to zero and achieve carbon neutrality. While we always focus on reducing carbon emissions first, offsets are a cost-effective way to reduce emissions that currently have no viable low carbon alternative. We will explore purchasing high-quality offsets that meet international standards and are located in BC.

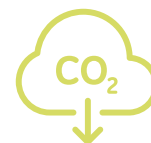
We are also committing to a net zero emissions future in

2050, as laid out in our Carbon Reduction Roadmap. In addition to achieving carbon neutrality through reducing our emissions and then accounting for what remains through the purchase of carbon offsets, we are working to further reduce operational energy use and displace remaining fossil fuel use with renewable fuels by 2050. This will be achieved through conservation, investments in a zero emissions fleet, investing in clean energy and innovation in new, low-carbon technologies.

Over the next five years, we will advance our commitment to zero with the commissioning of our GeoExchange system, the purchase of renewable natural gas and investments in more zero emissions fleet vehicles. We will also continue to develop innovative solutions to continue our progress, including a new approach to asset management, and will pursue opportunities through technology that will offer further improvements.

YVR's Carbon Reduction Roadmap to Zero Carbon by 2050





The aviation industry is making significant investments in reducing carbon emissions. The International Air Transport Association (IATA) adopted voluntary goals for international aviation emissions including:

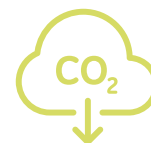
- **Improvements to aircraft fuel efficiency** by an average of 2 per cent per year from 2009 to 2020;
- **Carbon-neutral growth** in the international aviation industry from 2020;
- **Reduction of net emissions** from aviation by 50 per cent by 2050 compared to 2005 levels.

The Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) addresses emissions that come from aircraft, aiming to stabilize net carbon emissions at 2020 levels. This international agreement represents the cooperation of the aviation industry in addressing climate change and aims to tackle the emissions challenge on a global, inclusive scale.

Canada's Action Plan to Reduce Greenhouse Gas Emissions from Aviation was developed by government and industry,

setting ambitious goals to reduce emissions from both domestic and international operations through the following measures:

- Aircraft fleet renewal and upgrades
- More efficient air operations
- Improved capabilities in air traffic management



**Carbon neutral
(Scope 1 & 2)**

- Purchase Carbon Offsets – Continue to reduce emissions as much as possible every year and purchase carbon offsets to account for the remaining emissions that cannot be eliminated due to technical and financial limits.
- Explore achieving Level 3+ under the Airport Carbon Accreditation program with our commitment to carbon neutrality.

**Net Zero by 2050:
Actions by 2024
(Scope 1 & 2)**

- Complete construction and operationalise the Central Utilities Building with GeoExchange energy to heat and cool the terminal building in 2022.
- Continue to invest in retrofit projects that improve our building efficiency by conserving natural gas and electricity.
- Explore the purchase of renewable fuels as an alternative to fossil fuel-based natural gas and diesel.
- Continue to invest in electric buses and replace aging fleet vehicles with zero emission alternatives.
- Secure an electricity supply that is 100 per cent renewable through on-site solar installation and clean power purchases.
- Continue to research and develop innovative solutions for heavy-duty fleet and back-up generators.

**Support Sea Island
business partners
and public to reduce
emissions
(Scope 3)**

- Participate in Canada's Action Plan to Reduce Greenhouse Gas Emissions from Aviation, supporting airline fleet renewal and upgrades, more efficient air operations and improved capabilities in air traffic management.
 - Support industry advances to enable use of sustainable aviation fuels at YVR and low carbon air travel with advances in electric aircraft.
 - Support the replacement of ground handling equipment with electric options and installation of charging stations.
 - Reduce emissions from airline auxiliary power units by providing increased gate infrastructure such as ground power units and pre-conditioned air units and work with airline partners to maximize use.
 - Work with tenants through Project Green YVR, our tenant engagement program, to increase their capacity to improve energy performance and achieve cost-savings.
 - Continue to support opportunities for employees and the public to travel sustainably to and from Sea Island, using low carbon modes of transportation including active transportation, public transit and lower emission vehicles.
-

WATER CONSERVATION



→ PROGRESS TO DATE

While historically there has been a plentiful supply of potable water in the region, we are cognizant of the significant costs to provide clean water to the region, the impacts of climate change and the potential for increased periods of drought. YVR's water conservation planning is key to tackling this issue; it's an important part of our risk management approach and provides the framework for ensuring we prioritize and ultimately conserve water.

In our 2015-2019 Environmental Management Plan, we set an ambitious target to reduce water consumption on Sea Island by 30 per cent in 2020 from 2012 levels. To achieve YVR's ambitious water conservation targets, we regularly check in on progress. The City of Richmond provides our potable water and we analyze quarterly readings of potable water through its metered infrastructure.

YVR tracks all water consumed for the lands it leases from Transport Canada across Sea Island. This means that the water consumption we track and report on includes more than the terminal but also all of our business partners, tenants and on-site contractors. We established a 2012 potable water use baseline at 1,206,721 m³. In 2018, our consumption was 1,121,485 m³, a 7 per cent decrease from 2012 levels. Water use per passenger decreased from 69 L/PAX in 2012 to 43 L/PAX in 2018. In 2018, the Airport Authority used 34 per cent of the potable water consumed, while Sea Island businesses accounted for 66 per cent of the use.

The Airport Authority employs a range of initiatives to reduce water usage. We replace, retrofit,

and repair existing infrastructure wherever possible. We place a major focus on working with our tenants through Project Green YVR, our tenant engagement program. We also conduct regular water audits and have provided financial rebates to tenants to encourage water reduction initiatives. In addition, we are always looking at alternative ways to improve our water efficiency:

- As one of the highest consumers of water, **washroom fixtures have been upgraded** in both terminal and tenant buildings. We also worked with food and beverage tenants to install low-flow, pre-rinse spray valve and aerator replacements in their facilities.
- **Rainwater is collected** from the rooftop of the Airside Operations Building for non-potable uses and we have undertaken feasibility studies for additional non-potable systems.
- Heat exchangers in the International Terminal Building have been **optimized for operational efficiency**.
- We **shut off** select irrigation and water feature systems during seasonal water restrictions.

WATER USE PER PASSENGER SEA ISLAND WIDE

2012
69L/PAX



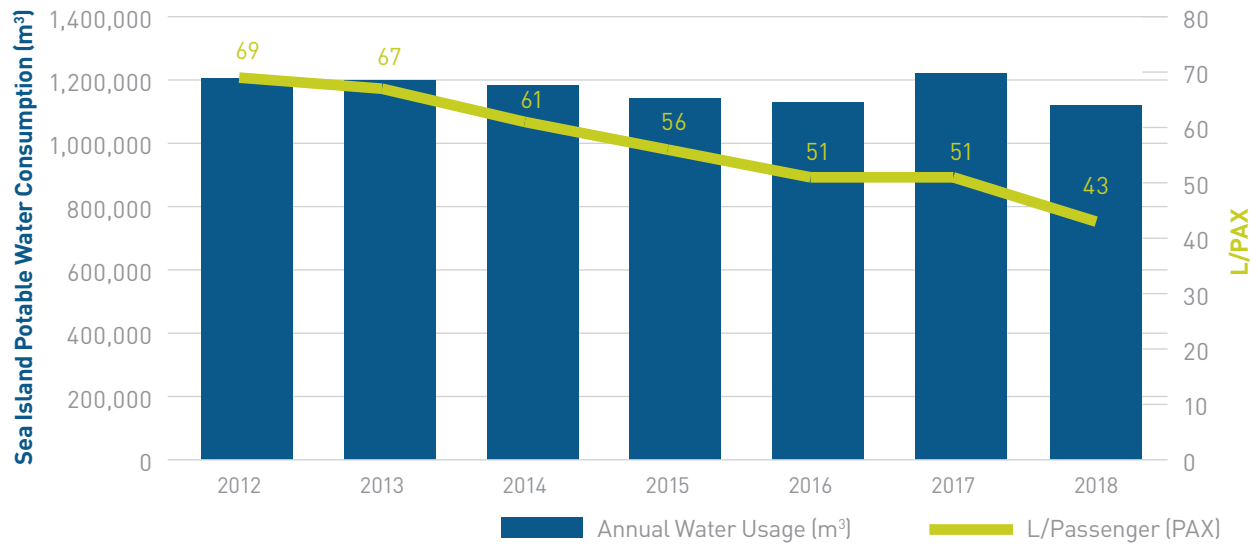
2018
43L/PAX

WATER USE PER PASSENGER TERMINALS ONLY

2018
15L/PAX



Sea Island Water Consumption 2012-2018



- We have **improved water metering** and monitoring by raising awareness and identifying reduction opportunities.
- We have been **upgrading our sanitary sewer pump stations** to reduce maintenance and save water.
- We undertook a pilot project to explore ways to **detect water main leaks** to inform planning for a roll-out of a broader program.





**We are targeting
a 50 per cent
water efficiency
improvement by 2024,
from the 69 L/PAX
baseline in 2012.**

THIS PLAN GOING FORWARD →

At YVR, water consumption is directly related to the number of passengers that travel through the terminal. Water is used in food preparation, washrooms, for aircraft, in construction and for drinking. While we have invested heavily in conservation measures and have seen the impact of these initiatives, our passenger growth has limited our ability to reduce further. This is why we are targeting a 50 per cent water efficiency improvement for all of Sea Island by 2024, from the 69 L/PAX baseline in 2012.

This target is still very ambitious and will drive further water conservation efforts at YVR. This change in approach moves us to a per passenger target, given that water is a passenger-sensitive metric.

We learned a lot about our water consumption and distribution in the 2015-2019 Environmental Management Plan. In 2016, we conducted a water conservation

study to identify long-term strategies to reduce potable water use. This study concluded that, to meet our 2020 target, YVR would need to implement a significant combination of water conservation measures and also invest in non-potable water systems. This informed the development of a rainwater harvesting system as part of a new parkade and ground transportation facility at the main

terminal, scheduled to open in 2021. The collected rainwater will be used for vehicle car washing and post-disaster emergency use.

While we have already made many water conservation improvements in our terminal, we have identified the following opportunities to continue our work with our business partners and invest in more non-potable water use.

Water conservation Initiatives

- Support water fixture improvement projects and low water use with sustainable design standards for Airport Authority and tenant-occupied buildings.
- Review landscape irrigation for opportunities to reduce water use through drip irrigation and drought-resistant plant species.
- Undertake education and outreach activities to encourage water conservation behaviours.
- Engage the Sea Island business community through Project Green YVR to reduce water consumption through capacity-building, incentives and retrofit projects.
- Perform a leak detection study to build on learnings from the pilot program.
- Upgrade to our sanitary pump stations to minimize flushing.

Non-potable water initiatives

- Complete a rainwater capture system on the new parkade.
 - Examine the potential for additional non-potable, reuse projects for existing systems and future expansions.
 - Explore the potential for treated wastewater reuse.
-

WASTE REDUCTION



➔ **PROGRESS TO DATE**

YVR’s operations create various forms of waste. Our waste management efforts focus largely on YVR’s main terminals, where we work with partners to reduce our impact and take advantage of opportunities for innovation.

The waste from the main terminal building includes compostable organics, containers (plastic, metals and glass), fibre (paper and cardboard) and garbage. We employ a wide range of methods to reduce terminal waste from a variety of stakeholders including terminal business partners, passengers and local communities—from promoting recycling among tenants through creative programs, to piloting new composting initiatives, introducing incentive programs and undertaking regular waste audits.

In the 2015-2019 Environmental Management Plan, we set an ambitious goal to increase our waste diversion rate from 38 per cent to 50 per cent by 2020. We achieved this goal in 2016 and have continued to meet our target over the past three years. But managing our waste not only includes increasing the amount of materials that we recycle; it also includes reducing the amount of garbage we produce. Between 2012 and 2018, the garbage produced per passenger decreased by 25 per cent.

Some of the key successes we have had in managing our waste include:

- An organic waste diversion program that includes a green bin program and an on-site, food-waste composter in the International Terminal Building.
- In 2016, YVR partnered with ChopValue to **repurpose wooden chopsticks** into other wood products. In 2019, we celebrated the diversion of our **one millionth chopstick**.
- **Waste Wars**, a friendly competition that seeks to engage food and beverage tenants on proper waste sortation. Throughout this annual competition, we work with tenants to inspect their waste sorting facilities, allocating points based on the level of appropriate separation. Winners are presented with the highly coveted Waste Wars trophy, made by ChopValue from recycled chopsticks.
- In late 2017, we began to **recycle latex gloves**. Even though gloves do not contribute a large amount to the weight of our garbage, they are significant by the numbers. Since the start of the program, we have recycled almost 220,000 latex gloves.

IN 2019 WE DIVERTED OUR

1 MILLIONTH CHOPSTICK

- In 2017, we also piloted the **collection of liquids** in the entrance to security screening. This enables passengers to pour out liquids and saves the weight of the liquids from being added to the garbage or recycling. In 2018, this accounted for over 65,000kg of liquid diverted from landfill.
- A **centralized food court waste sortation station** was installed in the international pre-security food court. Passengers enjoy the convenience of leaving their tray at the station and the waste is sorted and recycled by our janitorial staff. In high-traffic areas this greatly improves sortation and diversion.
- Since 2011, the Airport Authority has **helped to divert** 41 metric tonnes of quality surplus food and products from landfill by placing them in Quest’s not-for-profit markets.

	2012	2013	2014	2015	2016	2017	2018
Total waste (kg)	3.2M	3.4M	3.8M	3.8M	4.2M	4.5M	4.8M
Diversion rate	38%	37%	36%	46%	51%	51%	51%
Garbage (kg per 1,000 passengers)	121	118	122	101	93	91	90



We will support the move to a zero-waste future by setting a goal to divert 60 per cent of our waste from landfill.

WE'LL SORT
FOR YOU

Please leave your tray on the counter and we will sort the organics, waste and recyclables.





THIS PLAN GOING FORWARD →

While we have achieved good progress in increasing our recycling and decreasing our waste at YVR, we know we must go further. Over the next five years, we will support the move to a zero-waste future by setting a goal to divert 60 per cent of our waste from landfill. Initiatives to reduce waste and increase diversion can be divided into three areas: planning, waste reduction and increased diversion (i.e. recycling and composting).

Planning initiatives help us to monitor our waste and identify opportunities to achieve reductions. Key to understanding our waste is to complete an annual waste audit to look for areas of improvement. For example, a 2019 waste audit showed that a significant portion of our garbage contained coffee cups. As a result, we are exploring programs to allow for cup-sharing and looking at ways to communicate with passengers that coffee cups can be recycled.

Reducing the use of single-use items is an important step in achieving reductions, protecting our marine ecosystems and supporting our roadmap to a zero-waste terminal. In addition to exploring alternatives such as cup-sharing, we will also look for ways to decrease the amount of packaging in our supply chain and find alternatives to straws, utensils and other single-use plastic items. We will also launch an innovation competition to solve a key challenge we have in using an alternative to plastic when securing goods as they move through security in the terminal.

We will continue to focus on increasing our rate of diversion, ensuring that compostables and recyclables do not end up in the landfill. With the success of the two centralized waste sortation stations now operating in the terminal, we will invest in additional stations in food courts throughout the terminal. Where appropriate, we will install technology-enhanced waste stations such as OSCAR, the artificial intelligence communication system, to help people sort their waste into the correct bin. We will roll out paper towel recycling in washrooms throughout the terminal and create new 3-way bin signage to help make it easy for passengers to sort their waste.

Preventing food waste will also be a target for us, in partnership with our food and beverage tenants. One initiative will be to expand our safe food diversion program to assist in reducing food insecurity in our community. Lessons learned through our involvement with Quest will support our goal to increase food recovery and eliminate waste.

REDUCING SINGLE-USE ITEMS =

PROTECTING OUR MARINE ECOSYSTEMS +

SUPPORTING OUR ROADMAP TO A ZERO-WASTE TERMINAL



Planning

- Complete waste audits to identify opportunities for further reduction and diversion.
- Explore ways to eliminate single-use plastics to develop a roadmap to a zero-waste terminal.
- Work with a Sea Island tenant on a pilot study to reduce waste.

Reducing waste

- Identify alternatives in order to reduce or eliminate plastic wrapping used on pallets to move goods through the terminal.
- Include waste reduction initiatives in leases, standards and procedures.
- Work with vendors to supply goods and services with reduced packaging.
- Promote reusable containers for drinks and food.
- Reduce the use of single-use plastics, including straws and utensils.
- Eliminate the use of bottled water at corporate events and meetings.

Increasing diversion

- Coordinate an improved food safe recovery plan to support our vulnerable communities.
- Invest in additional waste sortation stations in the food court areas.
- Expand the use of artificial intelligent waste bins, such as OSCAR.
- Develop a corporate green catering plan to lead by example in reducing waste and increase diversion at corporate events and meetings.
- Implement paper towel recycling in all washroom and kitchen facilities.
- Create new labels for 3-stream waste bins to reduce contamination.
- Investigate the opportunity to send a portion of YVR's organic waste to a biofuel facility.

ECOSYSTEM HEALTH



→ **PROGRESS TO DATE**

We conduct robust environmental impact assessments following the Canadian Impact Assessment Act for all projects on airport lands to ensure that our operations align with the health and well-being of the natural world and have sustainable design practices in place. We also regularly conduct sustainability assessments for new operations and facilities through our Sustainability Case Document, which helps narrow down options through a comprehensive matrix based on our social, governance, economic and environment pillars.

YVR is located on Sea Island in the mouth of the Fraser River, which is one of the largest estuaries on the west coast of North America. This estuary supports one of the largest salmon runs on the west coast and is an important location for migratory birds.

We recognize that our operations can have an impact on Sea Island and beyond, and so YVR strives to protect the ecosystem. In 2016, YVR was proud to become the first airport in the world to achieve Salmon-Safe certification. This certification acknowledges our ongoing efforts and commitment to transform land and water management practices, to protect Fraser River water quality and enhance the habitat so Pacific salmon continue to thrive.

As part of this five-year certification, the Airport Authority has completed its Stormwater Management Plan, incorporated green stormwater design features into the Long Term Value Lot, updated our Water Quality Management Plan and developed a Water Conservation Plan, ensured that all construction follows zero sediment runoff standards, developed a list of native and drought-tolerant plants

for landscaping and completed our Integrated Pest Management Plan. We have also completed an assessment of opportunities to enhance habitat on Sea Island and selected a riparian habitat project which will be completed by 2021. And we have partnered with the Musqueam Habitat Aquatic team to remove and replace invasive species along the Fraser River with native plants.

We have a Contaminated Sites Program, which acts to protect human health and the environment. We monitor all construction projects to ensure they meet our environmental standards and we undertake island-wide water quality sampling with independent laboratory analysis to monitor the natural environment. We also have a Hazardous Materials Spill Response Plan that provides clear guidance on preventing and mitigating releases of hazardous substances and ensuring proper cleanup.

We are committed to reducing air pollution and we track air quality through continuous monitoring. We report to the National Pollutant Release Inventory and we participate voluntarily in the Lower Fraser Valley Air Quality Monitoring Network.

FIRST AIRPORT IN THE WORLD TO ACHIEVE SALMON-SAFE CERTIFICATION



During the winter season, Aircraft Deicing Fluid (ADF) is used in periods of snow and sub-zero temperatures to ensure safe aircraft operations. The airport has a comprehensive glycol management program to collect, recover, store and remove sprayed ADF and monitor the potential for glycol to be present in the water. We undertake daily water sampling from the perimeter airport drainage ditches during deicing events. We have adopted a goal to ensure glycol run-off does not exceed 100 mg/L per stormwater sample, as set out under the Canadian Environmental Protection Act (CEPA) Glycol Guidelines.

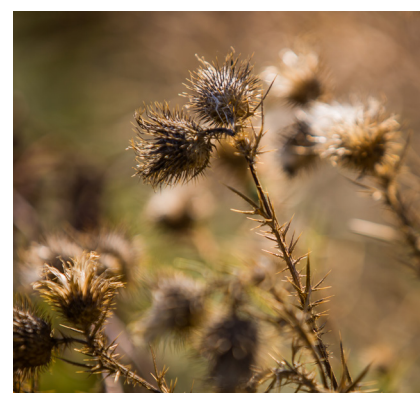


While the target of 0 mg/L can be challenging, the practice of investing in infrastructure to collect glycol as well as closely monitoring glycol levels in water leaving Sea Island enables early detection and resolution of any issue with de-icing including equipment or infrastructure failure.

The Airport Authority has a robust wildlife management program that ensures safe aircraft operations while protecting important wildlife. We use limited pesticides to reduce bird-attracting insects and we patrol the airfield year-round to disperse wildlife. Our successful Raptor Trap and Translocation Program, whereby we trap, tag and move raptors away from YVR, help us understand the movement of the birds.



YVR HAS PARTNERED WITH THE MUSQUEAM HABITAT AQUATIC TEAM TO REMOVE INVASIVE PLANTS ALONG THE FRASER RIVER + REPLACE WITH NATIVE PLANTS.





Over the next five years, we will enhance and protect the ecosystem health of Sea Island.



THIS PLAN GOING FORWARD →

Over the next five years, we will enhance and protect the ecosystem health of Sea Island. YVR will meet our commitments under our Salmon-Safe certification by completing a habitat enhancement project along the Fraser River. And we will seek to re-certify as a Salmon-Safe organization at the end of our current certification period in 2021. We will also maintain our commitment to protect the Fraser River through our glycol management program.

We will continue to protect natural habitat, reduce the risks related to the safe handling of hazardous materials, spill preparation and prevention, management of contaminated sites and a robust environmental assessment program that ensures that environmental impacts are identified, avoided or mitigated by integrating environmental management into the planning, design, construction and operation of all new projects. To ensure accurate and timely water quality monitoring, we will be

upgrading and replacing our water sampling equipment, which has reached its end of life. We will also complete upgrades to our deicing pads in 2020 to ensure continued glycol containment.

In order to better understand the ecosystem on Sea Island, YVR will conduct a bio-inventory of airport lands, including completing habitat mapping of Sea Island, identifying species at risk, monitoring invasive species, continuing to develop alternative pesticide management

strategies and identifying further opportunities for habitat enhancement.

In addition, we will continue to work with the Musqueam Indian Band to enhance the habitat on Sea Island through an invasive plant management program. And we will protect cultural resources by ensuring the identification and protection of archeological resources on Sea Island.

Ecosystem Health

- Continue to monitor and maintain water and air quality.
- Remediate contaminated sites through proactive risk-based strategies and ongoing development projects.
- Conduct environmental reviews of airport development projects.
- Conduct a bio-inventory of airport lands including habitat mapping, identifying species at risk and monitoring invasive species.

Salmon-Safe

- Complete the commitments made under our Salmon-Safe certification by 2021, including the construction of a habitat restoration project.
- Re-certify our Salmon-Safe designation for a further 5 years, starting in 2022.

Partnerships

- Continue our partnership with the Musqueam Indian Band to enhance the habitat on Sea Island.
 - Identify and protect archaeological resources on Sea Island.
-

COMMUNITY INVOLVEMENT





COMMUNITY INVOLVEMENT

YVR is committed to open, honest and timely communications with our communities and partners. This is realized in a number of ways under the environmental banner, some of which include the following:

Environmental Advisory Committee (EAC)

The Environmental Advisory Committee provides advice to the Airport Authority on environmental issues arising from the development and operation of the airport. It provides a forum for key stakeholders to share specific knowledge or perspectives and provide direct feedback about environmental management issues of relevance to the Airport Authority. Committee representatives are appointed by their stakeholder groups, which include community and environment groups, industry, airlines, representatives from the federal and municipal government and the Musqueam Indian Band.

Noise abatement procedures, a noise monitoring and flight tracking system, as well as a complaint management and response system. More information is available at yvr.ca/en/about-yvr/noise-management.



Musqueam Friendship & Sustainability Agreement

On June 21, 2017, Musqueam Indian Band and YVR signed the Musqueam Indian Band - YVR Airport Sustainability & Friendship Agreement, a 30-year agreement based on friendship and respect to achieve a sustainable and mutually beneficial future for our community. The agreement addresses how Musqueam and YVR will work together to protect the land and waters in and around Sea Island including:

- YVR will work with Musqueam to identify areas in and around Sea Island for restoration and enhancement.
- YVR will consider Musqueam

input and collaborate on any resulting amendments to mitigation strategies for any potential environmental emergencies that may occur on Sea Island.

- Musqueam and YVR will work together to ensure identification and protection of archeological resources on Sea Island.



Project Green YVR

The Airport Authority is working to build strong relationships with Sea Island businesses to tackle today's environmental challenges. Project Green YVR is a Vancouver Airport Authority initiative that helps Sea Island businesses reduce their waste, water and energy use to limit their impact on the environment and save money. Find out more at yvr.ca/projectgreen.

Aeronautical Noise Management

The Airport Authority's commitment to neighbouring communities includes managing airport noise to balance the need for safe, convenient 24-hour air travel with enjoyable urban living. To manage noise and our community commitments, our aeronautical noise management program includes: an active Aeronautical Noise Management Committee, a five-year Noise Management Plan,

BECOME PART OF THE JOURNEY

Achieving environmental excellence in YVR's diverse and complex setting requires collaboration and partnership and is achieved through the actions of all of us.

Passengers

Flying through YVR? We hope you have a wonderful experience and enjoy our many amenities. You can help reduce your environmental impact by:

- Reduce your paper use by selecting **paper-free options** when offered, such as electronic boarding cards.
- Take a **sustainable mode of transportation** to get to and from the airport.
- Use your own **refillable** water or coffee/tea cup to prevent the use of single-use items.
- Ensure that your **waste** makes it into the proper receptacle.
- Consider buying **carbon offsets**

to account for the greenhouse gas emissions from your flight. Many airlines offer this service when you purchase your ticket.

Businesses

Are you a business that operates on Sea Island? Consider joining **Project Green YVR**, our community of businesses that share our commitment to reducing our environmental impact. **Learn** about how other businesses are tackling the environmental problems of today, **discover resources** to help your business and **share your knowledge** with others. Together, we can solve problems and celebrate our successes.

TOGETHER,
WE CAN SOLVE
PROBLEMS AND
CELEBRATE
OUR SUCCESSES



CONCLUSION

The 2020-2024 Environmental Management Plan is not a business-as-usual strategy. The commitments, goals and initiatives will be challenging and costly to plan, launch and deliver. This plan is visionary, but we believe the targets are achievable with a concerted investment, coordination and changes in culture.

Vancouver Airport Authority will support the plan and will monitor and report annually on progress against our goals and the lessons learned, while seeking regular feedback on how to do better.

For more information, please visit:
[YVR.ca/environment](https://yvr.ca/environment)



**YVR would like to thank
our partners for sharing
our commitment to be a
leader in environmental
management. We couldn't
do this without your
continued support.**

