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YYJ is a world-class airport and endeavours to lead the way in environmental management.

We will continue to closely manage our environmental footprint as we experience growth.
The Victoria Airport Authority is committed to being a leader in environmental protection and management. We take great pride in being responsible stewards of the environment and have continually implemented measures to conserve natural resources, improve water quality and reduce pollution, all the while considering the ecological, social and economic implications of our actions.

Victoria International Airport has been recognized on an international scale for environmental mitigation projects, was the third airport in North America to achieve Airport Council International’s carbon accreditation program and proudly completed a 9.3 kilometre multi-use walking / biking trail circumnavigating the airport. These are but a few examples of our commitment.

The Environmental Management Plan is a critical document to facilitate the delivery of the Victoria Airport Authority’s commitment to world-class environmental leadership and to guide our activities. The plan has been designed for transparency and ease of use. Our environmental goals and targets are intended to not only meet regulatory requirements but to move beyond the environmental status quo to a place of true leadership.

The Victoria Airport Authority will continue to work closely with our local community partners by sharing information proactively and encouraging collaboration on environmental initiatives. Working together, we can achieve a sustainable environmental future.

Geoff Dickson
President and CEO
Victoria Airport Authority
The Victoria International Airport is a gateway to Victoria for tourism and economic activities. Located near the north end of the Saanich Peninsula on Vancouver Island, the airport has been operated by the Victoria Airport Authority (VAA) since April, 1997 under an 80 year lease with Transport Canada.

The Victoria Airport Authority is governed by a Board of Directors representing nine nominating bodies comprised of five local municipalities, the Government of Canada, the Province of British Columbia, the Capital Regional District and the Greater Victoria Chamber of Commerce.

<table>
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<tr>
<th>LAND USE</th>
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<td>Air Terminal Reserve</td>
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<td>Aviation / Industrial Services</td>
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<td><strong>TOTAL</strong></td>
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In 2012 and 2014, the Victoria International Airport was awarded the Airport Service Quality Award™ for Best Small Airport in North America (fewer than 2 million passengers per year) by the Airport Council International.

- 10th busiest airport in Canada
- Over 1.7 million passengers per year and growing
- 485 hectares or 1,198 acres held in fee simple by Transport Canada
- 82% of passenger traffic is Domestic, 16% Trans-border, 2% International
Completed a significant Reay Creek restoration project, which received both the 2013 Airports Council International Environmental Achievement Award and the 2013 British Columbia Aviation Council Silver Wings Environmental Award.

Completed a 9.3 km paved, public cycle and walking trail around the airport called “The Flight Path”.

Third airport in North America to receive Airports Council International (ACI) carbon accreditation level 1.

Partnering with BC Hydro, enabled energy efficiency upgrades that have resulted in savings of over 50 tonnes of CO2e since 2013.

Peninsula Streams Society presented the Victoria Airport Authority an award recognizing their continued support of Peninsula Streams’ ongoing education and restoration activities.

In 2014, pre and post-consumer organics from restaurants, along with paper towels from washrooms, totalling 10,400 kg of material was diverted from waste and subsequently composted.

Greatly enhanced the retention pond system for TenTen Creek to reduce nutrient rich run-off from entering the stream.

Discovered wild cutthroat trout in TenTen Creek in 2012, with subsequent finds since that year.

In 2013, purchased a new specialized sweeper truck capable of collecting spent glycol on the main apron and initiated a glycol recycling program.

Implemented enhanced capital project environmental screening procedures.

Upgraded the Spill Response Program with the addition of a specialized spill response trailer and spark-free vacuum.

Implemented a compost area for landscaping waste.
The Victoria Airport Authority (VAA) is committed to being a leader in environmental protection and management. The Environmental Management Plan (EMP) summarizes the VAA’s environmental initiatives that focus on mitigating and managing pollution, water and energy conservation and healthy communities. The VAA measures and manages its impact on the environment through specific monitoring programs, operation procedures and practices.

The framework of VAA’s environmental program is based on applicable federal, provincial and municipal regulation and by-laws including:

- Canadian Environmental Protection Act (CEPA)
- Canadian Council of Ministers of the Environment (CCME)
- Storage Tank Systems for Petroleum Products Regulations
- Fisheries Act
- British Columbia Environmental Protection Act
- Capital Regional District Sanitary Source Control By-Law
- Federal Halocarbon Regulations
**Environmental Goal:**
Be a leader in environmental protection and management.
ENVIRONMENTAL PROGRAM COMPONENTS

Compliance with Transport Canada Ground Lease

PROGRAM DESCRIPTION:
As part its long term lease with the federal government, the VAA is required to comply with all environmental requirements as stipulated in the agreement.

PROGRAM OBJECTIVE:
To receive a clean audit from Transport Canada annually, with no concerns regarding the VAA’s Environmental Management Program.

Storm Water Quality Monitoring

PROGRAM DESCRIPTION:
The VAA maintains two fixed water monitoring stations, one at TenTen Creek and one at Reay Creek. Weekly water samples are taken to monitor levels of pollution leaving airport property. In addition to the two fixed stations, the airport uses portable testing stations when analyzing various inputs to the two creeks.

PROGRAM OBJECTIVE:
By trending and analyzing water quality data on a regular basis, the VAA monitors how local operations align with environmental regulations. Routine and consistent sampling enables the airport to make prudent decisions around potential restoration activities. In addition, emergent events such as spills can be detected and acted upon. The overarching goal of this program is to reduce pollution levels to as low as possible, while monitoring for changes or events.

Potable Water Testing

PROGRAM DESCRIPTION:
13 specific points are tested at the airport to monitor for any variances to potable water used by the public and airport staff.

PROGRAM OBJECTIVE:
By monitoring regularly, the airport is able to proactively identify any potential issues with potable water and reduce the chance of illness or related problems that would result.
Sanitary Source Control Program

**PROGRAM DESCRIPTION:**
Working with our partners at the Capital Regional District (CRD), the VAA holds specific permits that allow for the safe discharge of sanitary waste from aircraft into the sanitary system. In addition, the VAA is permitted by the CRD to safely discharge spent de-icing fluid called glycol into the sanitary system.

**PROGRAM OBJECTIVE:**
The objective of the program is to be in 100% compliance with CRD requirements for all sanitary systems.

Habitat and Wildlife Management

**PROGRAM DESCRIPTION:**
Airport lands are actively managed to discourage or prevent specific wildlife from potentially coming into contact with aircraft. Although this is primarily focused on birds, all mammals that could pose a risk to aviation safety are encompassed in the program.

**PROGRAM OBJECTIVE:**
Reduce bird and wildlife activity on airport property to minimize the frequency of wildlife strikes against aircraft. To educate the surrounding municipalities and private land owners on the risks associated with birds near runway approaches. To meet or exceed all required Transport Canada regulations.

Spill Response

**PROGRAM DESCRIPTION:**
Spills at the airport are inevitable, so ensuring a sound response is critical to minimize the impacts to the environment. The program consists of communicating procedures with tenants, ensuring airport staff are appropriately trained and response plans are tested regularly.

**PROGRAM OBJECTIVE:**
To minimize impacts of all reported spills and to comply with all applicable regulations.
Glycol Recovery and Monitoring

PROGRAM DESCRIPTION:
Glycol is used during winter months to ensure that ice is removed from aircraft or inhibited from forming. Capturing the spent glycol to reduce its impacts on local waterways is critical.

PROGRAM OBJECTIVE:
To ensure that Reay Creek, which receives the majority of run-off from the main apron, never exceeds 100MG/L of glycol concentration.

Green House Gas Tracking

PROGRAM DESCRIPTION:
The Victoria Airport Authority participates in the Airports Council International (ACI) Carbon Accreditation Program which provides a verification for the tracking process used for greenhouse gas (GHG) emissions. Each year the inventory of GHGs is tracked and reviewed with considerations made to reduce the intensity of GHGs created for future projects. This tracking is focused on the VAA, not the airlines or tenants at the airport.

PROGRAM OBJECTIVE:
Reduce GHG emission intensity by 5% on a per square metre basis. This is specifically targeted at savings within the context of the airport terminal building and future expansion.
Alternative Energy/Energy Reduction

PROGRAM DESCRIPTION:
To encourage alternative energy use and to reduce energy requirements for the Victoria Airport Authority. To provide facilities for tenants, and for customers to be given a choice to use alternative energy and reduce energy use.

PROGRAM OBJECTIVE:
The objective of this program is to provide facility options to both tenants and passengers in using alternative energy sources that have a reduced environmental impact.

Project Screening and Construction Surveillance

PROGRAM DESCRIPTION:
All capital projects are environmentally screened, to review any potential environmental risk prior to a project commencing. An impartial Qualified Environmental Professional is used when screening major construction projects.

PROGRAM OBJECTIVE:
By screening projects in advance, environmental risk can be reduced to an acceptable level, ensuring compliance with all applicable regulations.
Tenant Environmental Inspections

PROGRAM DESCRIPTION:
Each year, the airport selects three to five tenants who lease land from the airport for the purpose of operating a business. An impartial Qualified Environmental Professional is used to conduct the inspection and is looking for any regulatory environmental concerns associated with their lease.

PROGRAM OBJECTIVE:
With routine inspections occurring, both the airport and its tenants are assured that they are in full compliance with all applicable environmental regulations. In addition to minimum compliance requirements, tenants are provided a list of recommended practices that they may have not previously been aware of.

Community Outreach

PROGRAM DESCRIPTION:
The VAA works with local organizations such as Peninsula Streams Society, Tseycum Shore Keepers and the Sidney Anglers in support of projects that protect or enhance areas of environmental concern on or near airport property. Airport management speaks at public meetings to engage the community in dialogue on environmental matters and periodically arranges for tours of stakeholders.

PROGRAM OBJECTIVE:
To engage interested community members and seek input and support around environmental initiatives that the Victoria International Airport is participating in, or considering.

Noise Management

PROGRAM DESCRIPTION:
The airport hosts a Noise Management Committee that reviews and discusses issues around noise generated in the local community as a result of operations occurring at the airport. The airport tracks and responds to all noise inquires it receives and is responsible to do so within a 10 nautical mile radius from the airport. A large portion of this program is to work with local municipalities to suggest appropriate land use near the airport.

PROGRAM OBJECTIVE:
To create dialogue between the airport users and the community around noise issues. To encourage appropriate land use decisions by local municipalities near the airport. To evaluate and consider noise impacts caused by changes to flight operations at the airport or when new flight paths are established. To track and report to the Committee on all noise inquires made and to follow up on any violations of existing noise abatement policies.
“Peninsula Streams is pleased that VAA has recently tackled tough environmental problems that pre-existed their tenure. We look forward to working together with VAA on more restoration projects.”

Ian Bruce, Executive Coordinator Peninsula Streams Society
WATER

The Victoria Airport Authority is focused on water quality management.

Storm Water Quality Program
The Storm Water Quality Program monitors water as it enters the airport property, flows through Reay Creek and TenTen Creek and exits the airport lands. Weekly samples are taken from each creek and tested for the presence of suspended solids, metals, oils, and measures nutrient levels, pH and water hardness. Portable testing stations supplement fixed stations to pinpoint contamination sources and are used extensively to test for glycol concentration during winter months. Airport staff trend and analyze data against applicable regulations. Contracted independent Qualified Environmental Professionals (QEP) are used from time to time, to assist with both data review and to make recommendations to the program itself. The VAA also shares water quality information with the CRD, the Town of Sidney, North Saanich and other agencies when requested.

Potable Water Quality Program
The VAA routinely maintains and flushes the water system to ensure high quality drinking water for use in airport facilities. Potable water is routinely tested at 13 different locations at the airport with four locations tested each month. The drinking water monitoring program meets Federal, Provincial and Regional water quality standards.

Sanitary Source Control
The VAA is continuously working to improve the quality of effluent into the sanitary system. All tenants must comply with discharge regulations and participate with the CRD in regular and random inspections of their facilities. The VAA fully complies with all CRD regulations for its own discharges which includes a special permit for the capture and eventual release of used glycol into the sanitary system.
The airport continues to invest in innovative and natural drainage improvements to help mitigate the risk of flash flooding and minimize untreated pollutants entering the stormwater system. In the parking lots, rain gardens and bioswales have been installed to manage and treat run-off. Rain gardens and bioswales are strategic landscape designs that naturally filter pollutants and allow rain water to permeate into the ground water instead of being washed out to sea. Bioswale ditches were commissioned for the Airport Operations Centre to mitigate run-off from airside vehicles and equipment. The airport also ensures airfield ditches maintain a substantial amount of vegetation to encourage a natural reduction to any contaminants that may enter the system.
As the largest waterway on the airport lands, Reay Creek flows southeast to Bazan Bay, and is an important spawning and rearing habitat for coho salmon and cutthroat trout on the east coast of the Saanich Peninsula. Historical contamination from industrial activity dating back to WWII has negatively impacted water quality in Reay Creek with pollutant concentrations high enough to cause fish deaths and degradation of fish habitat through the downstream reaches of the creek.

In late 2011, the VAA approved funding to continue remediation efforts for Reay Creek. The remediation project incorporated the development of a diversion channel to capture stormwater and support aquatic species, and in the spring of 2012, the VAA issued a call for proposals to design and build the channel.

The new 200 metre-long diversion channel incorporates aquatic habitat features such as riffles, boulders and riparian plants to provide favourable habitat for aquatic species such as invertebrates, amphibians and even fish. The original creek segment was converted to wetlands with strategically chosen plant species that help to filter pollutants. Manually controlled water control gates were installed upstream and downstream of the wetland as a protective measure to capture unforeseen contaminant spills should they occur. In responding to a spill, staff can now use the water control gates to capture contaminated stormwater in the wetland which reduces downstream impacts and simplifies clean-up of a spill.

The Reay Creek project is an excellent example of comprehensive integrated stream rehabilitation. The VAA’s systematic approach identified potential sources of contamination, removed a number of sources within the stormwater network and isolated contaminated sediments within the original creek channel. Understanding the impacts of pollution on fish bearing streams helps ensure that there is awareness to control and contain spills and be mindful of land use near the stream.

The Reay Creek Project aligns with other community organization initiatives from groups such as Peninsula Stream Society, Sidney Anglers Association, Reay Creek Residents’ Group, Tseycum First Nation and the Town of Sidney. These groups have been active stewards of Reay Creek and continued cooperation around future initiatives is key for all involved. The restoration has substantially raised the profile of Reay Creek with both the community and airport tenants. While there has been a significant reduction in the contamination of the Reay Creek site, the project has a long-term outlook. The VAA will continually measure and look for ways to improve stream health in the years to come.
Diversion Channel Project Goals

- Reduce heavy metal and other pollutant concentrations in stormwater runoff from the East Industrial Area and the eastern half of the airport property.
- Incorporate fish and riparian habitat features for potential fish habitat restoration in Upper Reay Creek in the future.
- Improve water quality while limiting bird and wildlife conflicts with airport operations.
- Provide for emergency storage to limit the impact of contaminant spills or other emergent events.

Reay Creek Monitoring Program

- Water quality monitoring and sampling program for Reay Creek near the airport’s property line.
- Water quality sampling at a main tributary to Reay Creek.
- Glycol concentration testing during winter months when glycol is used for de-icing planes.
- Regular inspection and cleaning of stormwater drain network.
- Ongoing tenant monitoring to ensure compliance with both Federal and Provincial environmental regulations.
- Development of long-term restoration plans for Reay Creek to reduce concentrations of pollutants and rehabilitate aquatic habitat to support fish and other species.

Partners in Restoration

- Peninsula Streams Society
- The Sidney Anglers
- Tseycum First Nation
- Shorekeepers Environmental Program
- Transport Canada
- Department of Fisheries and Oceans
- Town of Sidney
- District of North Saanich

Awards & Recognition

- The Victoria Airport Authority’s proactive Reay Creek Restoration Project received the 2013 ACI Environmental Achievement Award for Mitigation
- BC Aviation Council 2013 Silver Wings Environmental Award
RESTORATION PROJECTS

REAY CREEK: A chance to begin healing

Rehabilitation of Reay Creek has been an ongoing effort as part of the Environmental Management Plan and local stewardship groups. This important stream provides critical habitat for aquatic life.

Reay Creek is the only stream in Sidney and North Saanich with successfully re-established sea runs including a self-sustaining population of Coho salmon and Cutthroat trout.

The VAA executed this $232,000 project in an effort to help remediate the creek.

TIMELINE

1940's
Industrial activities begin to contaminate stream

1980's
Sidney Anglers Association rehabilitate Reay Creek and re-introduce Coho salmon.

1997
VAA takes on operational control of the airport

2004
Sidney Anglers create spawning habitat for Coho population
<table>
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<th>Year</th>
<th>Event</th>
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<tbody>
<tr>
<td>2005</td>
<td>Contamination study focused on the upper portion of Reay Creek</td>
</tr>
<tr>
<td>2010</td>
<td>Systematic testing and outfall cleaning occurs</td>
</tr>
<tr>
<td>2012</td>
<td>Design &amp; construct channel to improve habitat &amp; water quality</td>
</tr>
<tr>
<td>2013</td>
<td>ACI-NA Environmental Achievement Award</td>
</tr>
<tr>
<td>2014</td>
<td>Presentations to share the story and lessons learned</td>
</tr>
</tbody>
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Work in TenTen Creek is an ongoing restoration

The TenTen Creek Channel Renewal Project is an initiative with the Peninsula Streams Society, Transport Canada and the Victoria Airport Authority to repair banks of the stream and help restore some of the natural habitat for fish and other wildlife.

Like Reay Creek, previous activities on the lands reduced aquatic ecosystems in TenTen Creek. The lands adjacent to the stream contain a dump site which has been found to be leaching contamination into TenTen Creek. In addition to the dump site, portions of the storm drain system that contribute to TenTen Creek were found to be damaged with metals such as iron, finding their way into the stream. A project was undertaken to repair a portion of the storm drain system and bypass some of the contaminated areas.

In 2012, a discovery of juvenile sea-run cutthroat trout and three-spined stickleback occurred. The appearance of these species highlights the importance of reducing the harmful pollutants and restoring creek habitat areas to revitalize these freshwater ecosystems. Since the initial find, additional trout have been documented in the stream. The VAA is working with its partners to evaluate future work in TenTen Creek to improve bank stability and reduce the impact of the dumpsite adjacent to the stream.

TenTen Constructed Wetlands Complex

The TenTen Wetlands provide much needed treatment for nutrient-heavy water from nearby farming operations. The stormwater complex has treated an estimated 2.5 billion litres of water since its initial construction in 2000. In 2013, the VAA executed a two phase project to enhance the existing facilities and improve water treatment systems. Phase one focused on clearing organic material, streamlining delivery of stormwater to the pond and creating a visual inspection point to determine dam stability. Phase two included the designing and building of an additional diversion channel to direct pond overflow into an irrigation retention area, reducing sediment and nutrient-rich stormwater entering TenTen Creek.
The VAA works to mitigate pollution to local ecosystems and minimize risks related to wildlife activity, with a focus on birds.

In 2014, a new database was developed to improve bird strike information collection and reporting.
Located on the northern tip of the Saanich Peninsula, the Victoria International Airport lands are comprised of 485 hectares. Portions of the land are proactively developed, while the majority of land is used for daily operations or held in reserve for future expansion. Some sections of the land are left in their natural state, however hundreds of acres of property is leased to farmers for hay production and cattle grazing. Wildlife on surrounding lands consists mainly of birds, including eagles, hawks, owls, swallows and waterfowl, and small mammals such as mice, voles and raccoons. Fencing around the airport is in good condition and is an effective barrier to larger animals such as deer, cattle and domestic dogs. The two streams on airport property have been identified as environmental protection zones, and any infrastructure project that could potentially put them at risk is subject to extensive review.

The airport’s main stewardship objectives on its lands are to mitigate pollution from airport activities and minimize the risks posed to and by wildlife. These risks are primarily associated with birds, which can be a safety hazard for aircraft. The airport works to discourage birds from feeding in high-risk zones using a variety of techniques in habitat management and deterrents. A continued focus on drainage helps to reduce the potential for flooding in airside fields, which can attract waterfowl and gulls.

Wildlife Management Program

- Monitor wildlife to identify species and determine what attracts them to the area, their number and activity, seasonal and weather fluctuations and potential risks to the species and aircrafts.
- Modify local habitat in areas where the existence of species may be dangerous to the species and to the safe operation of aircraft.
- Discourage land uses that may attract the presence of hazardous wildlife.
- Use industry best practices for deterring birds through non-lethal methods where possible.
- Periodically assess, review and enhance all wildlife control methods to gauge effectiveness.
In 2013, the Airport Fire Service (AFS) introduced the Foam and Response Trailer to treat spills as soon as they occur.

Environmental protection features

- Intrinsically safe vacuum for spilled hydrocarbons
- Fuel spill test kit
- Large quantities of spill containment material
- Decontamination equipment for first responders
Spill Response

Despite efforts to minimize the likelihood of a spill, they do occur and the airport must be prepared with adequate spill response. The VAA’s response program is comprehensive, covering all potential contamination of ground and surface water, soils and sediments. Airport Fire Service staff, who are responsible for assessing and containing the spill, are all certified to a minimum Hazardous Materials Operations Level, with some trained to Technician Level. Sheds stocked with spill containment and clean-up materials are situated at critical sites around the airport, and bioswales have been constructed and planted to absorb pollutants before they enter environmentally sensitive areas.

All spills are documented, reviewed and reported to the appropriate agency.

Oil-Water Separators

The VAA uses oil and oil-based products in many of its day to day operations. To protect the environment from any unforeseen releases of these pollutants, the VAA employs six oil-water separators located in key areas. Oil-water separating equipment undergoes regular monthly inspections and yearly cleaning. The VAA continues to assess new areas of risk that may require the use of these systems.

De-icing Chemicals

In the past, urea has been the primary compound used to control ice on runways and taxiways. The VAA’s stormwater monitoring program has shown that sustained use of urea increased the levels of nitrates in the surrounding creeks. In 2011, the airport replaced the urea with sodium formate, a more environmentally-friendly method of keeping airside paved surfaces safe. The VAA also uses potassium acetate to control ice on paved airside surfaces such as runways, taxiways and aprons. This combination of sodium formate and potassium acetate is very effective in controlling ice and has a reduced impact on the environment.

Glycol Collection & Recycling

During the winter when snow and ice accumulate on aircrafts, liquid glycol is applied to planes as a de-icer, a practice critical to aircraft safety. In high concentrations, glycol absorbs oxygen which can cause problems for aquatic life in waterways. Applications under 40 L are applied on the tarmac where a sweeper truck collects spent glycol. Applications over 40 L are applied on prescribed area of the main apron where the glycol is recovered and stored in a 27,000 L holding tank for responsible disposal. Working closely with the CRD, the VAA holds a permit to utilize the sanitary system for strategic disposal with the nearby water treatment plant. When glycol is in use, additional water testing is conducted to ensure runoff limits are not exceeded. The VAA has authorized the construction of a new glycol retention facility which will be completed by the end of 2016. The new system will include holding tanks and a wetland area to treat spent glycol. In addition, a trial program is currently underway to review the feasibility of recycling the glycol that is picked up by the sweeper truck. Discharging to sanitary will remain an option when required, however efforts will be made to treat on-site or recycle the material where possible.
Goal: Reduce GHG emission intensity by 5% on a per square metre basis. This is specifically targeted at savings within the context of the Airport Terminal Building and future expansion.

As the VAA’s facilities expand, greenhouse gas emissions from operations and building will be considered as part of the design and operation.
Energy

The VAA completed its first carbon footprint assessment of airport operations through the Airport Carbon Accreditation (ACA) Program, measuring 2013 emissions from on-site combustion and electricity. Results have provided airport management with a comprehensive picture of energy use, and a benchmark for future GHG emissions targets. The VAA also participated in BC Hydro’s Continuous Optimization Program to identify opportunities to reduce energy use.

In 2015, the VAA set a strategic target of 5% reduction in GHG emissions on a per square metre basis (an intensity target for future development) to be reached by 2019. The airport also has several alternative energy systems in place including solar hot water, geothermal heating, and electric vehicle charging stations.

Waste Management

The VAA has introduced a comprehensive waste management program for vendors and airport divisions that includes compost for organic waste and various recycling streams. The airport recycles plastics, cardboard, paper, scrap metals, tires, batteries, antifreeze, used oil and other maintenance related waste. The food service outlets compost pre-consumer food waste and coffee grounds. On-site composting collects much of the airport’s garden waste and to date has produced over 27 tonnes of soil. This material is used to fill ponded areas of the airfield, or as good quality fill material. The VAA’s waste management program has resulted in an overall diversion rate of 21%.

The following improvements to the Airport Terminal Building reduced electricity use by three-quarters of a Gigawatt, equivalent to powering 68 homes for a full year.

- Applied occupancy scheduling to control ventilation systems, reducing wasted energy.
- Fixed leaky heating coil valves and dampers.
- Altered thermostat set points to maximize free cooling and reduce excessive ventilation, which results in unnecessary reheating.
- Installed new CO₂ sensors to maintain air quality and regulate air flow.
- Replaced hot water boilers with new, efficient condensing boilers.
- Implemented a load shedding program to track instantaneous building energy demand and reduce peak demand loads.
As a member of Airports Council International - North America, the Victoria International Airport has joined global ACI leaders in their commitment to Airport Carbon Accreditation (ACA). ACA is an independent, voluntary program for airports to measure, reduce, optimize and eventually neutralize the carbon footprints of their operations. The airport measures its carbon footprint annually using ACI's Airport Carbon and Emissions Reporting Tool (ACERT) in accordance with the Global Reporting Index (GRI) standards and with third party verification provided by Enviro-access every two years. In 2015, the VAA set a strategic target of 5% reduction in GHG emissions on a per square metre basis (an intensity target for future development) to be reached by 2019.
Through the BC Hydro Continuous Optimization for Commercial Building Program, eight energy reducing measures were implemented at the Victoria International Airport terminal building. The expected annual savings resulting from the initiatives is 54.8 tCO$_2$e, the equivalent of 15 cars on the road for a year.
ALTERNATIVE ENERGY

The Victoria Airport Authority encourages the use of alternative energy.

Renewable and alternative energy projects have been implemented in airport buildings and infrastructural support is provided to airport tenants to help reduce the impact of its activities.

Solar Hot Water

In 2010, solar panels were installed to preheat hot water for the Airport Terminal Building. The 11 kW system provides nearly 100% of domestic hot water during summer months and 25% or more during the winter months.

Jet Bridge Fuel Initiatives

95% of power supplied to aircraft connected to a Jet bridge is electric. Electric Ground Power Units (GPUs) are provided to airlines in place of diesel powered generators, reducing total fuel use.

Electrical Vehicle Charging Stations

Electric Vehicle Charging Stations are available in both the short and long term parking lots.
The geo-thermal system at the Airport Operations Centre uses the earth’s natural temperature to supplement heating and cooling requirements of the building. Sixteen boreholes dug to 100m extract heat using a heat transfer fluid which passes through a heat pump compressing it to higher temperatures. A high efficiency natural gas boiler supplements the system when temperatures fall below 10 degrees. For every kWh used by the heat pump, 5 kWh of geothermal heat is extracted.

Geo-Thermal

The earth heats a transfer fluid, which flows through a collector or probe.

A heat pump extracts the heat from the heat transfer fluid and compresses it to higher temperatures. Heat pumps are based on a similar principle to refrigerators.

The geothermal energy is stored and is available for space heating and water heating.

Heat from the earth: How to heat with near-surface geothermal energy

1. The earth heats a transfer fluid, which flows through a collector or probe.
2. A heat pump extracts the heat from the heat transfer fluid and compresses it to higher temperatures. Heat pumps are based on a similar principle to refrigerators.
3. The geothermal energy is stored and is available for space heating and water heating.

**Diagram:**
- Collector: Depth 80 - 160 cm
  - Temperature ca. 10°C
- Geothermal probe (borehole heat exchanger)
  - Temperature ca. 13°C
- Heat pump
- Additional heating boiler
- Water storage cylinder
- Electricity connection
  - 1 kilowatt-hour electricity supplies
  - 3 - 5 kilowatt-hour geothermal energy (heat)
- Underfloor heating
- Hot water
- Water connection
Environmental Assessment Program

As the airport expands, the Environmental Assessment Program helps minimize pollution and protect environmental areas.

Environmental Screening
The VAA conducts due diligence on all new developments and capital projects by assessing potential environmental impacts such as loss of wildlife habitat prior to project initiation. If potential impacts are identified, the airport prepares appropriate mitigation strategies, relevant research and testing along with prompt communication with stakeholders. Outside consultants are often employed to thoroughly review site plans, sample soil and groundwater and provide guidance and follow-up services throughout the project.

Soil Testing
The VAA introduced a new policy for increased soil testing. Prior to moving soil across airport lands from a site of known or potential pollution, a sample is taken and tested for the presence of pollutants. This diligence in monitoring produces data that is used to mitigate and treat soil pollution.

Construction Surveillance
The Construction Surveillance Program monitors construction sites for potential threats to the surrounding environment, and ensures all mitigation measures are adhered to and follow-up reporting is completed. External consultants provide best practice recommendations and construction surveillance.

First Nations Land
Respecting the lands of local First Nations and their heritage is an important aspect of the airport’s community relations program. All project sites requiring substantial earthworks are monitored by members of local First Nations during the excavation phase to ensure that any archaeological artefacts with cultural significance are carefully recovered. First Nations are consulted on issues of cultural and historical significance including the recent development of the educational signs along the Flight Path, a 9.3 km recreational path surrounding the airport.
The VAA encourages tenants to pursue their own sustainability initiatives, such as Air Canada’s Electric Vehicle Program.

Electric Vehicle Program (Air Canada)
At the Victoria International Airport, airlines are responsible for their own airside vehicles, including all ground service support equipment. In 2009, Air Canada replaced part of their ground fleet with electric vehicles, adding five electric tugs, three electric power carts, and one electric belt loader. By using electricity instead of gasoline, these new vehicles are reducing emissions and setting an example for the industry.

Tenant Facility Inspections
All tenants are required to meet environmental standards set by the Victoria Airport Authority. Each year, the airport selects three to five tenants and conduct third party Environmental Compliance Audits (ECA) of their operations. Tenants are selected based on impact potential, environmental track record and years since their last audit. Audits focus (where applicable) on Petroleum Storage Tank Management, Hazardous Materials, Waste and Wastewater Management, Ozone Depleting Substances Management, and Emergency Response Planning. Reports include regulatory and good management practices for each tenant and follow up site-visits are conducted to ensure compliance.
Since its implementation in 2009, Air Canada’s EV program is estimated to have saved over 40,000 litres of fuel, or roughly 100 tonnes of CO$_2$e.
COMMUNITY ENGAGEMENT

Noise Management

The VAA monitors existing noise abatement procedures for aircraft operating to and from Victoria International Airport within a 10 nautical mile radius of the airport except where such noise is related to aircraft enroute operations. The VAA believe the single most effective way to reduce negative effects of aircraft noise is by setting appropriate land uses adjacent to the airport, however, some residential areas are already established near the airport. The VAA has established a Noise Management Committee to provide a platform for stakeholders to effectively communicate.

The goal of the Noise Management Committee is to review noise complaints, create a forum for stakeholder dialogue and seek input from the Committee if a new flight path is being proposed that potentially changes an existing noise profile. The group also provides a forum for the airport to discuss upcoming projects or temporary noise increases due to construction or irregular operations. This diverse committee includes representatives from the VAA, NAV Canada, airlines, Department of National Defence, flight training schools, local municipalities and community representatives. The Victoria Airport Authority does not have any jurisdiction with respect to the military that operates from the airport, however the military often participates in the meetings.

The airport tracks every complaint, including the location, time and type of aircraft and uses the data to look for irregularities in aircraft noise outside of established flight paths. All complaints are responded to by a VAA staff member and complaint summaries are reviewed during committee meetings. The VAA meets regularly with both North Saanich and the Town of Sidney to discuss issues around proposed residential development within the airport’s noise exposure contours. This helps to provide information to each municipality when making decisions around adding residential density near the airport. Irregular operations, construction projects or other shorter duration noise sources are published on the airport’s website to help inform the public.
Methods of Feedback

Email - environment@victoriaairport.com
Phone - 250-953-7500
Mail - ATTN Environment Department
  #201-1640 Electra Blvd.
  Sidney, BC
  V8L 5V4
Located around the perimeter of the pastoral Victoria International Airport, the Flight Path is a unique recreational path for people of all ages to bike, hike or stroll. The three-metre-wide paved path meanders around the airport lands and connects with West Saanich Road and Ocean Avenue along the Patricia Bay Highway as well as with Beacon Avenue, which leads into downtown Sidney.

The Flight Path is punctuated with intriguing vantage points complete with interesting feature signs. It is an educating experience about the historical significance of the airport and its surrounding land.

Amenities at Hospital Hill include a water fountain, complete with refillable dog bowl and a water-bottle filling spout and the placement of additional trash containers. Future plans include the enhancement of primary lookout areas, landscaping and parking facilities.

Working in partnership with BC Transit, the Victoria Airport Authority is pleased to see 28 transit departures to and from the airport and the McTavish Transit Exchange with several connections to Swartz Bay, the Saanich Peninsula and downtown Victoria. BC Transit service has nearly tripled since 2010.
Victoria International Airport is Bike Friendly

- Ride to Victoria along the Lochside Trail – 28 km to the downtown core.
- Bicycle Assembly Station - Located in the east section of the Short Term Parking Lot, the bicycle assembly stations includes a work bench, air pump, bicycle parking and storage shed.
- Secure Bike Storage - Four bicycle storage lockers are available for $2.00/day.
- A kit with basic bike tools is available for check-out at the Airport Security Building.