

# 2016 PROVINCIAL GOVERNMENT CARBON NEUTRAL ACTION REPORT



Ministry of Environment

Victoria, B.C.

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# 1. INTRODUCTION

This report fulfills the Provincial government’s reporting requirements under section 7 of the *Greenhouse Gas Reduction Targets Act* (the Act) for the 2016 calendar year. The Provincial government entity is comprised of the provincial ministries and independent offices.

This report provides an overview of the Provincial government’s:

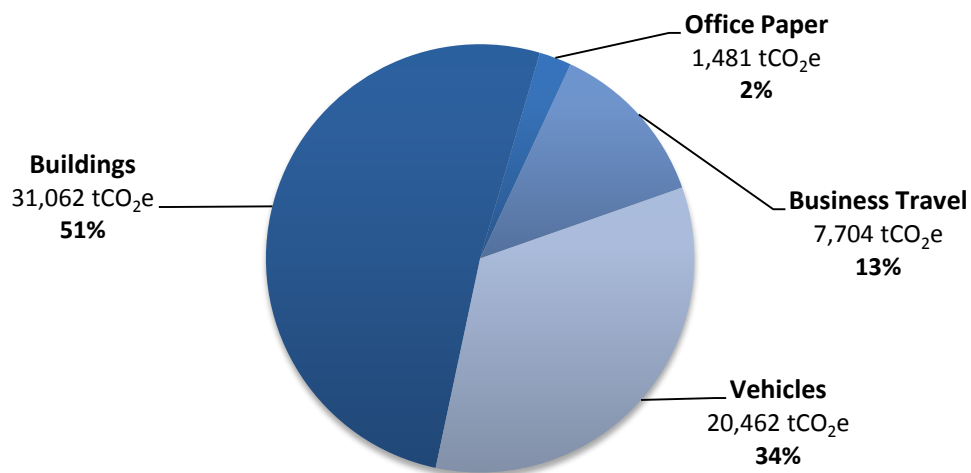
- Greenhouse Gas (GHG) emissions from the buildings, vehicles, office paper, and business travel associated with its delivery of public services;
- offsets retired in relation to those emissions; and
- highlights of actions taken in 2016 to minimize emissions and plans to minimize future emissions.

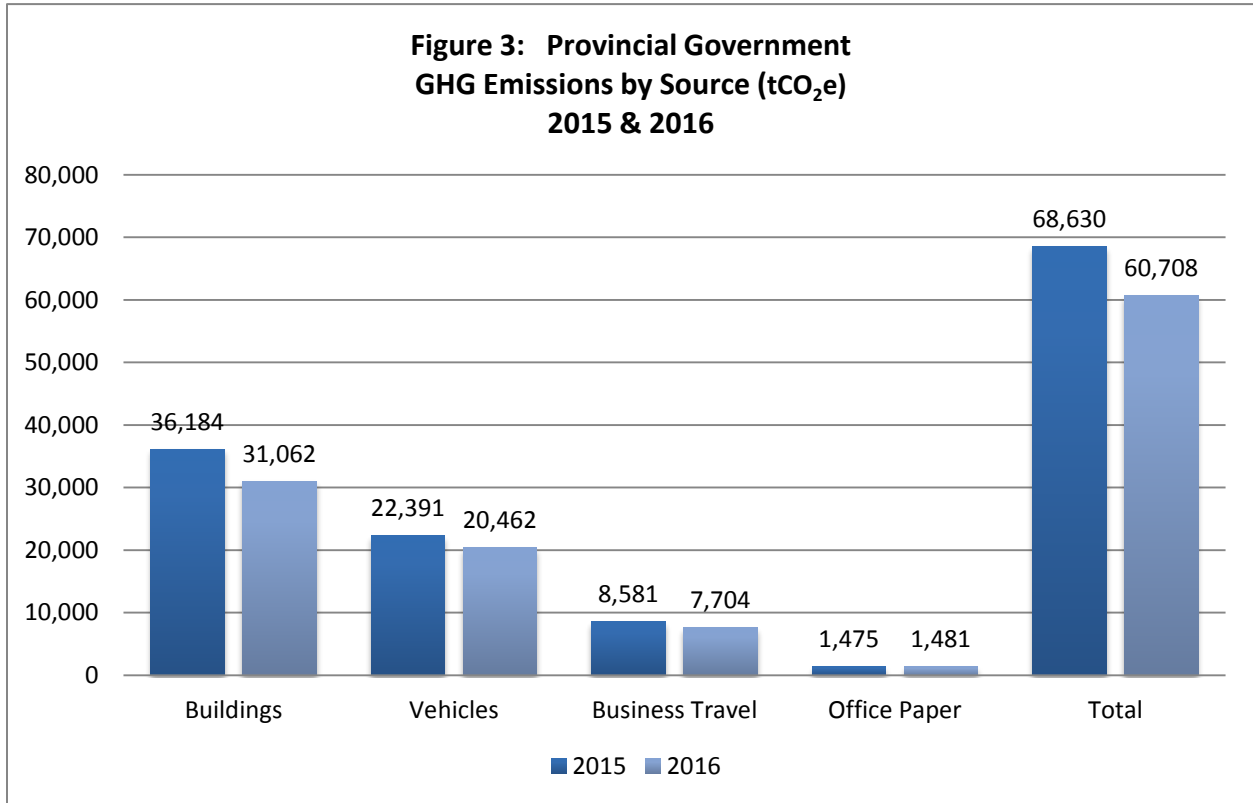
## 1.1 Provincial Government Emissions Summaries

**Figure 1: GHG Emissions Summary for Provincial Government - 2015 & 2016 (Calendar Years)**

	2015	2016
Total Emissions (tCO <sub>2</sub> e)	68,630	60,708
Total Offsets Purchased (tCO <sub>2</sub> e)	67,721	60,012
Total Value of Offsets Retired	\$1,693,025	\$1,500,300

**Figure 2: 2016 Provincial Government GHG Emissions by Source**  
Total Emissions: 60,708 tCO<sub>2</sub>e





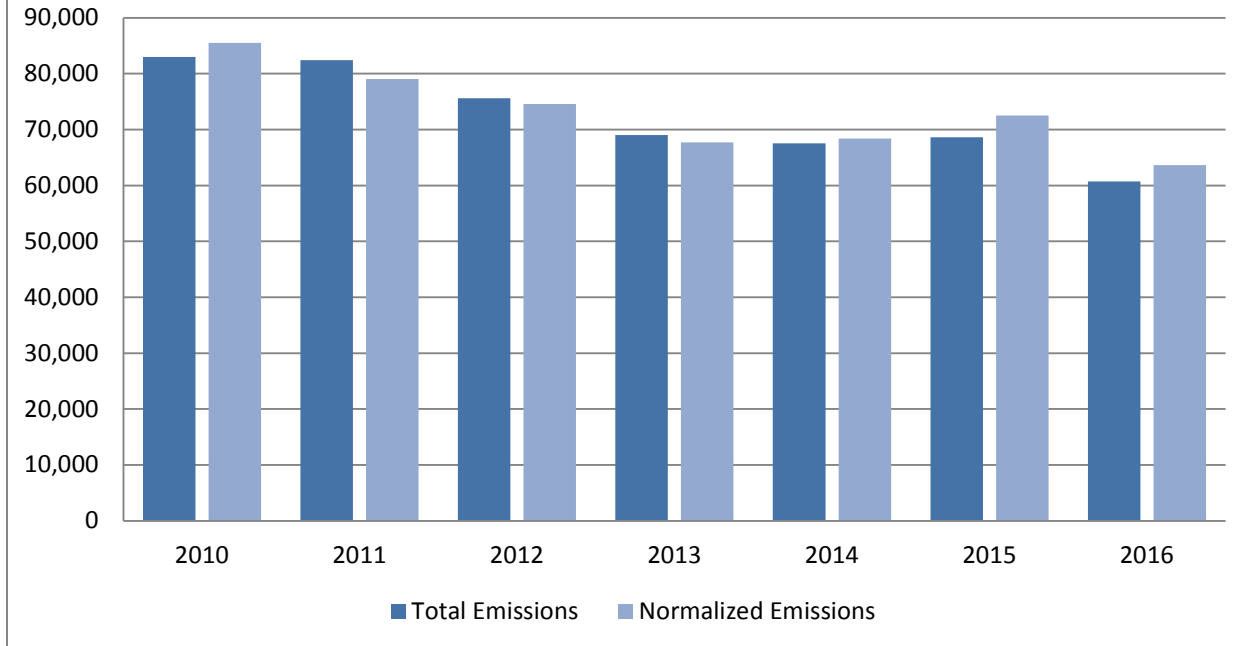
Provincial government emissions decreased in 2016 by 11% from 2015 levels. This can be largely attributed to a 13% decrease in buildings emissions. The overall distribution of emissions between sources in 2016 is similar to that of previous years with buildings as the largest source of emissions (51%) followed by vehicles (34%), business travel (13%) and office paper (2%).

## 1.2 Weather Normalized Emissions

Provincial government emissions from buildings are largely the result of fuel combustion for the purpose of space heating which is, of course, highly weather sensitive. In order to improve the comparability of annual emissions data over time, building emissions are often normalized to remove the effects of weather in order to isolate changes in energy use and emissions that are attributable to building performance.

Generally speaking, the main observation from Figure 4 below is that over the last seven years, the trend in Provincial government emissions is downward, with or without the effects of weather.

**Figure 4: Provincial Government  
Total and Weather Normalized GHG Emissions (tCO<sub>2</sub>e)  
2010 - 2016**



## 2. Highlights from the Ministry of Technology, Innovation and Citizens' Services

The Ministry of Technology, Information and Citizens' Services (MTICS), is responsible for providing a range of services that support the operation of the Provincial government including its buildings, vehicles, information technology and procurement services. As such, MTICS is well positioned to take coordinated action across Provincial government operations to reduce its related GHG emissions. The following is a summary of key initiatives taken by MTICS during 2016.

### Provincial Government Buildings

MTICS' Real Property Division (RPD) works with Workplace Solutions Incorporated (WSI), to manage the vast majority of the Provincial government's portfolio of facilities. The actions taken by RPD and WSI during 2016 fall into four major categories.

#### 1. Behavioural Change-Management Actions

MTICS undertook behavioural change campaigns again during 2016 to encourage the Provincial governments' 26,000 public servants to reduce their energy use within the building stock of roughly 1,600 owned and leased buildings. These campaigns were originally developed using the well-tested

principles of Doug McKenzie-Mohr, Chip and Dan Heath, and Jonah Berger as articulated in the books: *Fostering Sustainable Behaviour*; *Switch*; *Made to Stick*; and *Contagious*.

Over the five Hibernation Challenge campaigns that have been delivered since 2012, approximately 4,100 unique public sector employees have pledged to a series of daily actions to reduce their personal in-office energy usage during winter months. When cross-referenced against the email addresses from the 2016 Stay Cool Challenge, the total unique public servants tally grows to approximately 4,600. This roughly equals 15% of the Provincial government workforce.

As a member of BC Hydro's [Energy Wise Network](#), RPD receives seed funding, as well as some consulting time from a private sector consulting company, to support these two behavioural change campaigns, as well as providing for some internal-to-RPD training on net-zero energy buildings.

## **2. Operations and Maintenance Actions**

Since November 2014, a centralized team of WSI technical experts in direct digital controls, also known as the 'DDC Unit', has been reviewing building operations and implementing optimization measures. The DDC Unit calibrates building systems and works with field staff to bring those systems to their optimal performance. In 2016, the resulting annual energy savings and cost reductions amounted to 7,000 gigajoules and \$140,000, respectively, from 58 buildings.

In 2016, 20 building commissioning projects were approved for implementation in fiscal year 2017/18. Approval was based on the success of commissioning 23 other buildings in 2015/16 where low cost/no cost measures were implemented to optimize building operations and more significant potential energy efficiency infrastructure investment opportunities were identified.

Quarterly energy dashboard meetings as well as networking discussions with facility management service providers continue to reveal improvement opportunities.

Finally, continual improvement in energy performance is inherently built into MTICS' facility management service contracts and forms part of the performance management framework that governs these service contracts. Under this governance model, service providers have maintained a strong focus on energy management and have been successful demonstrating established performance outcomes.

## **3. Programming Actions**

MTICS' most notable workplace programming activity continues to be based on its Leading Workplace Strategies (LWS) model. LWS efforts supported the ongoing consolidation of ministry workspace in 2016 resulting in a decrease in the overall footprint of MTICS' building portfolio, leading to a reduction of approximately 2,757 tonnes of CO<sub>2</sub>e from stationary fuel combustion between 2015 and 2016. Other programming-related actions include a call to reduce building occupancy to support reduced heating, cooling and ventilation (HVAC) requirements, and the use of virtual collaboration tools such as audio, video and web conferencing to reduce business travel requirements.

#### 4. Infrastructure Actions

MTICS' capital planning process makes use of a pairwise evaluation methodology under which priority is given to infrastructure investments that meet a range of government imperatives (e.g. health and life safety, client programming, building integrity) and that may result in a reduction of energy use and associated GHG emissions.

The process defines and weights these criteria to enable consistent evaluation of potential capital projects and creates a defensible capital investment programme. This process was implemented to reduce subjectivity and increase transparency and produce a planning approach that is scalable to a large number of projects across a diverse portfolio of owned assets. The process also includes stakeholder engagement and a technical review resulting in a prioritized list of requirements for owned assets.

Overall during 2016, 27 energy impacting projects were completed worth about \$5.2 million. This investment was applied to HVAC (almost 40%), lighting (15%), building envelope (35%) and controls.

Four of MTICS' buildings were enrolled in the BC Hydro's Continuous Optimization Program for calendar 2016. Additionally, WSI conducted Level 1 Energy Conservation Measures audits fiscal year 2016-17 in five owned and five leased facilities.

In terms of new infrastructure, the Okanagan Correctional Centre was completed in 2016 and is expected to achieve LEED® Gold certification in 2017. New office space at Capital Park in Victoria is being purpose built for MTICS' Provincial government clients and is expected to achieve LEED® Platinum certification. Substantial completion of phase 1 is expected in the fall of 2017. Finally, another new facility, the Valleyview project, is being developed at the Riverview site in Metro Vancouver targeting LEED® Gold certification, and is expected to be substantially complete in the Spring of 2019.

MTICS also considers innovative pilot projects proposed by industry that save operating costs, energy, and associated GHG emissions. Special interest is given to projects that align with the [BC Tech Strategy](#) and [BC Jobs Plan](#).

Finally, MTICS' 2016 infrastructure actions included efforts to address challenges identified in its 2015 CNAR through:

- the roll out of a process to identify and implement energy projects in leased facilities; and
- the exploration of more sophisticated building automation strategies and technology to maximize building energy performance

#### 5. Ongoing Emission Reduction Planning

“Energy use and associated GHG emissions” is an area of focus within MTICS' Integrated Strategic Plan and a significant aspect under RPD's Environmental Management System (EMS). Under the Integrated Strategic Plan, short term energy intensity reduction targets have been set at 5% year over year from fiscal 2016/17 to 2018/19. Under the RPD EMS, short term targets of 2.5%, 3% and 3% over the same period are intended to reflect RPD's contribution to the ministry's targets.

Refinements to the RPD EMS saw the establishment of objectives that call for long term planning toward net-zero energy and water use, as well as short, medium and long term targets. Short term energy reduction targets are noted above, and the long term target aligns with the objective of reducing GHG emissions toward zero. Medium term targets are now under development and will serve as milestones toward achieving the ultimate objective of net-zero emissions. These objectives will be accomplished over time through activities in the aforementioned areas of: (1) behavioural change, (2) optimized operations, (3) client programming, and (4) infrastructure investments. Activities undertaken will reflect available resources, technological and administrative advancements, and priorities. As well, activities are and will continue to be required of facility management service providers under contractual obligations.

### **Provincial Government Vehicles**

The Provincial government continues to explore options to bring zero-emission vehicles into the fleet where feasible. All staff have access to DriveSmart BC and Idle Reduction Guidelines to improve their driving behaviours behind the wheel of both their work and personal vehicles.

As noted above, the use of virtual collaboration tools such as audio, video and web conferencing contributes to the reduction of business travel and related emissions. Moreover, telepresence equipment has been set up at various facilities across the province to facilitate an enhanced virtual meeting experience by public sector agencies. Teleworking is also encouraged and enabled under LWS.

### **Provincial Government Procurement – Office Paper**

MTICS provides its public sector clients with green procurement advice, tools and resources to support environmentally responsible purchasing and is accessible through MTICS' [web pages](#). This information is also made available to suppliers of goods and services.

Since 2015, the managed print services initiative was fully deployed. The initiative has reduced the printer fleet of 7,400 printers and other devices to 3,300 energy-efficient multi-function devices (MFDs). Twinned with this updated technology was the introduction of pull-print programming whereby jobs do not print until the user verifies the requirement at the MFD. This initiative resulted in a nearly 25% reduction in print volumes and was the recipient of a MTICS SAIL Award which recognizes sustainability action, innovation and leadership.

## **3. HIGHLIGHTS FROM OTHER MINISTRIES**

This section provides an overview of actions taken by specific ministries and agencies to reduce their GHG emissions and their plans to continue reducing emissions in 2017 and beyond.

### **3.1 Ministry of Aboriginal Relations and Reconciliation**

- Whenever possible, ministry staff reduced travel emissions by using video/teleconferencing services for meetings and negotiations, while still fulfilling ministry mandates to engage with First Nations and stakeholders.



- Within their offices, staff utilized recycling and composting programs, as well as paper reduction actions through the use of tablets, laptops and projectors in meetings instead of paper documents.
- In 2016, staff also participated in cross-government green initiatives such as Bike to Work Week, Stay Cool Challenge, and Hibernation Challenge.
- The ministry will continue to undertake these kinds of initiatives in future years.

### **3.2 Ministry of Advanced Education**

- The ministry broadened its use of videoconferencing through the purchase of portable videoconferencing equipment, installation of videoconferencing in a satellite office as well as the provision of staff training and technical support. In 2016, the ministry hosted approximately 147 video conferences involving approximately 600 participants. This use of technology avoided considerable travel to and from Vancouver as well as other parts of the province and the country.
- The ministry's StudentAidBC program met a major milestone in 2016. The program reduced 97% of paper-based applications for financial assistance by transitioning to an online application process available to all students in full-time studies.
- In 2017, the ministry will continue to encourage paper reduction activities, promote participation in ministry green team activities, participate in government-wide sustainability initiatives and work with the MTICS on potential building upgrades to reduce their related energy use.

### **3.3 Ministry of Agriculture**

- In 2016, the ministry conducted an energy audit for the Abbotsford Agriculture Centre which led to the shutting down of HVAC systems on Sundays and installation of LED lighting. A high efficiency generator was also installed at the Centre. These actions contributed to a 10% decrease in the ministry's overall building emissions between 2015 and 2016.
- With regard to business travel, ministry initiatives included ongoing efforts to reduce travel, utilize electronic collaboration tools, and encourage the use of public transit for meetings within Victoria. An increase in the ministry's Victoria-based bike commuters resulted in the addition of a new bike rack to the secure bike storage area to increase storage capacity.

### **3.4 Ministry of Children and Family Development**

- In 2016, the ministry replaced aging fleet vehicles with 34 fuel-efficient vehicles.
- In order to prepare staff to work in LWS environments which typically provide less file storage, the ministry expanded its adoption of electronic records management practices. The 'lessons learned' in the process will be applied to other ministry offices making similar transitions.
- With regard to future GHG reduction planning, the ministry is actively participating in LWS for its locations in Victoria, Kelowna, Vancouver and Surrey. Office consolidations combined with LWS workspace layouts result in lower consumption of space and energy through smaller footprints, and more efficient use of 'shared amenities' such as lunch rooms.

### 3.5 Ministry of Community, Sport and Cultural Development

- The ministry occupies the Mazda Building (800 Johnson Street in Victoria, BC) and in conjunction with the landlord has implemented various building improvements and operational changes to reduce its environmental impact. In 2016, five heat pump units were replaced with more efficient units. There will be ongoing quarterly energy and HVAC monitoring to maintain performance gains.
- The ministry also undertook to raise staff awareness about day-to-day choices that can reduce one's personal carbon footprint, including virtual meeting technology and greener commuting options. Discretionary travel has also been reduced which contributes to further emission reductions.
- Future planning was conducted in 2016 to prepare for LWS which, when fully implemented, will improve office space utilization and reduce per person building emissions.
- The ministry also plans to support more electronic records management activities to reduce paper consumption and related GHG emissions.

### 3.6 Ministry of Education

- In 2016, the ministry implemented an electronic process for administering the provincial scholarship program and the teacher certification application process from paper-based forms processes.
- The ministry plans to continue to minimize GHG emissions by permanently vacating the second floor of the office building at 620 Superior Street which will reduce the ministry's floor space and GHG footprint by one seventh. LWS programming will be applied in the remaining space and supplemented with LED lighting and an energy efficient HVAC system. During the process, nearly a quarter of staff will work in external government facilities already optimized for energy efficiency.

### 3.7 Ministry of Environment

- Over the last 7 years, the ministry's emissions have generally been trending downward. In the case of the Ministry's buildings, the reductions are attributed to a range of factors including reductions in its real estate footprint, generally warmer winters, the declining carbon intensity of B.C.'s electricity, and staff participation in behavioural change programs (e.g., Hibernation Challenge, Stay Cool Challenge) delivered by Shared Services B.C.
- Two thirds of the ministry's GHG emissions is attributed to its fleet, the result of its extensive environmental stewardship activities across the province including permitting, inspections, managing the province's parks and protected areas as well as monitoring and enforcement. A key strategy within the ministry's fleet management practices involves purchasing new and replacing end-of-life vehicles with the smallest and most fuel efficient vehicles available to meet operational requirements.
- In September of 2017, the ministry is slated to move to the new Capital Park office buildings in Victoria's legislative precinct. The development embraces green building principles in construction and ongoing operations and is targeting LEED® Platinum certification, LEED®'s highest level of energy and environmental performance. Moreover, the adoption of LWS within the new offices will

contribute to further emission reductions by combining technology and innovative interior design to reduce workspace requirements per employee.

### **3.8 Ministry of Energy & Mines and Ministry of Natural Gas Development**

- The ministries encouraged workspace energy conservation through education and signage in common areas and enhanced management of computer monitors and boardroom and breakroom lighting. This was supplemented by closing window blinds at the end of the work day to maintain heat in winter and reduce heat gain in summer.
- Less paper use was achieved through actions such as efficient default printer settings, the use of eApprovals (an electronic approval system), and a new paperless billing process.
- The ministries reduced their travel-related GHG emissions through the use of audio, video and web conferencing supplemented by the provision of bus passes and a ministry bicycle for travel to and from meetings.

### **3.9 Ministry of Finance**

- The ministry's key actions in 2016 included reducing the use of paper by transitioning to electronic document management options, implementing a recycling program, removing desk-side garbage in all lower mainland and Victoria offices, and supporting mobile working opportunities.
- The ministry plans to continue to provide awareness and communication, expand to electronic filing, support flexible work options, sustainable travel modes, and work in partnership with MTICS on further corporate initiatives.

### **3.10 Ministry of Forests, Lands and Natural Resource Operations**

- The ministry's GHG emissions reached a 5-year low in 2016, with a decrease of approximately 13% from 2015.
- Efforts to replace large trucks with more efficient fleet vehicles (trucks, SUVs and cars), where appropriate, contributed significantly to the reduction. The significant reduction may also be attributed to a less active wildfire season in 2016.

### **3.11 Ministry of Health**

- The ministry migrated to e-billings for ministry mobile devices (approximately 300) eliminating the need for monthly paper invoices.
- It installed a Lync® Smart Room in the Deputy Minister's Office boardroom to enhance communications and reduce travel.
- Ministry headquarters office paper needs are met by using 100% recycled, FCS certified paper, for all 8 ½" x 11" white paper requirements.

### 3.12 Ministry of International Trade and Ministry of Jobs, Tourism & Skills Training

- The ministries continued work on space optimization during 2016, initiating plans to bring additional branches into consolidated flexible workspaces. The initiative is closely linked to LWS, and will enable multiple teams to consolidate in one location which will reduce per person building energy consumption.
- Ministry business travel has been limited in accordance with its ‘managed travel’ policy. Staff were also encouraged to rely more heavily on virtual meeting technology as an alternative to travel when possible.
- Future initiatives include sustained implementation of plans for space optimization, and electronic records management activities to reduce paper volumes.

### 3.13 Ministry of Justice and Ministry of Public Safety and Solicitor General

- In collaboration with MTICS, all current buildings will be upgraded with energy efficient lighting, appliances and heating as funding permits while any new ministry buildings are being constructed to LEED® Gold standards including the Okanagan Correctional Centre which opened in 2016.
- Extensive use of video-conferencing has decreased the need for travel by prisoners, witnesses, the Crown and judiciary.
- During the 2016 calendar year, the ministries continued to participate in campaigns such as battery recycling, Bike to Work Week and the ‘coffee cup challenge’.

### 3.14 Ministry of Social Development and Social Innovation

- **Physical Footprint Strategies for Efficiencies**  
Service modernization and integration with several Service BC locations resulted in a reduction in facility costs (10 modernizations and integrations were completed within the last fiscal). As part of the ministry’s LWS programming, closure of several offices reduced the ministry’s physical footprint and optimized the use of existing office spaces. Further enhancements to My Self-Serve improved the online application process as clients can now use electronic signatures for the application process and upload documents, making it faster, more convenient and ultimately reducing previously required office visits.
- **Paper and Mailing Reducing Initiatives**  
Continued promotion of electronic funds transfer for payments to clients and service providers reduced cheque production and paper usage (e.g. EFT for BC Hydro alone resulted in one file replacing over 5500 cheques), and streamlining of the “burial and funeral process” in the ministry’s Integrated Case Management computer system reduced its printing and paper usage.
- **Greenhouse Gas Reduction Initiatives**
  - replaced twenty-one older fleet vehicles with new, more efficient models which was 30% of the total vehicles in 2016;

- initiated transfer requests to allow employees to work closer to home, reducing commuting time and fuel consumption; and
- encouraged online training sessions and the use of virtual meeting platforms to reduce travel.
- Future emission reduction plans include the replacement of fleet vehicles, identifying additional workspace opportunities for the adoption of LWS, and expanding deployment and use of audio, video and web conferencing tools.

### **3.15 Ministry of Small Business & Red Tape Reduction**

- During 2016, the ministry continued to leverage technology in significant ways including:
  - expanded use of audio, video and web conferencing;
  - use of surface tablet computers by field inspectors to save trips to the office; and
  - staff carpooling while on business travel.
- Going forward the ministry plans to explore options for electronic records management to reduce paper consumption, while continuing to assess the potential for LWS to reduce per staff footprint at multiple locations.

### **3.16 Ministry of Transportation and Infrastructure**

- The ministry purchased 14 hybrid vehicles which consume on average 43% less fuel than a gasoline or diesel vehicle of the same make and model, thereby producing approximately 43% fewer GHG emissions per kilometer travelled. The trend of purchasing energy-efficient vehicles will reduce the overall GHG emissions from ministry's fleet, as new vehicles replace older ones.
- Staff also transitioned to utilizing small SUVs (e.g. Nissan Rogue and Outlander) rather than traditional small trucks, which produce approximately 30% fewer GHG emissions. Future planning includes the procurement of fully electric vehicles.
- In 2016, the ministry updated their staff cellular billing process, working with the phone provider and their central Information Management Branch to replace individual employee phone bills with a single consolidated e-bill. This initiative saves 5,287 pages/month or 63,444 pages per year.

### **3.17 BC Public Service Agency**

- During 2016, the Agency was able to significantly reduce the need for physical file storage by scanning records, as well as reduce the movement of file boxes within the province.
- To reduce travel related GHG emissions, the Agency invested in upgrades to the boardroom technology in the Victoria office, leading to better communications without the need to meet in person.
- The Agency continued to use LWS to support work from home (telework) opportunities, thereby reducing both the requirement for physical office space and travel between office and home. Approximately 80% of Agency staff have the ability to telework.
- Where feasible, the Agency strongly supported both a paperless environment and the conservation of energy through workplace signage, such as turning out lights when a room is not in use, closing blinds to reduce heat/cold transfer overnight, considering the environment before printing, etc.

- In the future, the Agency plans to build on past successes and to support and encourage initiatives to reduce waste, encourage a paperless environment, and reduce travel by utilization of technology and tools such as audio, video and web conferencing as well as telework strategies.

