



# Transformation and Technology Plan

## 2012/13 – 2014/15



Ministry of  
Transportation  
and Infrastructure





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## A Message from the Deputy Minister



Never in history has technology moved at such a rapid pace, and never before have citizens had so many opportunities to engage with government to influence the systems that support them. As emerging technologies are becoming more affordable, citizens are becoming increasingly sophisticated in the ways that they interact with

government, and expectations are higher than ever for the Ministry of Transportation and Infrastructure to engage citizens using new media.

Since government published [Citizens @ the Centre 2.0](#), technology has continued to evolve at a rapid pace. Citizens @ the Centre aimed to change how the B.C. government delivers its core services. It called for releasing data for citizen use, proactively sharing government information, engaging with citizens through a revitalized online presence, and applying the opportunities of technology to better support the mobility of our workforce. The open government way of thinking has been embraced by governments at all levels across the world, and B.C. is leading the nation with its approach to proactively releasing data and information for citizens to be innovative.

Building on the ministry's initial Transformation and Technology plan, the strategies outlined here are driving change within our organization to ensure we are responding to the needs and expectations of British Columbians. The plan also highlights areas where the ministry has made tremendous progress, such as our enhanced DriveBC tools.

New this year are strategies to improve the efficiency and reliability of travel at our borders through the use of technology. In addition, the ministry is embracing government's four corporate initiatives: Open Data, Open Information, Internet, and Leading Workplace Strategies, all with the view of encouraging and engaging our citizens to become involved with issues that are important to them.

A century of imagination and innovation has built the highways, ports, airports, and rails that connect our province to the world. The ministry is modernizing the province's infrastructure with the tools of the digital era. This plan outlines the steps that the ministry is taking to transform how we deliver our services and improve our transportation network with technology.

We are acting upon the strategies that were presented last year, adding new strategies, and building further areas of focus that align our ministry with the principles of open government. I encourage you to participate in the cultural transformation of our workplace.

**Grant Main**

**Deputy Minister**

**Ministry of Transportation and Infrastructure**





## Chapter 1

# Our Vision

The Ministry of Transportation and Infrastructure (TRAN) has launched a new era of service delivery, where technology serves as a foundation to a world-class transportation system. By embracing Citizens @ the Centre: B.C. Government 2.0 principles, the ministry is bringing British Columbians into an age of service delivery where citizen engagement is taken to new heights and access to value-added government information is seamless and fast. By fostering a culture of open government, TRAN is leveraging an intelligent transportation system with the ingenuity of citizens and the capital of industry to create a transportation network for the future. This transportation network combines the static strength of concrete and steel with the dynamic power of technology and innovation.

Engaging citizens begins with making our data and information available online. We are learning which types of data and information citizens value the most and then providing those records in a manner that makes them easy to analyze and use. In turn, this invites individuals and organizations to transform data and information into tools and applications that help individuals, institutions, and communities. Open government promotes two-way dialogue with citizens and collaboration with other

ministries, partners, governments, and industry groups to create innovative solutions to the challenges faced by British Columbians.

We are improving service delivery by working more collaboratively with our partners who deliver transit, ferry, and taxi services. Working with our partners, our goal is for citizens to interact in ways never before imagined by using identity information management technology.

The ministry is building intelligent road networks for tomorrow. This will result in infrastructure that can reduce congestion and commuter times, increase safety for all road users, improve transit flexibility, and manage constantly shifting road conditions. We are continuing to make transformative improvements to the provincial transportation network, engineering a future where vehicles communicate with highways, and citizens have all the information they need in the palm of their hand.







TRAN is investing in intelligent border crossing technologies, more NEXUS lanes for drivers, and a smart phone app that will communicate real time border wait times at three different locations in the Lower Mainland to the travelling public.

To support the seamless movement of goods, we are working to promote our competitive advantage by identifying any aspects of the supply chain that need to be improved. With plans to double the number of *Weigh2GoBC* transponders, the ministry will increase trade efficiency and decrease freight costs for the transportation industry while improving carrier safety.

Creating the workplace of tomorrow means rethinking the tools we use today. We are exploring new technologies and revisiting the idea of the traditional workplace. The Leading Workplace Strategy is one of the means by which TRAN will attract the talent of tomorrow.

In imagining our future, the ministry is fully committed to engaging citizens and industry with open government practices to strengthen our strong ties with communities all across the province and to engage citizens in important decision making. B.C.'s provincial transportation network is recognized on the global stage and with a renewed commitment to move more goods between B.C. and Asia, our transportation network is essential to the future vision for the provincial economy.

The *2012/13 – 2014/15 Transformation and Technology Plan* continues to focus on the three strategic shifts citizen participation, self-service, and business innovation, by tracing our past successes, outlining plans for our future, and setting out the actions that we are taking today to transform and enhance our service delivery for tomorrow.





## Chapter 2

# Our Progress

Our 2012/13 – 2014/15 *Transformation and Technology Plan* updates and builds on the tremendous progress that has been made in the past year.

Last year, the ministry created building blocks that guide how we are transforming tomorrow's transportation network. We are:

1. engaging citizens in two-way, real time dialogue and open data sharing;
2. becoming world leaders in goods movement and tracking; and
3. integrating smart highways technologies into the network.

These three building blocks are supported by strategies that will let the ministry embrace the government-wide shift toward a more open government that delivers better information more efficiently to its citizens. Those strategies are outlined later within this plan.

Below are highlights from a few of the fourteen strategies; specifically social media, DriveBC, BC HighwayCams, Weigh2GoBC, and the Regional Traffic Management Centre.

We have expanded our social media presence, driving a cultural shift in our organization. TRAN now has a presence on Facebook, Flickr, YouTube, Foursquare, as well as two Twitter accounts (@TranBC and @DriveBC) and a new web site [www.tranbc.ca](http://www.tranbc.ca). Content is critical when it comes to successfully collaborating with citizens to solve our transportation challenges, and citizens have relied on our social media channels during crisis events that occurred throughout the past year. The Highway 1 mudslide that occurred near Bridal Falls is one example where, within 24 hours, crews were able to reopen the highway while @DriveBC provided up-to-the-minute information to the travelling public. Immediately after the slide, media, first responders, and travellers were able to use our social media sites to stay informed. As a result, DriveBC became the fourth most talked about topic in Canada on Twitter.

TRAN has been making great progress on all 14 strategies from the 2011/12 *Transformation and Technology Plan*:

- New data holdings to DataBC
- Road and transit user mobile apps
- Enhancements to DriveBC
- A new Social Media presence
- Expansion of the webcam program
- Pacific Gateway and supply chain efficiencies
- Expansion of Weigh2GoBC
- Apps for the commercial transport industry
- Collision prediction modelling
- Intelligent Highway Signs
- Transit Smart Cards and fare gates
- Traffic monitoring with cellular data
- A new regional transportation management centre
- Infrastructure for intelligent vehicle systems





The progress that has been made with our social media presence is only one example of how we are driving a cultural shift in our organization.

DriveBC has received substantial upgrades in the past year. DriveBC now has a mobile version that is accessible from any smartphone. This mobile tool is continuously being updated to promote new opportunities for citizen participation. What's more, BC HighwayCams are now accessible through the mobile version of DriveBC.

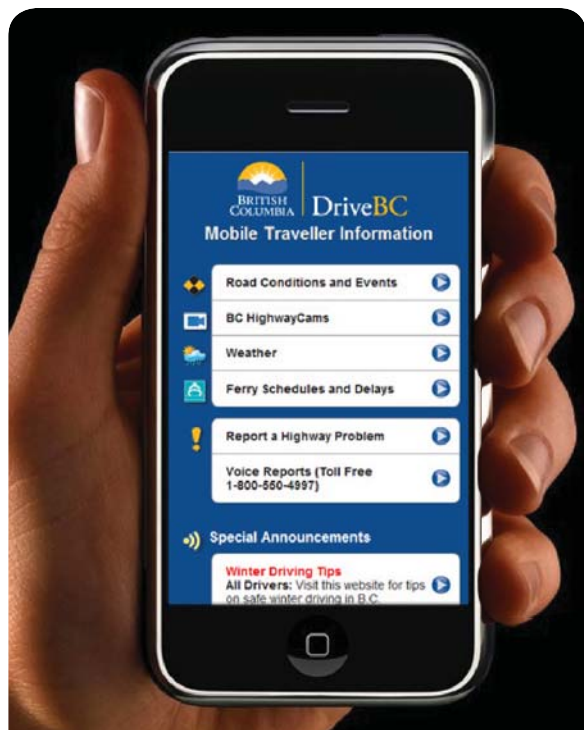
DriveBC's new map interface displays construction and maintenance events, incidents, road conditions, weather, and webcam information. DriveBC can display public safety and emergency announcements in real time. The DriveBC team also uses social media to disseminate information to the public. We are currently piloting an automated system that would post major highway events on Twitter immediately.

All of these improvements to DriveBC enable our road users to look at weather and road conditions either before or during a trip, and they can travel with the knowledge

that they have the most current information about the condition of the roads.

Over the last year we added over 30 webcams to our inventory. When considering the location for these cameras we engaged with citizens and commercial stakeholders across the province and collaborated with our road, bridge, and electrical contractors to determine the locations that would bring the highest levels of user satisfaction. Routes that lacked coverage over long distances and areas that experience rapid weather changes were at the top of the priority list. The result is an enhanced webcam inventory that provides real time views of the highway network that anyone can access from a computer or a mobile device.

Our success has not only been limited to creating new online tools. The Weigh2GoBC program, which is administered through our Commercial Vehicle Safety and Enforcement Branch, uses weigh-in-motion and automatic vehicle identification technologies to enable more efficient movement of commercial vehicles throughout the province. Once a commercial vehicle has been initially checked at a Weigh2GoBC enabled station, it can be given a bypass at all subsequent inspection stations for up to 12 hours. This saves time for industry by getting goods to



Heavy equipment moves in to remove the fallen debris caused by a mudslide on Highway 1 near Chilliwack. Crews are working to clear the road for traffic.





market more quickly. Through marketing and industry engagement, Weigh2GoBC program participation has quadrupled in the past two years, with commercial carriers registered from British Columbia and Alberta.

The Regional Traffic Management Centre (RTMC) is on target to open in fall 2013, and it will foster collaboration between multiple agencies such as Transport Canada, TransLink, BC Transit, taxi companies, municipalities, and regional and district offices, accelerating the pace at which up-to-the-minute information can be shared with commuters in the Lower Mainland and the Fraser Valley. The RTMC is a prime example of business innovation and collaboration with other jurisdictions, and the end result will be a world-class facility that will facilitate collaboration between different transportation service providers and increase citizen satisfaction with our services.

The principles of service transformation and open government have driven new areas of focus for proactively releasing information. Data that was previously only accessible by ministry staff is being shared with all to promote innovation. Opening up data is stimulating the economy in countless ways. For example, entrepreneurs looking to open a new business can use our traffic count data on DataBC to determine the busiest intersections in a community.



**twitter** Home Profile Find People Settings Help Sign Out

During the Highway 1 mudslide, DriveBC was the 4th most talked about topic on Twitter in Canada (Hwy1 and mudslide were in the top 15)

9:35 AM Jan 12th

 **TranBC** BC Transportation

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**twitter** Home Profile Find People Settings Help Sign Out

During the Peace River Flood, the Flickr photos of the event received 170,000 views in 3 days.

9:35 AM Jan 12th

 **TranBC** BC Transportation

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All of our progress in this past year can be attributed to an organizational mindset that has a long history of adaptation and a willingness to embrace change. Our ministry is one that continuously adapts to changes in infrastructure priorities, integrating the latest technologies that are available to improve the satisfaction of citizens using the provincial transportation network.

For detailed status reports on the ministry's 14 strategies outlined in our *2011/12 Transformation and Technology Plan*, see Supplement F.



## Chapter 3

# Our Role in Open Government

In today's networked world, we are accustomed to having convenient access to the information we need, wherever we go. We use new communication tools to stay connected and take part in informed conversations. We expect that the data and information which impacts our lives, directly or indirectly, will be available at our fingertips. We demand that data and information be openly shared and that the access to data and information be simple to use and comprehensive in scope.

Open government invites citizens to become involved with the issues that are important to them and that shape their communities. It promotes government transparency and accountability. It lets talented people outside and across government get answers, discover insights, and inspire change. It empowers citizens by providing the tools and information they need to solve problems and to create value from information. It creates new opportunities to inform

citizens about government and enable participation in government decision making through the mechanisms of open data, open information, and a new approach to our Internet presence.

We are redesigning our online presence, making it easier for everyone to find the answers and services they need. We are opening up the public's access to our records and data. We are building a modern work environment that lets our employees deliver the high quality service the public demands and deserves.

Within the ministry, the stewardship, management, and implementation of the Transformation and Technology strategies will be the mandate of the newly formed Transformation and Technology Advisory Group (TTAG). This group of employees across the organization will provide input on future strategies, report on progress, and lead the transformational process.



## Open Data

The ministry is opening up public access to data by putting it online for anyone to download and use with minimal restrictions. Citizens and groups can conduct research, analyze statistics, and develop applications. Users will be able to take data provided by the ministry and combine it with other data sources to create interactive tools, value added applications, or products.

For example, during the 2010 Vancouver Winter Olympics, TRAN staff created an interactive web map to monitor traffic along the Sea-to-Sky Highway. Data from





traffic monitoring cameras, highway drawings, and lane configuration details were 'mashed up' to present an up to the minute picture of traffic conditions so that TRAN and its partners were able to collaborate by monitoring traffic flow and responding accordingly. Citizens will be able to make similar mash-ups.

TRAN collects a wide variety of information and data. Road and bridge statistics, weather information, traffic volumes, and collision statistics are just a small portion of the data collected by the ministry. We are currently examining all our data holdings to determine which data will provide value to the public. Throughout this process we will be engaging with citizens to ensure we are releasing data that is of value to the public we serve.

The government's new website, [DataBC](#), provides citizens with one-stop access to government data. Ministries are now working to expand the quantity and quality of open data available through this portal.

We are also transforming the way we collect, review and share data to ensure that we can regularly publish current and high-quality data in a responsible and efficient way.

Our objective is to openly provide as much data as quickly as possible and to capitalize on the exciting future envisioned and enabled through Open Government. Over the next three years, ministry staff will oversee activities that entrench the principles of open data in our business processes.

For details about the ministry's Open Data initiative, refer to Supplement A.

## Open Information

Open Information parallels open data, as it too focuses on opening government information to the public. Open Information aligns with the Open Government strategy, and promotes transparency, engages citizens, and promotes trust between citizens and the ministries mandated to serve them.

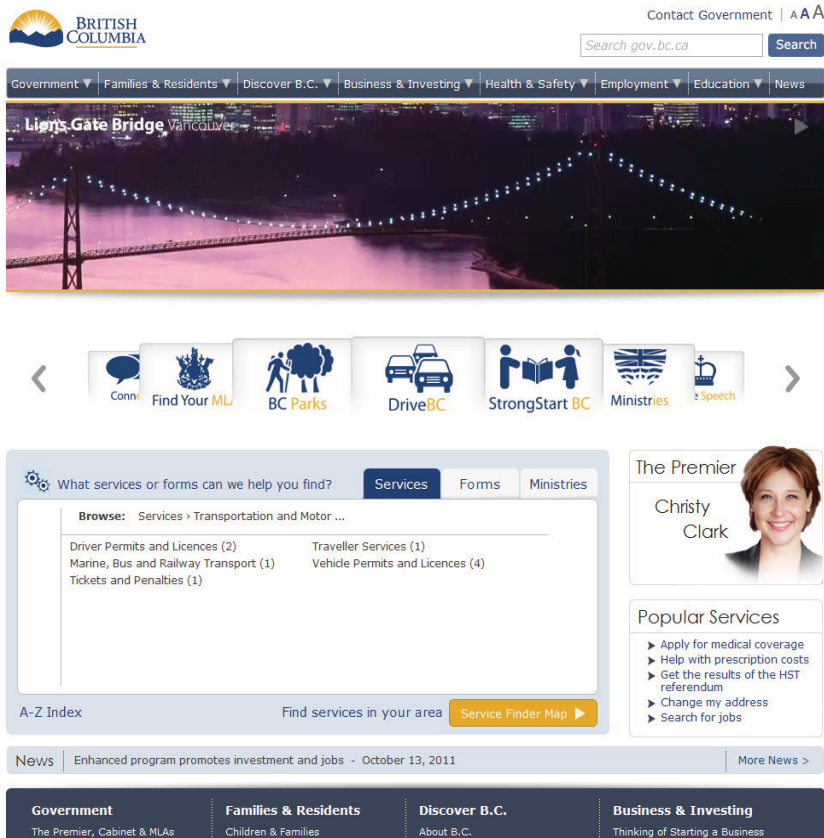
Open data and open information are really two sides of the same coin. Open data refers to information **held** by government, whereas open information refers to information **about** government.

TRAN is now routinely publishing useful records online rather than waiting for specific requests (traditionally through the Freedom of Information and Protection of Privacy Act). This shift helps provide information that is timely and straightforward, creates greater openness and accountability, and leads the way for participation and collaboration with citizens.

More than just a commitment to greater openness, the availability of TRAN records will help citizens understand the complexities involved in building infrastructure and offer citizens the chance to become fully aware of the decisions being made that directly affect them.

As part of our commitment to open information, TRAN is preparing a comprehensive list of record types that would be good candidates for routine online publication, targeting popular areas of enquiry. The goal is to post records the public wants to see and remove restrictions, while respecting our privacy, security, copyright, legal, and





We are following the approach taken by the Ministry of Labour, Citizens' Services and Open Government (LCTZ) with its recent redesign of the government home page. This redesign was based on extensive user experience testing, and it followed the award-winning design principles used by the governments of California and Utah. The new approach focuses on the usability experience and needs of the citizen, rather than the government's structure and priorities.

The ministry is inventorying and evaluating all its current web content. We are identifying our most popular and business critical services and information pages, as well as the audiences who use them, and ensuring they are easily accessible from the B.C. government home page.

To make all ministry pages findable through the government home page, we are categorizing our content to optimize searches. The ministry is also developing a content policy for the creation and maintenance of online web pages to ensure we are providing the public with current and useful information.

contractual obligations. Additionally, we will reach out to citizens to learn more about what types of records people would like to see routinely posted.

For details about the ministry's Open Information initiative, refer to Supplement B.

## Internet Strategy

Ultimately, the objective of the Internet strategy is to help citizens. The ministry is redesigning its web site and other online offerings to ensure citizens can find the information and services they want as quickly as possible, whether searching from the ministry site or from the new [provincial government home page](#).

For details about the ministry's Internet strategy, refer to Supplement C.

## Leading Workplace Strategies

Leading Workplace Strategies (LWS) refers to the cultural shift already underway across the B.C. Public Service and around the world – a shift towards greater mobility and flexibility in our work environment. This is an evolution that can be traced back to emerging technologies – the cell phone, the laptop, the smartphone – that have given people greater freedom in how and where they work. In fact, more and more, work is no longer "a place to go". With today's tools, people can work anywhere.



LWS means ensuring employees have the right tools and the right space for the right job. For example, over 100 Provincial Field Services employees are mobile and move their office trailers to project sites, using Virtual Private Networking (VPN) to connect to the government network to access programs essential to monitoring progress on our infrastructure projects.

Over the next three years, the ministry will explore flexible and mobile workspaces across the province. We will work together to identify work styles and the enabling physical supports required to enhance our flexibility.

Where appropriate we will work with individual work units to create mobile/flexible workspace options such as:

- non-territorial space (e.g. hot desks, hot offices, quiet space/areas, hub/resource areas);
- telework; and
- team space (e.g. team tables, project spaces, informal breakout spaces).

As part of our change management strategy, we will evaluate the ministry's cultural readiness for this shift. For example, it is critical that we maintain our existing sense of community in a world where we are not all necessarily tied to one physical location all day, every day.

For details about the ministry's Leading Workplace Strategies, refer to Supplement D.







## Chapter 4

# Our Future – Building Blocks, Strategies, and Actions

The ministry's *2012/13 Transformation and Technology Plan* continues the focus of citizen participation, self-service, and business innovation.

Working with our partners and ministry employees, resources to accomplish the actions presented for fiscal 2012/13 are in place. Additionally, our Transformation and Technology Advisory Group (TTAG) will report regularly to executive on the progress being made, issues, and work to identify future transformation strategies.

Continuing with the building blocks created in our 2011/12 plan, the ministry will take action on the following strategies over the next three years.

STRATEGY		ACTIONS			LINKAGE TO 3 SHIFTS
		2012/13	2013/14	2014/15	
Building Block 1: Citizen Engagement – A Two-way Dialogue and Open Data Sharing					
1.1	Contribute new data holdings to DataBC (see Supplement A for detailed plan).	Implement the Open Data plan.  Inventory and review ministry data sets.  Release priority data sets.	Continue to identify and publish datasets that add value and look for efficiencies in the Open Data process.	Continue making contributions to DataBC.  Collaborate across government to share best practices.	
1.2	Develop road and commercial vehicle mobile applications.	Develop “Report a Highway Problem” mobile app for reporting highway issues.  Develop a mobile app that monitors border waits.  Develop Border app to provide location based travel time information.  Engage public to identify future mobile app requirements.	Develop new apps as determined through citizen engagement.	Develop new apps as determined through citizen engagement.	





STRATEGY		ACTIONS			LINKAGE TO 3 SHIFTS
		2012/13	2013/14	2014/15	
1.3	Enhance Drive BC services.	Incorporate congestion information, interactive voice response (IVR) system, web-based discussion forum, and a regional traveller web site.  Implement regional and route specific DriveBC Twitter subscriptions.	Continue development on IVR system.  Implement a DriveBC Regional Traveller web site.  Continue to leverage social media tools and strategy to further engage citizens and improve customer service.	Actions will be determined by available and emerging technologies.	CP SS BI
1.4	Grow usage of social media tools.	Double followership on TranBC and DriveBC.  Establish an open public forum for feedback.	Continue to build influence and engagement online.	Continue to build influence and engagement online.	CP SS
1.5	Expand the webcam program to provide real time views of the highway network that citizens and industry can access from a computer or a mobile device.	Install 30 additional webcams.  Assess citizen feedback on user-controlled webcams to determine further applications.  Pilot a multi-function web camera.	Install 30 additional webcams.  Pilot video streaming in selected webcams.  Assess functionality and popularity of user-controlled pilot locations to determine if further installations will benefit the public and the ministry.  Assess viability of mobile (portable) camera systems.	Further development will be influenced by citizen engagement and availability of emerging technologies.	SS BI
1.6	Implement our Open Information plan (see Supplement B for detailed plan).	Identify records.  Consult with the public.  Review and gain approval to release records.	Develop process to automatically identify records for proactive release.	Continue making contributions to the Open Information web site.	CP BI
1.7	Redesign ministry web site presence using our new corporate Internet Strategy (see Supplement C for detailed plan).	Inventory and evaluate web properties.  Consult with the public.  Make properties easier to find.  Develop Internet governance model.	Update ministry internet properties by adopting government standards.  Convert current web properties over to government's new look and feel.	Continue governance of ministry Internet presence.	CP BI



Citizen Participation



Self Service



Business Innovation



STRATEGY		ACTIONS			LINKAGE TO 3 SHIFTS
		2012/13	2013/14	2014/15	
1.8	Implement Leading Workplace Strategies (see Supplement D for detailed plan).	Identify ministry work styles. Identify business areas to pilot plan. Educate and engage employees.	Engage employees in planning, design, and implementation.	Support cultural change.	BI
Building Block 2: World Leaders in Goods Movement and Tracking					
2.1	Work with Pacific Gateway Alliance (PGA) to continue the use of technology for measuring the supply chain, in an attempt to identify inefficiencies and promote competitive advantages.	With our partners determine which data sets, that measure end-to-end supply chain, will be used for monitoring internal performance. Determine what information can be shared with the public, used for marketing activities, and on trade missions.	Produce four technical quarterly reports on the performance of the supply chain. Determine actions for improving reliability of the supply chain. Continue to refine and release information used for marketing.	Implement identified improvements. Promote any supply chain improvements to the public.	CP SS
2.2	Expand the Weigh2GoBC program.	Continue to increase market awareness and increase participation in Weigh2GoBC. Explore and develop partnerships with other jurisdictions to explore mutual benefits for Weigh2GoBC registrants and participants in programs outside of B.C. Add one additional intelligent scale to the network.	Continue to increase market awareness and increase participation in Weigh2GoBC. Identify additional key corridors and locations for W2G enabled inspection stations.	All project work is planned for completion by March 2014.	CP SS



Citizen Participation



Self Service



Business Innovation



STRATEGY		ACTIONS			LINKAGE TO 3 SHIFTS
		2012/13	2013/14	2014/15	
2.3	Develop mobile applications tailored for the commercial transport industry.	<p>Perform routing feasibility study (including data analysis and environment scan) and create business plan to deliver a solution.</p> <p>Publish an interactive viewer that allows searching and filtering by highway, location, structure, and vehicle height.</p> <p>Establish a CVSE public feedback forum.</p>	<p>Have the clearance data available via the Open DataBC portal.</p> <p>Optimize Transportation Permitting System for use with mobile platforms.</p>	All project work is planned for completion by March 2014.	CP SS BI
Building Block 3: Smart Highways Technologies					
3.1	Utilize collision prediction modeling (CPM), in addition to collision history, on all expansion projects valued over \$20 million.	Implement CPM throughout the ministry on expansion projects valued under \$20 million.	Monitor the results of improvements and collision predictions based on actual information over the next five to seven years after the road improvement has been put in service.	Based on the findings from previous years, update prediction models as necessary.	BI
3.2	Install intelligent signs at key decision locations throughout the network that provide congestion, road condition, weather, and routing information to motorists.	Develop Expansion of Border Advanced Traveler Information System (ATIS) with a new sign on Highway 1 near Highway 11; New Massey/Alex Fraser ATIS system to advise motorists of travel times on Highway 91 and Highway 99; Highway 15 FAST lane enhancements, including Commercial Vehicle Delay Information.	Develop a long-term deployment strategy of intelligent signs.	Pilot the use of communicating advisory messages to vehicles where vehicle technology permits.	CP SS





STRATEGY		ACTIONS			LINKAGE TO 3 SHIFTS
		2012/13	2013/14	2014/15	
3.3	Leverage Identity Information Management (IDIM) to provide consistent high quality authentication and authorization for public and ministry services.	Support TransLink in construction of faregates and marketing of Compass Card.  Analyze opportunities to add IDIM to existing ministry services.	Implement Compass Card. Complete business cases with TransLink and other transportation agencies on smart card/identity management projects.  Complete business case for adapting IDIM into ministry services.	Implement smart card/identity management partnerships with transportation agencies, if justified.  Implementation of ministry IDIM opportunities if justified.	SS BI
3.4	Regional Traffic Data Systems (RTDS) - utilize cellular GPS tracking data to provide citizens with real time access to traffic congestion information for trip planning, and to identify traffic patterns and speed profiles to support transportation planning.	Develop and implement a pilot system to use cellular data and GPS tracking to provide real time traffic speed profiles and congestion monitoring on the Metro Vancouver road system.	Identify congestion trends from RTDS data to identify potential infrastructure or technological improvements on road network.	Expand RTDS system to include other major urban centres, such as Victoria and Kelowna, depending on results of Metro Vancouver pilot testing.	BI
3.5	Establish a multi-agency, state-of-the-art Regional Traffic Management Centre (RTMC) in Metro Vancouver to centrally manage all intelligent traffic control systems in the Metro Vancouver area under one roof, provide a coordinated and integrated response to traffic incidents on the major road network, and coordinate major incident response and recovery plans.	Design and initiate construction of RTMC facility including traffic management software and fibre optic network.  Initiate agreements with municipalities for sharing of fiber systems and sharing of data and video information.	Complete construction, development, and testing for the traffic control systems and integration.  Relocate Provincial Highways Condition Centre to new facility.  Implement sharing of video and traffic data with some major partners, such as City of Vancouver, Port Metro Vancouver, TransLink, and emergency services centres.  Open the RTMC (fall 2013).	Implement additional sharing of data and video information with remaining agencies, such as Coquitlam, City of Surrey, and Richmond.	BI



STRATEGY	ACTIONS			LINKAGE TO 3 SHIFTS
	2012/13	2013/14	2014/15	
3.6 Engage the automobile industry to identify infrastructure requirements that will support the advancement of intelligent vehicle systems.	Along with industry and agency partners, develop Intelligent Car Strategy.	Continue to work with partners. This will include monitoring the findings of Field Operations Tests of Connected Vehicles in North America and considering the findings in policy development.	Where applicable infrastructure standards have been developed and accepted by industry, begin incorporating those elements in infrastructure design and construction.	CP BI
3.7 Implement Transportation ProjectsBC – a public facing web page showcasing transportation infrastructure in British Columbia.	Create a public facing web page which identifies transportation projects on a map of the province and provides project details.	Refine the application for improved functionality related to reporting.	Review the opportunity to expand the scope of ProjectsBC.	CP SS



# SUPPLEMENT A

## Open Data Initiative

### 1.1 Open Data Initiative

#### Introduction

The provincial government is opening up access to core government data by putting it online for the public to download and use. Citizens and groups can use this data to conduct research, analyze statistics, and develop applications and mashups (a web page that uses and combines data from multiple data sources). Our open data initiative is about a cultural shift and a different way of thinking about the information we handle. It's about viewing data as a strategic asset.

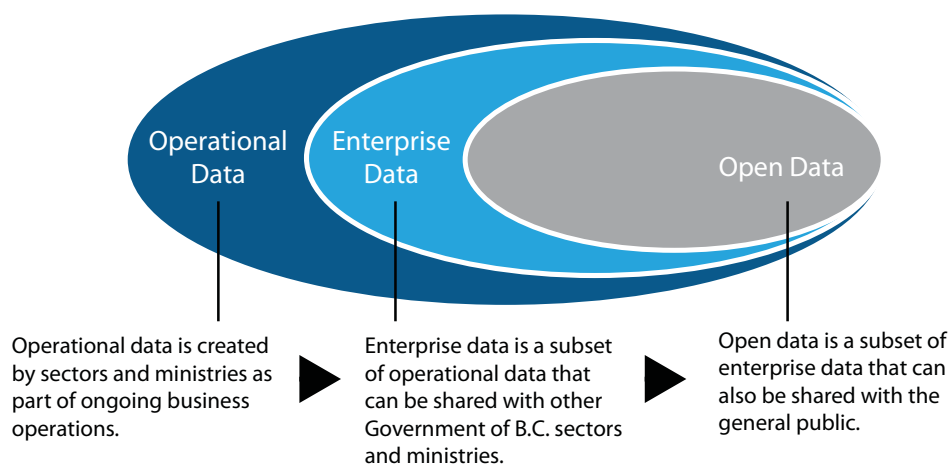
In 2010, we started publishing datasets on the [DataBC](#) web site, the one-stop catalogue of B.C. government data. Moving forward, we will continue releasing government data that will stimulate innovation, create service opportunities, and deepen public discussion. This continued focus helps keep government transparent and accountable. A commitment to open data also helps create a participatory environment in which British Columbians are engaged with their government and communities, and are better positioned to inform public policy.

This initiative is about transforming the way we collect, review, and share data to ensure we can regularly publish quality open data in a responsible way, building on the foundational work of the ministry's first [Transformation and Technology Plan](#) (T&T).

The ministry will adopt and apply the requirements introduced in the government's [Open Information and Open Data Policy](#) in order to proactively make datasets of value available on the [DataBC](#) website.

#### Summary of Ministry's Open Data Initiative

The ministry's Open Data initiative will create an inventory of all ministry data holdings and a framework for reviewing data for possible sharing, either as internal enterprise data (shared with other B.C. government sectors and ministries) or as open data. We will investigate other jurisdictions' datasets (such as [London, Utah](#) and [Australia](#)), and work across ministry business units to assess the quality of and demand for all our data. We will determine a standard way to judge the value of our data to the public and identify what is a priority and what is not. We will develop a risk assessment matrix to let us make informed data release decisions.





# SUPPLEMENT A

## Open Data Initiative

Approval processes will be set by the Ministry of Labour, Citizens' Services and Open Government (LCTZ) and implemented by our ministry. We will prepare data for public dissemination, consider the technical infrastructure around hosting, and implement automated updates to ensure data is current. Our initiative will address the cultural shift and understand how releasing data will improve our business and empower citizens.

engagement and the creation of opportunities where the public can take advantage of datasets to find efficiencies and create new public applications and data mash-ups.

### Activities

As part of its Open Data initiative, the ministry will:

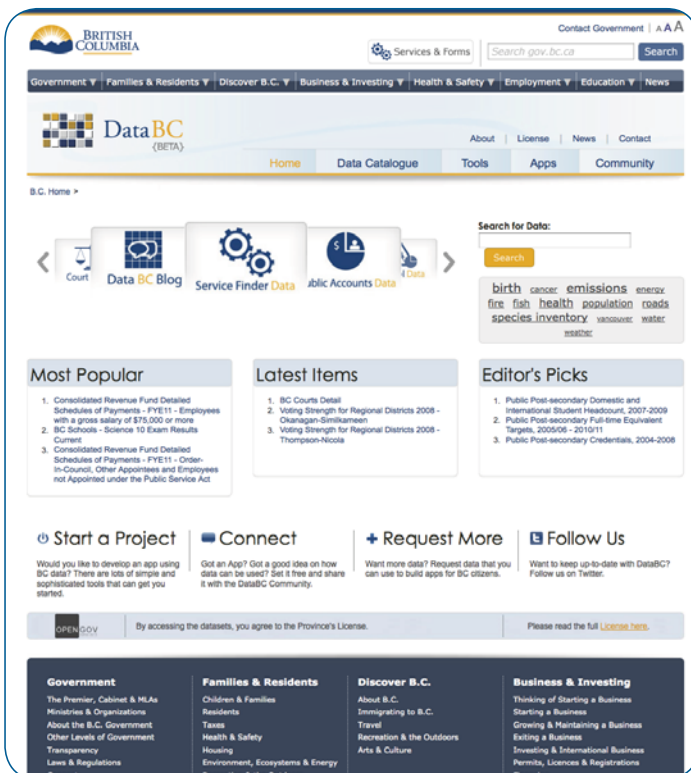
1. inventory and assess all ministry data holdings;
2. prioritize datasets using a ministry defined scorecard to measure value;
3. develop an open data process that includes a risk and approval matrix;
4. review datasets for inclusion in DataBC; and
5. confirm data hosting infrastructure.

### Implementation

The Ministry of Transportation and Infrastructure will develop an Open Data Service with governance, approval, and lifecycle management addressed. As the ministry's data continues to change and grow, we will design a process that includes assessing our data, collaborating with stakeholders, publishing and refreshing datasets, and measuring value so we are consistently improving our methodology and updating citizens.

### The Open Data Team

A team led by the Ministry Chief Information Officer will ensure ministry-wide leadership, planning, and execution are in place to achieve our open data goals. This team will work with the ministry's Transformation and Technology Advisory Group (TTAG) to ensure strategic direction and priorities are set at the corporate level. The team's mandate will be to implement a business enabled process that educates and supports key business areas. Each business area is responsible for its own datasets, and the Open Data team will canvass, educate, present, answer policy questions, and help coordinate efforts around the Open Data initiative, including the inventory of the ministry's



### Alignment to Strategic Shifts

Three strategic shifts were outlined in Citizens @ the Centre: BC Government 2.0 – citizen participation, self-service, and business innovation. The Open Data initiative is aligned to citizen participation.

Our data will be available through the [DataBC](#) web site, which is the one-stop catalogue that guides citizens to B.C. Government data. The benefits will include increased citizen

# SUPPLEMENT A

## Open Data Initiative

data holdings. This team will work closely and coordinate with ministry Open Information and Internet Strategy teams.

The Open Data team will oversee the following five activities that support the Open Data initiative:

### 1. Inventory and assess all ministry data holdings (ongoing process)

The Open Data team will work with all directors to build a ministry-wide inventory of data. They will identify what data we have, assess if it fits the criteria for being open, and determine if it is ready for inclusion in the DataBC catalogue or requires further work.

This examination of our data will also be an opportunity to create a new corporate data management culture in which data is collected and managed with the expectation of sharing with the public.

The Open Data team will educate and inform business areas about the shift to an open data culture and will clearly outline the areas' roles, deliverables, and timelines for the open data inventory.

Inventorying data is an ongoing process, and regular follow up with business areas and open data staff will take place to keep the full data inventory current and complete.

### 2. Prioritize datasets using a ministry defined scorecard to measure value

Once the initial Inventory of data is complete, the Open Data team will use feedback from ministry business leads to help determine which datasets should be considered first for release. The focus will be on increasing public engagement, strengthening program or policy initiatives, and being transparent and accountable.

The Ministry's Open Data team will supply business leads with a scorecard (see appendix A for sample) to measure the data's value to the public.



In prioritizing the datasets, the ministry will consider:

- projected public demand for the data, based in part on FOI requests and consultations with the public through social media input;
- the experience of other public bodies with transportation data holdings, such as [London](#), [Utah](#) and [Australia](#), and any public statistics available on their types of datasets and number of downloads;
- feedback on program priorities from ministry business leads;
- whether the data includes time and/or location information (which tends to increase its value to the public);
- whether the data is currently machine read-able and in a form the public can use;
- whether the data will require ongoing maintenance; and
- whether ministry business leads or Executive have any concerns about releasing the data.

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# Open Data Initiative

The ministry will carefully consider privacy, the possibility of liability, and potential harms and risks should the data be misinterpreted or misrepresented.

The Open Data team will aggregate their findings and review the results with TTAG and Executive to determine the overall ministry priorities and direction for release of Open Data.

Before any datasets are made publically available, they will be reviewed and approved by the Deputy Minister or a delegate.

The Open Data team will begin creating individual plans for the top priority datasets in January 2012.

### 3. Develop an open data process that includes a risk and approval matrix

An open data process must address approvals, hosting requirements, how to encourage and incorporate feedback from the public, and the updating and retirement of datasets.

The ministry will adopt and build upon the Ministry of Labour, Citizens' Services and Open Government's open data process.

All data collected by the ministry will need to be organized and reviewed for relevance. The ministry will need to address questions such as: What metadata (i.e. data about data) do we use to describe the data? How will the data be hosted? What data can be retired? How do business areas contribute new data as it is collected and created? Will published datasets be automatically refreshed? How do we respond to citizen feedback?

The ministry has a strong interest in automating the update cycle for the datasets currently published manually to simplify support and ensure the data we provide remains relevant.

The Open Data team will develop an approval process that incorporates risk assessment results, data classification, and ministry priorities. This process will outline any privacy concerns and be mapped to a

Risk and Approval Matrix that clearly defines the level of sign-off necessary for each dataset and identifies Deputy Minister delegates if appropriate. The risk and approval matrix will be developed in February 2012 and approved by TTAG. A preliminary approval process is included in Appendix B.

### 4. Review datasets for inclusion in DataBC

Building on the existing foundation work of the T&T, there are some well-known Transportation datasets that are also likely candidates for early release as open data.

Some examples are:

- **Corporate Highway and Resource Information System (CHRIS):** We have been an active participant in the creation of the BC Geographic Warehouse ([BCGW](#)). We will make this data available to the public as it is not currently available outside of government.
- **DriveBC datasets (including webcam images):** Currently DriveBC datasets are not publicly available due to existing license agreements. The ministry is working with Legal Services Branch and Intellectual Property Program to make this public safety data available through DataBC.
- **Weather datasets:** A weather station list and a link to the historical weather application are currently available via DataBC. These weather datasets will be processed further so they can be published in the required open format, along with current weather data.
- **Current publicly available data:** Our ministry is already actively sharing information with the public through social media, ministry web sites, and public applications. These datasets will be reviewed and catalogued via DataBC to ensure one-stop access to all our data.

We will also continue to ensure citizen collaboration by providing opportunities for the public to comment and suggest data they would find useful. The ministry's



# SUPPLEMENT A

## Open Data Initiative

social media offerings will provide channels for feedback that can augment those provided by DataBC. Feedback obtained from all sources will be fed back into our process for review, so that ministry dataset contacts can respond accordingly. The ministry may also wish to engage the public in discussion and understand how their innovations may serve areas identified as priorities by government.

### 5. Confirm data hosting infrastructure

Our Ministry Information Management Branch will ensure there is a data warehouse in place to host our shared datasets. The infrastructure will need to be robust and scalable to enable large numbers of datasets to be published and be accessible by a large number of users. This solution will also need to allow the internal sharing of enterprise data within and across ministries, as well as the sharing of open data with citizens.

### Summary of Timelines

Timing	Objective	Overview of Activity
Phase 1: READY		
Year 1	Inventory Data	<ul style="list-style-type: none"> <li>• Meetings with business areas to review submitted inventories</li> <li>• Meetings with business areas with inventories needing to be completed</li> </ul>
Phase 2: SET		
Year 1	Focus on Priority Data Sets	<ul style="list-style-type: none"> <li>• Consolidate and assess initial inventories based on business input. Identify candidates for early release and top priorities for Executive review</li> <li>• Develop Value Scorecard to apply to open data Inventory (to be approved by TTAG)</li> <li>• Develop a Risk and Approval Matrix (to be approved by TTAG)</li> <li>• DriveBC – license analysis (next steps)</li> </ul>
Phase 3: GO		
Year 1-2	Contribute to DataBC	<ul style="list-style-type: none"> <li>• Review and assess open data inventory for ministry. Set top priorities and create the 2012 open data plan for ministry</li> <li>• Create individual plans for each top priority item</li> <li>• DriveBC open data assessment</li> <li>• *Publish traffic data via DataBC (after processing data , assessments, and approval have been completed)</li> <li>• *Publish weather datasets via DataBC (after processing data, assessments, and approval have been completed)</li> </ul>
Phase 4: KEEP GOING		
Year 1-3	Support culture shift	<ul style="list-style-type: none"> <li>• Continue to inventory data</li> <li>• Continue to publish data to DataBC</li> </ul>

\* Previously identified as a priority.

# SUPPLEMENT A

## Open Data Initiative

### Budget

#### Description

The Open Data Service Offering will include existing staff from the ministry's Information Management Branch, directors representing business areas, data custodians, subject matter experts, and Executive.

#### Appendix A – Value Scorecard

The following framework has been supplied by the Labour, Citizens' Services and Open Government Team.

#### Accountability Framework

- Volume
  - Number of datasets
- Usability
  - Close to source
  - Well structured
  - Machine-readable
- Value
  - Time-series
  - Geographically reference
- Uptake
  - Ratings by community
  - Downloads
  - Conversions

We know that value improves for developers, researchers, and students when data is time-series and location based. The focuses of the initial collection of data for the inventory will involve:

- Looking for data sets that add value, not just volume.
- Can the data posted be re-used?
- Is the business really prepared to share the data?
- When looking at sharing data – ask the question "Is there any reason we can't release the data?"

- Discuss with the business unit how sharing this information will help their business.
- Determine what data is a priority and what is not.
- Ensure inventory includes all data currently being shared with the public to ensure we align to policy.

As we evolve in this process, the goal will be to accommodate our business processes to collect data at the source in the desirable format with the intention of sharing with the public. This will reduce the amount of time it takes to make data open, reducing the amount of time of preparing the data in the open data format. Citizen feedback and comments regarding all published datasets should also be reviewed and adjustments made accordingly on a regular basis.

The Open Data Team will use this information and feedback from the business areas to develop a Value Scorecard that will be applied to the Open Data Inventory. This scorecard will be approved by the Ministry's Transformation and Technology Advisory Group (TTAG) in December 2011.

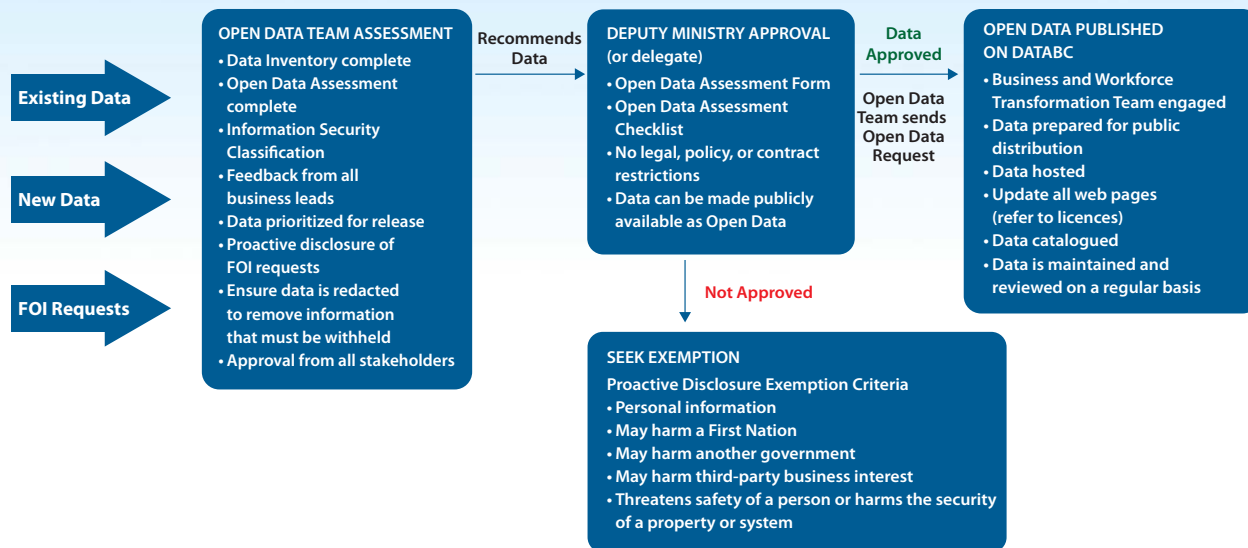
#### Sample Value Scorecard

The following categories are being considered and will be appended to the Open Data inventory template. These values and scores will be discussed with the business leads when reviewing their initial completed Open Data Inventories.

High Candidate Data Set	Difficulty E/M/C	Size S/M/L	Value L/M/H	Comments
Transportation Permitting System	Complex	Large	High	
Comm. Trans. T forms / Circulars / Notices	Medium	Small	High	Information, i.e. pdfs rather than dataset

# SUPPLEMENT A

## Open Data Initiative



The metrics and definitions for each category will need to be clearly defined to ensure consistent guidelines are being used when assigning ratings:

- **Difficulty** – how difficult will it be to convert this data set into the open data format and prepare it to be hosted in the data warehouse. Is the dataset already in an electronic format? Is the format machine readable? Will we be publishing static or dynamic datasets? This rating will reflect the amount of analysis and manipulation involved for each dataset.
- **Size** – how large is the dataset? CVSE might consider a dataset containing 60,000 inspection results to be “large” while an Engineering dataset might consider that “small.” We will work with the DataBC Advisory Group on these guidelines.
- **Value** – what is the perceived value to the public? The discussion with the business areas will be focused on this topic.

### Appendix B – Approval Process

Taking into account the mandatory approvals defined in the Open Data Policy, the following preliminary process

has been defined. The Open Data team will work with the Labour, Citizens’ Services and Open Government team to define a ministry-specific Open Data Process that includes clearly defined approvals (based on risk assessments).

The Open Data team will use this information to develop and publish a Risk and Approval Matrix. This will be approved by the ministry’s Transformation and Technology Advisory Group (TTAG) in February 2012.

Action items out of this process will also include:

- Ensuring all data in the ministry is classified using the [Information Security Classification Framework](#).
- Update all outside facing web pages with open data to clearly and expressively state what records are open data and that any open data is subject to the terms of the [Open Government Licence](#).
- Stop publishing all open data that does not meet policy.
- Review and update the open data catalogue, ensuring all existing web pages containing open data are available through [DataBC](#).



# SUPPLEMENT B

## Open Information Initiative

### 1.6 Open Information Initiative

#### Introduction

The B.C. government's commitment to open information ensures that ministries will now routinely publish records online rather than waiting for specific requests.

This shift will provide information that is timely and straightforward, create greater openness and accountability, and prepare the way for participation and collaboration with citizens.

After an initial canvass of Business Units and a review of all Freedom of Information (FOI) requests, staff have begun the process of identifying specific records that can be disseminated to the public without breaching FOI legislation, copyright or other legal responsibilities, or

jeopardizing operational or security considerations. Like all other branches of government, the ministry is proactively releasing current FOI requests to the public through the [Open Information portal](#).

#### Summary of the Ministry's Open Information Initiative

The ministry creates a substantial amount of information that is released. However, the records currently made available to the public represent a small portion of the total records created by the ministry.

Our processes will ensure we achieve the objectives outlined in Open Government section of the plan while respecting all privacy, security, copyright, legal, and contractual obligations.

The goal of this initiative is to provide information that is of value to the public. This process begins with the creation of a comprehensive list of records that comply with the government's [Open Information and Open Data Policy](#) and have high public value. This will be followed by a public consultation process to encourage dialogue and solicit feedback as to what, of our identified records, the public would like to see. Public consultation will provide the ministry with feedback to help prioritize the records in the order of highest value for citizens. The ministry will review the records to determine which ones should be included on the Open Information web site.

The screenshot shows the 'Open Information' page of the British Columbia government website. At the top, there's a navigation bar with links like 'Government', 'Families & Residents', 'Discover B.C.', 'Business & Investing', 'Health & Safety', 'Employment', 'Education', and 'News'. Below this, the 'Open Information' section is highlighted. A large banner image of a government building is accompanied by a 'Find Information Releases' button. To the left, a 'For Your Information' section lists various government facts and figures. To the right, a 'Travel Expenses' table is displayed, listing the names of various ministers and their respective expenses. The table has columns for 'Minister', 'Deputy Minister', and 'Ministry'. The bottom of the page features a footer with links to 'Government', 'Families & Residents', 'Discover B.C.', and 'Business & Investing'.

# SUPPLEMENT B

## Open Information Initiative

### Alignment to Strategic Shifts

The Open Information initiative aligns with each of the three strategic shifts outlined in [Citizens @ the Centre: B.C. Government 2.0](#).

As this initiative aims to increase the volume and quality of the information released by the ministry, it encourages citizen participation by improving access to government data and sharing of information.

The initiative is related to the strategic shifts of self-service and business innovation. The deliverables will lay the groundwork for improved online services and simplified searches. They will make it easier for government to build a one-stop portal for information, which would save citizens the inconvenience of searching through different web sites and databases.

The goal of this project is to use technology to routinely disseminate useful information to the public so that citizens can be innovative, inform public policy, and fully participate in the emerging data culture.

### Activities

The objective of the Open Information initiative is to define and make available online records, such as environmental reports, that are of value to the public.

Working with the Transformation and Technology Advisory Group (TTAG) we will ensure that the ministry process for achieving the Open Information goals are met. We will identify and review records, prioritize and release records to the [Open Information](#) web site, educate, and coordinate efforts.

### 1. Implementation – Review of Records

- clearly describe the type of data to be released that includes its value for citizens;
- prioritize the information based on public feedback, value, and dissemination difficulty;
- complete the Open Data [assessment checklist](#);
- develop a schedule for release of information;
- determine the risks:
  - o develop a risk matrix to ensure all records are properly vetted;
  - o ensure records do not violate legal, security, or copyright implications;
  - o examine selected records to determine they comply with the *Freedom of Information and Protection of Privacy Act* (FOIPPA).
- determine the Internet location of our open information;
- develop a mechanism for ensuring the data is updated on a regular basis;
- develop a mechanism for ensuring stale data is deleted on a timely basis;
- develop a mechanism to ensure information is assessed for FOIPPA, legal, licensing and contractual obligations prior to release;
- consider technology concerns (format etc.)

We will work closely with the Information Access Office when submitting records for publication to the [Open Information web site](#). We will develop a system that ensures the public can efficiently search for our online records, and ensure the records are organized in a logical and systematic way.

### 2. Approval

We will develop a process that addresses the Open Information and Open Data policy. A Risk and Approval Matrix will be implemented.

## SUPPLEMENT B

# Open Information Initiative

### 3. Next Steps

The Open Information initiative will require the ministry to review, investigate, and develop processes for:

- ongoing review of published information;
- ongoing review of ministry category types;
- a process to categorize newly created information, records, forms, etc., as either acceptable for immediate release (e.g. weather information report) or not;
- determine the scope of disclosure; for example, should records be released only moving forward or should historical records be included as well; and
- determine the processes for future records classification so they are easily identifiable as routinely and proactively releasable.

### 4. Timelines and Objectives

Timing	Objective	Overview of Activity
Phase 1: READY		
Year 1	Identify records for proactive and routine release	<ul style="list-style-type: none"> <li>• Examine past Freedom of Information requests</li> <li>• Consult with business units</li> <li>• Consult with the Information Access Office (IAO)</li> <li>• Survey similar open data/information</li> <li>• Compile information and create a list</li> <li>• Consult with the Transformation and Technology Advisory Group</li> </ul>
Phase 2: SET		
Year 1	Consult with the public	<ul style="list-style-type: none"> <li>• Meet with representatives from the Social Media Branch and devise a method by which public input can be sought</li> <li>• Develop the proposed method, e.g. poll, questionnaire, survey</li> <li>• Seek public consultation</li> <li>• Review and compile the results, adjusting the list of record types if required</li> </ul>
Phase 3: GO		
Year 1	With approval, begin releasing records identified	<ul style="list-style-type: none"> <li>• Present Executive the finalized list of proposed record types</li> <li>• Implement proactive and routine release of the proposed record types</li> </ul>
Phase 4: KEEP GOING		
Year 2-3	Develop a records creation process that incorporates proactive disclosure and routine release	<ul style="list-style-type: none"> <li>• Consult with business units regarding document creation</li> <li>• Create guidelines for creating documents to facilitate easy and fast dissemination of new records</li> <li>• Begin looking at a records classification system so that records can be automatically slotted into either routine/proactive release</li> </ul>

### Budget

The Open Information initiative will be implemented by staff from the Information Management Branch, directors representing business areas, and information custodians.



# SUPPLEMENT C

## Internet Strategy

### 1.7 Internet Strategy

#### Introduction

In July 2011, the B.C. government released a dramatic redesign of the [provincial government home page](#) focusing on the usability experience for the citizen. The goal of the redesign was to get citizens to the services they want as quickly and easily as possible.

The new design incorporates significant usability improvements based on extensive user experience testing and research. The improvements follow the award-winning design principles used by the governments of California and Utah.

The provincial government home page uses best practices to govern the creation of new content and categorizes content for easy “search and find.” Key services, such as DriveBC, are listed in a graphic and animated carousel, while other services are categorized carefully to ensure they are easily found. Citizen feedback has been positive about the changes.

TRAN's Internet Strategy embraces the strategic shift presented by B.C. Government's Citizens @ the Centre by moving from an online service presence defined by organizational structure to a more citizen and user-centric model.

Citizens and industry are on the move, and TRAN is intent on helping them re-discover the online resources, services, and information that help make mobility in B.C. safe, easy, and productive.

#### The Value in our Internet Site: Good Content

Good content is a business asset – it makes our roads safer, facilitates industry, and informs communities. Over the last decade, our professional engineers, technicians, and transportation stakeholders who manage B.C.'s

transportation systems have contributed a library of good content that defines our Internet presence as a “go-to resource” for authoritative transportation-related information and services.

The recent addition of social media tools and the TranBC blog to our ministry's web presence has added a friendly, engaging voice to our transportation activities. TranBC has also introduced new technology to our web presence, a WordPress blogging platform, for presenting and managing stories. Meanwhile, DriveBC continues to be one of the Province's most popular and informative sites, reinforcing its presence with a mobile-friendly version of DriveBC and leading the ministry into the new world of mobile-friendly apps. In the past year, dedicated emergency response web sites, built within a few hours of severe avalanches and flooding, have been instrumental in helping regional emergency responders get vital information out to local communities and the media quickly and accurately.

The content is there -- our strategy into the future will be to leverage it through a wider government presence, thereby making it easier for citizens to find and to use.

#### Summary of the Ministry's Internet Strategy

The ministry will also develop a new governance model to administer the policy and guidelines around the creation and maintenance of online content to ensure we are providing the public with current and useful information.

TRAN will inventory and evaluate all its current web properties and content. We will identify our most popular and business critical services and information pages, as well as the audiences who use them, and ensure they are easily accessible from the B.C. government and TRAN home pages.

## SUPPLEMENT C

# Internet Strategy

To make all TRAN pages findable from the government home page, we will use their citizen-centric taxonomy strategy to categorize our content, and we will optimize searches by ensuring web properties are tagged to government standards. Standards and guidelines for the taxonomy will be set by both TRAN and the Ministry of Labour, Citizens' Services and Open Government and implemented at the ministry level. Metrics will be used to monitor the effectiveness of services and web pages.

### Activities

We will make services and information easy to find while improving our user's experience.

The Internet strategy includes the following activities:

#### 1. Inventory and evaluate the ministry's web properties and services

The ministry is currently taking stock of all ministry web properties to determine:

- the number of ministry web properties;
- each web property's category (see sidebar);
- each web property's audience;
- the business purpose of each property;
- the business owner and content stewards of each property;
- frequency of updates; and
- metrics (usage statistics).

We have identified over 150 separate web properties, representing hundreds of pages and thousands of linked documents.

Once inventoried, we will evaluate and prioritize the most business-critical sites and services, then ensure they are easily located from the government and ministry homepages.

The ministry will formalize its reporting on metrics to determine priorities and placement of services within the government taxonomy, and also to monitor the effectiveness of a page or service.

#### 2. Find out who our visitors are and what services they want.

Transportation is multi-modal – are we providing multi-modal services? Are the citizen groups who visit our site regular motorists? Tourists? Contractors? Commercial drivers? Students? Business owners? To help identify future content and services, we will examine how we can employ social engagement tools and techniques such as page ratings, surveys, questionnaires, and focus groups to help determine precisely who our visitor groups are and what future content and services they may need.

Ministry web properties fall into the following main categories:

- **Services/Applications.** Sites that provide a specific service or provide data or information on request. Examples include: DriveBC, BC HighwayCams, TRADAS, Distance Calculator, and eRISP.
- **Informational.** Sites that describe a program, project, business area, or initiative.
- **Forms.** Documents for the public to download and complete. Forms are conveniently centralized in a database.
- **Publications.** Downloadable reports, pamphlets, and guides. Publications are not centralized, but are grouped with the relevant business area.
- **Emergency/Advisory.** Temporary sites built as needed to supplement DriveBC with emergency routing information, media updates, photos, and video.

## SUPPLEMENT C

# Internet Strategy



### Designing for Mobile – Why?

We are living in a mobile age. British Columbians are increasingly turning to mobile devices first to get the messages, news, and services they need. In some communities, our citizens are getting access to high speed mobile connections before traditional broadband Internet. Soon, it seems likely that the government's first contact with any citizen will be through their cell phone or other mobile device rather than a traditional web site or other media.

This change in perspective is going to require an information delivery strategy that not only considers mobile platforms, but considers them first.

This means that the future of our Internet will involve designing sites and apps that are easy to access on all mobile devices. This will be an increasing challenge in the future, given that there are already 400 different platforms, but the ministry is committed to keeping up with the needs of British Columbians and the way they prefer to connect with their government.

### 3. Apply metrics to monitor site effectiveness

A site that generates high visitation numbers may not necessarily be a more important site than one with lower numbers. Good metrics can help identify how many visitors a site has, and how long they are staying, and can help determine if they found what they were looking for. Good metrics can determine if the site is effective for users. Labour, Citizens' Services and Open Government will rely on information and advice from our ministry business owners and Internet teams to prioritize sites and monitor their effectiveness.

### 4. Make our web properties easier to find

The ministry's Internet team will work with Labour, Citizens' Services and Open Government to assess each property and determine how it will most easily be found by citizens.

With input from our ministry, Labour, Citizens' Services and Open Government will adopt best practice Search Engine Optimization (SEO) methods and apply metadata and taxonomy strategies to categorize our properties on the government and ministry home pages.

We will create metadata for our web properties that will aid in searches. Additionally, we will categorize our web properties using a categorization system that incorporates a taxonomy standardized by Government with one standardized for the transportation industry.

### 5. Develop an Internet governance model to administer policies and guidelines for content creation and ongoing site maintenance

Our content and services are business assets, and we must continue to ensure they are relevant to citizens and meet our business needs. Is our content useful, useable, purposeful, productive, and can citizens find it easily? Is there a process for removing old content?

The initial inventory and follow up analysis above will help answer these questions about our existing content.



## SUPPLEMENT C

# Internet Strategy

However, to provide current and useful information in the long term, the ministry will also create an Internet governance model that will manage our web property and content strategy well into the future. The goal of governance will be to guide the improvement of the general user experience on our sites while meeting the goals and objectives set out by the B.C. Government. Our governance model will consist of two teams:

1. Senior Web Advisory Team. This team will develop policy and guidelines for the ministry's web presence.
2. Transformation and Technology Advisory Group (TTAG). This group will act as an advisory council for achieving goals of the internet strategy. TTAG will advise the Senior Web Advisory Team on policies, guidelines, and content as representatives of the ministry's business areas.

Teams will meet on a regular basis to discuss issues and develop improved guidelines for the lifecycle of online content.

Policies and guidelines will also address the content on the ministry's social media platforms, such as TranBC, Twitter, Facebook, Flickr and YouTube to ensure the content there is fresh and valuable.

#### 6. Adopt government-wide "look and feel"

Labour, Citizens' Services and Open Government will be providing guidelines and standards describing a new look and feel for ministry web

sites. The ministry expects to follow these standards to maintain a consistent corporate aesthetic. Each micro-site will be reviewed individually. Business critical web pages will be migrated to the new look and feel first. The balance of content will be migrated to the new look and feel as it is revised or updated.

### TranBC

TranBC is an informational blog-formatted web site, introducing citizens to our operations and new initiatives using plain language and an engaging style. It is a complement to the main ministry site, which generally focuses on the interests of transportation stakeholders and uses more industry-specific terminology. Leading with new technology to our ministry, TranBC is built on a WordPress platform, which opens exciting alternatives for presenting information traditionally posted on standard web pages. For instance, authorized contributors from remote locations may now perform their own web updates at any time, without funnelling update requests through a single web author. This streamlines the traditional web publishing process, providing timely and accurate information.



# SUPPLEMENT C

## Internet Strategy

### Implementation

Timing	Objective	Overview of Activity
Phase 1: READY		
Year 1	Inventory and evaluate the ministry's web properties and services	<ul style="list-style-type: none"> <li>Complete Internet strategy spreadsheet</li> <li>Evaluate/prioritize the 150 subsites by importance to citizens</li> </ul>
Year 1	Develop an Internet governance model to administer policies and guidelines for content creation and ongoing site maintenance	<ul style="list-style-type: none"> <li>Implement a senior web advisory council</li> <li>Incorporate TAGG as a web advisory council</li> <li>Set up regular meetings with each team</li> <li>Develop Internet policy and guidelines for content lifecycle</li> </ul>
Year 1	Identify our visitors and what they want	<ul style="list-style-type: none"> <li>Survey citizens and industry to determine what they want</li> <li>Identify typical search terms</li> <li>Use focus groups to test findability and user experience</li> </ul>
Year 1	Apply metrics to monitor site effectiveness	<ul style="list-style-type: none"> <li>Evaluate current metrics for usefulness</li> <li>Evaluate government metrics offering and cost</li> <li>Create regular reports for monitoring usage and effectiveness of sites</li> </ul>
Phase 2: SET		
Year 1	Make our properties easier to find	<ul style="list-style-type: none"> <li>Work with LCTZ to develop a tagging and taxonomy strategy for TRAN</li> <li>Review transportation-related industry taxonomies</li> <li>Where possible, incorporate TRAN's taxonomy into Province's</li> <li>Begin conversion of priority web pages and services over to new look and feel</li> </ul>
Phase 3: GO		
Year 2	Adopt government-wide look and feel to all standard ministry Internet properties	<ul style="list-style-type: none"> <li>Apply government templates to maintain a consistent corporate aesthetic</li> <li>Continue conversion of all web pages over to new look and feel</li> </ul>
Year 3	Continue governance of the ministry's Internet presence  Apply content strategy to all new properties	<ul style="list-style-type: none"> <li>Continue to inventory and evaluate all web properties to ensure their relevance is maintained</li> <li>Continue to ensure all new content follows policy and guidelines</li> <li>Continue to refine our Internet strategy as technology/usage changes</li> <li>Continue conversion of all web pages over to new look and feel</li> </ul>

### Budget

Implementation of initial activities will be managed within existing operation budgets, although as part of the process we will be assessing operating or capital funding requirements.

### Risks and Mitigations

As we are still in the early stages of planning, specific risks have not yet been identified. However, some general areas we are reviewing for potential issues include:

- Staffing: Applying a new content strategy, converting to the new look and feel of the 150+ sites, and providing taxonomy/tagging for each property will be labour-intensive and may require a review of staffing requirements.

# SUPPLEMENT D

## Leading Workplace Strategies

### Leading Workplace Strategies

#### Introduction

Leading Workplace Strategies (LWS) is a key component of implementing the Transformation and Technology (T&T) planning process currently underway across government.

The corporate definition of LWS is “the alignment of our work environment with our work patterns to support employee productivity and organizational agility to optimize our capital investments and operating expenditures.”

In short, LWS means ensuring employees have the right tools *and the right space* for the right job.

When talking about LWS, we are referring to a cultural shift that is already underway across the public service and around the world – a shift towards greater mobility and

flexibility in our work environment. This is an evolution that can be traced back to emerging technologies – the cell phone, the laptop, the smartphone – that have given people greater freedom in how and where they work. In fact, more and more, work is no longer “a place to go.” With today’s tools, people can (and do) work anywhere.

#### What LWS means for us

Over the next three years, TRAN will continue exploring and implementing this evolution towards a more flexible, mobile work environment. In fact, in our ministry, we already see that working flexibly can also mean working remotely, without traditional offices or cubicles. For example:

- Over 100 Provincial Field Services employees are mobile and move their office trailers to the project sites, using Virtual Private Networking to connect to the government network to access programs essential to monitoring progress on our infrastructure projects.
- Over 190 Commercial Vehicle and Safety Enforcement employees work from weigh scales where they may be assigned a locker, or have their vehicles equipped with tablets and perform the majority of their work on the road, dropping into a district office when they need access to conventional office equipment.
- Video conferencing and teleconferencing equipment, along with programs and Internet solutions such as Microsoft LiveMeeting and Skype, are widely used by our employees for meetings, virtual conferences, training sessions, and interviews. These technologies allow our employees to remain connected no matter where they may be physically located.



**“Work is what you do,  
not a place you go.”**

*Sir Gus O'Donnell,  
Head of the Home Civil Service (UK)*



## SUPPLEMENT D

# Leading Workplace Strategies

Currently, about a third of the workforce has at least one dedicated mobile device (see table below):

Type	Number	% of Workforce
Portable computers	721	52%
Blackberries	463	33%
Other mobile phones	659	47%
Cell modems (Connects a laptop to the Internet without needing Wi-Fi or landline/Ethernet connection)	225	16%

With our ministry's headcount projected to remain stable at around 1,400 employees over the next 10 years, we anticipate that the flexible and mobile work environment envisioned in LWS will help us attract and retain the talented employees we need to meet our operational needs.

At the same time, through LWS it would be possible to reduce the amount of space required to accommodate the same number of employees – for example, by providing a mix of shared workspaces, such as drop-in stations, team worktables, and informal meeting rooms. This will enable some of our employees to forgo a dedicated cubicle or office, while continuing to meet the ministry's operational needs.

In addition, we currently share buildings with other public sector organizations throughout the province and will continue to look for other opportunities to do so. The ministry has approximately 75 employees working in 23 locations with leases that need to be renegotiated before the end of 2013/14. This represents an opportunity to determine whether our space needs could be met in a different way.

To support our ministry's transformation and business goals, LWS can enhance employee engagement, collaboration, and innovation in the workplace – particularly in groups that are currently working in traditional ways. With its focus on individual work styles and preferences, LWS also aligns with the BC Public Service's growing focus on inclusiveness, which aims to leverage each employee's unique strengths.

### Summary of the Ministry's Leading Workplace Strategies

Our objective is to create an environment that will allow for greater employee flexibility and mobility in meeting the needs of the people we serve. We plan to accomplish this by working together to identify work styles and the enabling physical supports required, and facilitating any needed organizational culture shifts.

Over the next three years, we will explore flexible and mobile workspaces across the ministry. Where appropriate, we will work with individual work units to implement options which may include:

- **non-territorial space** (e.g. hot desks, hot offices, quiet space/areas, hub/resource areas);
- **team space** (e.g. team tables, project spaces, informal breakout spaces); and
- **telework.**

An evaluation of cultural readiness will be conducted as part of the change management strategy, but we already know that there are many positive aspects to the current culture that we don't want to lose. For example, it's critical that we maintain our existing sense of community in a world where we don't all necessarily work in the office every day.

## SUPPLEMENT D

# Leading Workplace Strategies

### Alignment to Strategic Shifts

LWS is leading us towards the culture shift envisioned in *Being the Best* – a work environment where a productive, flexible, and mobile workforce is trusted and supported to deliver better services to the public. For example:

- *Being the Best* calls for the BC Public Service to be more open with fewer silos. By removing physical barriers to communication within and between teams, LWS encourages greater interaction, collaboration, and learning among employees.
- *Being the Best* recognizes the need for the public service to be more competitive as an employer. By offering a flexible work environment, our ministry will be better able to attract and retain employees. According to the BC Public Service Exit Survey, 10 per cent of employees who resigned in 2009/10 stated that their departure could have been prevented by better/more flexible work options.

- LWS complements the ministry's commitment to a greener transportation sector. For example, if more employees take advantage of telework options, there are fewer employees commuting to an office daily, reducing emissions.

In addition, the ministry's first *Transformation and Technology Plan* notes that employee resource requirements will need to shift from typical phone, office, email, and mail interactions to more mobile and web-based interactions. A flexible, mobile work environment supports this changing use of space and technology.

### Activities

In order to create an environment that will allow for greater employee flexibility and mobility, we will implement a comprehensive change management strategy that will:

- communicate a clear vision of how flexible work aligns with our business, organizational, and work environment goals;
- establish change management communities to ensure grassroots involvement rather than a top-down approach;
- initiate extensive change management and communication strategies early in the process; and
- identify pilot programs and provide the necessary infrastructure and support as well as clear methods for evaluating success and incorporating identified improvements.

We have outlined the steps required in greater detail along with the planned timeline in the following section.



# SUPPLEMENT D

## Leading Workplace Strategies

### Implementation

Timing	Objective	Overview of Activity
Phase 1: READY		
Year 1	Ensure we have a SMART (specific, measurable, accountable, relevant, and time bound) plan	<ul style="list-style-type: none"> <li>Establish LWS working group with membership from all levels and regions of the organization with executive sponsorship</li> <li>Establish vision and key objectives</li> <li>Perform best practices research including site visits</li> <li>Establish required IT strategy</li> <li>Conduct stakeholder analysis</li> <li>Define change and communications plans</li> <li>Develop metrics to measure success</li> </ul>
Phase 2: SET		
Year 1	Assess employee change readiness	<ul style="list-style-type: none"> <li>Determine employee work-styles, cultural readiness, operational impact, and unique business needs through the following activities:               <ol style="list-style-type: none"> <li>Administer change readiness (work-styles) survey</li> <li>Consult with employees at all levels of the organization (including specific groups – executive, senior managers, supervisors, etc.</li> <li>Facilitate discussions at the work unit level</li> <li>Review physical space and storage needs</li> </ol> </li> </ul>
Year 1 and ongoing	Support supervisors and build capacity for managing a flexible/mobile workforce	<ul style="list-style-type: none"> <li>Building on the corporate supervisory initiatives:               <ol style="list-style-type: none"> <li>Integrate LWS into the ministry's supervisor strategy</li> <li>Offer training and additional resources to supervisors in modelling LWS implementation and in managing a mobile/flexible team</li> </ol> </li> </ul>
Year 1 and ongoing	Ensure employees understand the vision  Create appetite for change while managing expectations	<ul style="list-style-type: none"> <li>Identify LWS champions at all levels of the organization to support communications and change management – for example:               <ol style="list-style-type: none"> <li>Facilitating discussions at work unit level</li> <li>Hosting workshops and conducting focus groups</li> </ol> </li> <li>Promote LWS via intranet and employee newsletter (e.g. showcase examples of TRAN employees already working flexibly, profile work units piloting LWS)</li> </ul>
Year 1 and ongoing	Engage employees in planning and designing change	<ul style="list-style-type: none"> <li>Select appropriate work units to design and pilot change</li> <li>Engage employees in developing team charters for working in shared space</li> </ul>

## SUPPLEMENT D

# Leading Workplace Strategies

Timing	Objective	Overview of Activity
Phase 3: GO		
Year 1 and ongoing	Support the culture shift	<ul style="list-style-type: none"> <li>• Implement IT strategy that sets out options to explore the allocation, sharing, and use of tools</li> <li>• Use corporate policies and guidelines to develop new protocols and etiquette for sharing space in a new way</li> <li>• Create a stronger online community by: <ul style="list-style-type: none"> <li>o Redeveloping the intranet to better support a mobile, flexible workforce</li> <li>o Enabling document and knowledge sharing</li> <li>o Compiling key tools and resources for enabling mobile work</li> <li>o Utilizing existing social media tools</li> </ul> </li> <li>• Support transitions to LWS space. This may include: <ul style="list-style-type: none"> <li>o Transition readiness checklist</li> <li>o Arrival support and activities</li> <li>o Opening event</li> </ul> </li> <li>• Ensure ongoing dialogue regarding impact of LWS with opportunities to capitalize on lessons learned</li> </ul>
Phase 4: KEEP GOING		
Year 1 and ongoing	Support culture change	<ul style="list-style-type: none"> <li>• Monitor metrics of success identified in Year 1 and resolve emerging issues/risks as needed</li> <li>• Evaluate success of pilots and continue to learn from successes and challenges. This may be done through: <ul style="list-style-type: none"> <li>o Post occupancy review</li> <li>o Interim checks</li> <li>o Informal observations and feedback processes</li> </ul> </li> <li>• Continue dialogue with employees regarding LWS</li> <li>• Refine internal protocols, policies, and best practices based on feedback from all channels</li> <li>• Conduct program review at end of year 3 to determine need for ongoing support</li> </ul>



## SUPPLEMENT D

# Leading Workplace Strategies

### Budget

The activities identified in the plan to assess cultural readiness and employee work styles will be managed within existing operating funding. Implementation of work unit pilots will be managed within existing operating funding, although capital funds may be required to provide enabling technologies. We are planning our first advance pilot in the fall/winter of 2011/12, and as part of this process we will be assessing capital requirements.

### Risks and Mitigations

As we are still in the early stages of planning, specific risks have not yet been identified. However, some general areas we are reviewing for potential issues include:

- occupational health and safety for teleworkers;
- capital funding for new tools (e.g. mobile devices);
- performance management; and
- impact on service delivery.

Specific risks will be identified and mitigated as part of the implementation process in consultation with the appropriate stakeholders. In addition, the project team will monitor the metrics of success identified in Year 1 and take action on emerging risks as needed.

# SUPPLEMENT E

## IM/IT Application Health Check

### Transformation and Technology Plan – IM/IT Application Health Check

As part of the 2011/12 Transformation and Technology Plan, the ministry has compiled information for its applications into the IM/IT Application Health Check tool. The Health Check captures information related to business value, technical condition, risk, upgrade drivers, application attributes, and financial details. The information is used to calculate business value versus technical condition, which is plotted on a graph in one of four quadrants:

- Retire/Consolidate (low business value, low technical condition);
- Re-evaluate/Reposition (low business value, high technical condition);
- Re-engineer/Modernize (high business value, low technical condition); and
- Maintain/Evolve (high business value, high technical condition).

The IM/IT Application Health Check is a tool used across government that provides the Ministry of Finance and the Government Chief Information Office with an assessment of business value versus technical condition for all government applications. The Health Check also provides the ministry with a tool to evaluate its applications and to develop strategies to manage its IM/IT investments. This will enable the ministry to develop a plan for applications that are not aligned to the business, have some technical concerns, or should be retired or consolidated.

The ministry has 72 applications in its IM/IT application inventory. These applications fall into four general service categories which reflect the major mandates of the ministry:

- improving highway safety;
- maintaining and protecting highway infrastructure;
- providing customer service; and
- licensing and registration.

The results from the Health Check support the ministry's ongoing analysis and review of its applications and indicate that:

- 14 applications should be retired/consolidated as they have low business value and a low technical condition;
- 4 applications should be re-evaluated/repositioned as they have low business value and a high technical condition;
- 9 applications should be re-engineered/modernized as they have high business value and a low technical condition; and
- 45 applications should be maintained/evolved as they have high business value and high technical condition.

The ministry's application inventory is in a good condition. Almost two thirds (62%) provide good business value and are in good technical condition. The current IT capital program will replace several of the applications that are not in a good technical condition. Ongoing maintenance and minor enhancements will ensure that our application inventory continues to meet the business needs of the ministry.

# SUPPLEMENT F

## Initiatives Status Reports

### 1.1 Contribute new data holdings to DataBC by participating with the Ministry of Labour, Citizens' Services and Open Government and others in providing data access.

#### Activities Fiscal 2011/12

1. Participate on the DataBC project.
2. Identify the data sources within the ministry and our partners (e.g. BC Transit, TransLink, and BC Ferries) and compile the data.
  - a. Inventory Data
  - b. Apply plan to two pilot data sets
    - i. Traffic Counts
    - ii. Weather Data
  - c. Release pilots on web site by March 2012
3. Establish a work plan in conjunction with partner ministries that identifies which datasets can be made available, how, and by when.

#### Status of Activities

##### Activity 1

The weather station list and the historical weather data are currently available on DataBC. We have reviewed these datasets for relevance and quality, and we are making improvements to ensure the column headers clearly identify the data published. Additional weather datasets will also be processed and published in the required Open Data format, expected to be available in early 2012, after assessments and approvals have taken place.

Traffic count data has been processed into the Open Data format. Our ministry's Open Data team has this data available in a test hosting environment and will migrate it through the Open Data assessment and approval process for publication on DataBC, with additional analysis around hosting solutions.

We are also part of the cross-government Open Data Advisory Committee and will continue to participate in developing and improving the DataBC project. This will involve developing the DataBC designated categories and participating in working groups to further define policies on data standards and how we release data. The initial focus will be on internal sharing of enterprise data within and across ministries.

##### Activity 2

Work has begun on creating an initial Open Data Inventory for our ministry, including a list of corporate applications. As we have defined this to be a business enabled process, we are working across the ministry and conducting presentations on Open Data to raise awareness of our inventory efforts and educate business areas on the Open Data Policy. This is an on-going process and inventories received to date will be reviewed with each business area to help define their value to the public and identify each business area's top priorities for release. Ministry data release priorities will be determined by the cross-branch Transformation and Technology Advisory Group.

The Open Government License (OGL) appears to apply only to core government datasets. At this point in time, we are not able to publish datasets from outside of core government (e.g. BC Transit, TransLink, ICBC, and BC Ferries) on DataBC, and therefore have been focusing our efforts on identifying ministry datasets that have been collected by government employees. We have also identified some concerns around publishing current public safety data (such as webcam images) and have held sessions with Intellectual Property Branch and Legal Services to identify any barriers to releasing this type of data. More research is taking place in this area.

## SUPPLEMENT F

# Initiatives Status Reports

### Activity 3

In addition to publishing traffic and weather data, and while the ministry-wide inventory is being prepared, we have had a chance to review other known candidate datasets. We hope the public can benefit from data that we are already publishing in the BC Geographic Warehouse (BCGW) from our Corporate Highway and Resource Information System (CHRIS). We are also in the process of gathering current publicly available data so that

these can be included in the Transportation Catalogue on DataBC. Collision data is collected from ICBC, and further investigation needs to take place during our Open Data Assessment to determine if we could publish collision data under the current OGL on DataBC. At this point in time we believe the OGL is restricted to core government data.

Our ministry has developed an Open Data Plan that outlines our strategy for opening up datasets for citizens.

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## 1.2 Develop Road and Transit User Mobile Apps.

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Through the ministry's DriveBC.ca web site, the ministry has been providing public information to road and transit users about road and weather conditions that may affect their travel for close to a decade. This includes road conditions, high mountain weather conditions, planned construction activities, emergencies closures, and access to highway webcam images throughout the network.

This information lets travellers assess the current driving conditions and routes and make informed travel decisions. However, until recently, travellers have had to access this web site before starting their travel. Given the large geographic area of the province and the variable weather through high mountain passes, road and weather conditions can and do change while people are en route.

Recent technologies in smart phone devices, along with advances in web-based technologies, have created an opportunity to make travel information available in the palm of travellers' hands. Never before have people been able to stay so informed from so many places. As such, the ministry is developing mobile-friendly applications to ensure that B.C. travellers will always have access to current information when they need it the most.

### Activities Fiscal 2011/12

1. Develop a mobile-friendly application for viewing B.C. Highway WebCams.
2. Develop a mobile-friendly High Mountain Pass Weather application to provide accurate current and forecast weather information for specific high-elevation routes, along with highway cam images (where available) and any other information or data that will provide drivers with the information they need to prepare for a safe journey.

### Status of Activities

#### Activity 1

The mobile-friendly version of the B.C. Highway WebCams site was successfully launched in July 2011 and is available from the DriveBC/Mobile menu. It can be found at <http://www.drivebc.ca/mobile/webcams/index.html>

#### Activity 2

We are currently posting High Mountain Pass Weather updates on Twitter twice a day for mobile users and other travellers.



## SUPPLEMENT F

# Initiatives Status Reports

We have added a new Road Weather Information Station (RWIS) at Beasley Bluffs, between Castlegar and Nelson on Highway 3A, and we are providing real-time data from all RWIS stations on DriveBC. There are now 62 RWIS and 13 Remote Avalanche Weather Stations. All 75 report public data on DriveBC, and these sources of information will be used by the High Mountain Pass Weather App currently under development. Planned next steps are to:

- Reformat the current weather table data to a more user-friendly format.
- Add "Current Snow Depth" and "Snow Accumulations over past X hours."
- Add new layers to DriveBC/Mobile to show high mountain pass reports and RWIS data from high mountain pass sites, along with current city reports from Environment Canada. This information will be used by the High Mountain Pass Weather App as well.
- Incorporate webcam images into the app, where available.
- Phase out the current "DriveBC Weather" site and redirect users to DriveBC.
- Launch High Mountain Pass Weather App fall 2012.

## 1.3 Enhance DriveBC to improve accessibility of road and weather information and to broaden the offering of information to the public.

### Activities Fiscal 2011/12

1. Enhance DriveBC map functionality to improve access to information about road conditions and high mountain pass weather along the provincial road network.
2. Develop mobile applications to engage citizens and industry stakeholders. B.C. travellers often need to go long distances through challenging terrain and northern weather, and weather and road conditions can change dramatically while they are en route. This makes mobile access to road and weather information extremely important.
3. Provide self-serve e-mail subscriptions to deliver customized regional or route information.

### Status of Activities

Although the capital funding request outlined in the *2011/12 Transformation and Technology Plan* for DriveBC program enhancements was not fulfilled, the ministry has made progress in delivering some of the project enhancements by

utilizing internal resources and minimizing contracting work. These enhancements include:

#### Activity 1

Developed and implemented a new DriveBC public web site that uses a Bing map interface, which has layers that displays current and planned events, incidents, road conditions, weather, and webcam information. The new web site also has the ability to display Public Safety and Emergency Announcements.

Established a process to promote DriveBC event information through social media, including Twitter, Facebook, and TranBC. We are currently piloting an automated system that would post major highways events on Twitter immediately and accurately.

#### Activity 2

Launched a mobile-friendly version of DriveBC that provides citizens and industry stakeholders with highway condition, weather, and incident information along the provincial highway network. (See Initiative Update 1.2)

## SUPPLEMENT F

# Initiatives Status Reports

Progress on all the remaining project enhancements identified in the *2011/12 Transformation and Technology Plan* requires additional capital funding.

The project enhancements that require additional capital funding include:

### Activity 1

Develop a way to post automatic system-generated messages on DriveBC. This in turn will make it easier to publish accurate and timely information on the social media sites, which will help to improve the safety and reliability of the highway network.

Make network-related data available to the public for potential reuse in privately-developed travel applications.

Develop a route planner application for the DriveBC web site and mobile application that will allow users to plan their route and receive customized traveller information,

such as incident, road condition, and weather forecasts. This will allow citizens to “know before they go.”

### Activity 2

Improve BC HighwayCams images so they can be easily displayed on a mobile device. Once this initiative is complete, the ministry will incorporate the images into the DriveBC/Mobile application.

### Activity 3

Offer self-service DriveBC e-mail subscription services to allow the public to register for DriveBC email notifications by geographical area, highway, and/or event type. These improvements will allow the public and commercial vehicle clients to subscribe to information, helping them to reduce travel time, traffic congestion, and the amount of greenhouse gases produced by the transportation sector. This will also allow citizens to make more informed travel decisions and therefore improve the safety and reliability of the highway network.

## 1.4 Launch the Social Media tools and use social media to engage with the public on issues of the ministry. Build a social media work unit that connects with and builds on resources across ministries.

### Activities Fiscal 2011/12

1. Finalize development of a social media work unit and continue to identify and build expertise within the ministry.
2. Collaborate with other ministries and transportation agencies.
3. Build on TranBC.ca, our YouTube channel, our Flickr site, and other social media tools to connect with citizens and to actively and regularly seek citizen and industry input on services.
4. Build a social media strategy that establishes the vision, objectives, strategies, and actions for the following two years.

### Status of Activities

#### Activity 1

The social media work unit has been defined and implemented. The team will continue to identify and build expertise in TRAN.

#### Activity 2

We are establishing collaborative relationships with other ministries and transportation agencies, including providers of emergency and B.C. fire information, TlCorp, and TransLink.

## SUPPLEMENT F

# Initiatives Status Reports

### Activity 3

TRAN has a presence on the following social media platforms:

- Twitter (two accounts: @TranBC and @DriveBC)
- Flickr
- YouTube
- Facebook
- Foursquare
- TranBC.ca

Our social media offerings have substantially grown in content creation, following, and engagement. For example, our DriveBC and TranBC Twitter feeds have more than doubled their followers. @DriveBC now has 4,167 followers, and @TranBC now has 1,440 followers. During the Highway 1 mudslide, DriveBC was the fourth most talked about topic on Twitter in Canada ("Hwy1" and "mudslide" were in the top 15).

Our Flickr site includes 926 photos, which have received 541,596 total views. During the Peace River Flood, the Flickr photos of the event received 170,000 views in 3 days.

Unique visitor traffic to TranBC.ca has increased more than 500 per cent. TranBC.ca has posted 98 stories and received 26,030 page views. Our 79 YouTube videos have been viewed 61,435 times in total.

### Activity 4

A social media strategy has been created. It focuses on seasonal objectives and raising awareness, as we look to build online community around our projects and initiatives. It also focuses on building our influence through engagement.

The branch continues to measure the effectiveness of its program and will revise the strategy as needed.

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## 1.5 Expand the webcam program to add 30 additional webcams during fiscal 11/12.

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The BC HighwayCams have helped DriveBC become one of the most popular and engaging B.C. government web sites. The important contribution BC HighwayCams makes to the safety of B.C. motorists has been well understood and appreciated by citizens and the commercial trucking industry since the program's start with three cams in the mid-1990s. Public and industry demand is driving the number of webcams to over 200. On average, each BC HighwayCam receives 35,000 pageviews per month, totaling 75 million pageviews per year for the whole site. The most viewed cams are on the Coquihalla Highway, the Malahat, and Kootenay Pass.

Recently, the reliability of the BC HighwayCams has increased with advancements in cam hardware, communications, and alternative power sources. New cam technologies and better communications networks

are now allowing for further development of services and multi-functional capabilities in the webcam program.

Feedback from the public, commercial truckers, and emergency responders continues to be extremely positive, and the ministry is often asked to add more cams.

### Activities Fiscal 2011/12

1. Install 30 webcams.
2. Engage with citizens and industry to prioritize webcam locations.
3. Incorporate user-controlled webcam technology.
4. Assess potential of releasing the weather and traffic volume data collected at webcam sites as part of the Open Data initiative.

# SUPPLEMENT F

## Initiatives Status Reports

### Status of Activities

#### Activity 1

25 of 30 cams planned for 2011/12 have been installed. The rest will be installed by March 31, 2012. A number of cams from the Construction Cam Web Services Program will also be converted to the BC HighwayCam program in fiscal 2011/12. This means the number of new cams available to the public through DriveBC will be well in excess of the 30 originally planned.

#### Activity 2

TRAN used feedback from citizens and industry, as well as other sources, to establish new BC HighwayCams sites across the province, including highway segments with no previous cams and high mountain pass routes.

#### Activity 3

A pilot user-controlled BC HighwayCam will be active by August 2012. If user feedback is positive, the goal in subsequent years will be to expand user-controlled cams where user-controlled pan-tilt-zoom technology would

benefit the driving public and industry. One added benefit of this activity is the possible incorporation of video streaming into webcam services.

#### Activity 4

A study is in progress to determine if TRAN can add weather and traffic data collected by the Construction Camera Web Services program to the ministry's open data offerings.

### Further Advancements in 2011

A number of new cams in remote and high mountain pass areas have been made possible by new satellite communications technology and solar power. These innovations let us place cams in areas where communications and access to power were previously difficult.

New infra-red illuminators are improving the nighttime image quality on cams where ambient lighting conditions at night are poor.

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## 2.1 Work with Pacific Gateway Alliance to enhance the use of technology for measuring the supply chain to identify inefficiencies, implement solutions, and promote the global reputation of the Pacific Gateway supply chain.

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### Activities Fiscal 2011/12

The Province is part of the Pacific Gateway Alliance (PGA), which is an executive committee made up of key stakeholders responsible for strengthening B.C.'s transportation and trade links to the Asia-Pacific. In addition to building infrastructure, a large part of the PGA's work is to collaboratively improve supply chain efficiency. Some examples of this work have been the signing of Service Level Agreements between partners, contingency and capacity planning, and long-term labour contracts between employers and unions serving the Pacific Gateway.

The Pacific Gateway Alliance is working together to promote its competitive advantages and identify any aspects of the supply chain that need to be improved. This will be done by:

- measuring the supply chain in a thorough, comprehensive manner that provides information at a level sufficient to identify areas of competitiveness that can be marketed to customers, along with areas where performance enhancement may be needed (Transport Canada);



## SUPPLEMENT F

# Initiatives Status Reports

- analysis of how the Pacific Gateway performs on key end-to-end performance measures that are transparent and at an appropriate level for performance enhancement (Pacific Gateway Branch);
- implementing performance enhancements (e.g. terminal operators, railways);
- preparation of comparative performance materials for customers' marketing (Pacific Gateway Branch); and
- joint marketing of the Pacific Gateway supply chain (all).

### Status of Activities

The data acquired comes from a variety of sources depending on the mode of transportation. Container information is acquired while they are on vessels through the use of Automatic Identification System (AIS) technology. AIS technology is commonly used by the marine industry as a means of identifying and locating ocean vessels through the use of automated information exchange. This provides an accurate picture of where containers are at any given time while on the ocean.

Once goods arrive at B.C. ports, several innovative practices are used for tracking their movement. One example is the use of geofences, which are electronic transponders placed at well-known choke points in the Lower Mainland. Trucks that travel through a geofence send off an electronic signal using GPS technology that updates their status, tracking actual transit times. Port Metro Vancouver stipulates that all trucks travelling through the port must be equipped with GPS transponders, which helps the success of this initiative.

Data is received on container movements from shipping carriers, rail companies, ports, and third party logistics firms on each segment of the supply chain (e.g. ocean travel times, idle time at the ports, etc.), which is aggregated to measure the times of the entire Pacific Gateway supply chain. To aggregate this data, SQL technology is used, which is a database system designed specifically for managing different datasets that have a relationship with one another, making it ideal for measuring end to end transit times. Statistical Analysis Software (SAS) is also used, which allows the datasets to be presented in formats beneficial to users, such as month by month comparisons.

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## 2.2 Increase participation and expand the Weigh2GoBC network.

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Increased participation in Weigh2GoBC will boost program benefits such as fuel and time related cost savings for registered carriers and reduced greenhouse gas emissions.

Increased participation also allows Commercial Vehicle Safety and Enforcement inspectors to quickly identify carriers with poor safety performance records. By focusing enforcement and inspection activities on the carriers most needing increased attention, the inspectors make the roads safer for everyone.

The Weigh2GoBC program employs a network of Weigh-in-Motion and Automatic Vehicle Identification technologies to enable more efficient movement of commercial vehicles through the province. The network currently consists of seven Weigh2Go enabled stations.

### Activities Fiscal 2011/12

1. Increase market awareness and double participation in the Weigh2GoBC program.

## SUPPLEMENT F

# Initiatives Status Reports

2. Initiate incentive program for registration in Weigh2GoBC.

### Status of Activities

#### Activity 1

The ministry launched a marketing and communication strategy when the Weigh2GoBC program was announced. Activities to increase awareness included developing and distributing print and online materials and road signs at all Weigh2Go enabled stations. Print materials were distributed at numerous trucking industry events and, in collaboration with ICBC, were mailed to commercial carriers along with prorated insurance renewals. The result of these activities and positive word of mouth is that program participation has quadrupled from 590 to 2,430 vehicles since September 2010. Of these vehicles, 1,100 are from B.C. and 1,330 are from Alberta. Marketing activities will continue into the future.

The W2G program released a system upgrade that automatically allows members of Alberta's Partners in Compliance Program (PIC) to participate in B.C.'s Weigh2Go program.

On August 8, 2011, B.C. and Washington State signed a commercial vehicle data sharing agreement that allows carriers from Washington State to participate in B.C.'s Weigh2GoBC program and B.C. carriers to participate in Washington's similar Commercial Vehicle Information Systems and Networks (CVISN) program.

#### Activity 2

The Premium Carrier Program launched with Weigh2GoBC. Carriers that qualify enjoy a number of benefits including recognition by way of a certificate to be displayed in their offices and a listing of their company information on the CVSE web site.

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## 2.3 Develop commercial transport mobile applications for oversized load permitting and route planning, as well as accessing seasonal load restriction information

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These mobile applications will benefit the commercial transport industry by providing one-stop 24/7 access to permits, pre-approval of routes, and consolidated highway information. The motoring public will benefit by having extraordinary loads and higher risk permit applications receive a more thorough review by ministry staff, which will increase safety on the highway network.

3. Publish a report and maps grouped by highway that show lane and width restrictions for each impediment and their relative locations.

### Status of Year 1 Activities

#### Activity 1

Completed development of a new process in the Transportation Permit System (TPS) that allows customers to make online permit applications and payments and allows staff to approve applications online. This improvement has streamlined the permitting process for both commercial carriers and ministry staff. TPS can be used on tablet devices to accommodate truckers who are on the move.

### Activities Fiscal 2011/12

1. Provide a public-facing online permit application, payment processing, and auto-approvals capable application that is available 24/7.
2. Develop an e-mail subscription service for the public to receive seasonal load restriction information by district.

## SUPPLEMENT F

# Initiatives Status Reports

### Activity 2

By February 1, 2012, the ministry will launch a subscription service that allows commercial carriers to receive timely load restrictions by e-mail, so they will no longer be required to monitor a web site.

### Activity 3

By March 1, 2012, the ministry will launch a database with routing reports and restrictive clearance information that industry can use to plan overheight routes. The report will be refreshed as updates are made to the clearance database. It will be presented on a mobile-friendly site, where links to associated commercial trucking information can be made available.

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## 3.1 Continue to use collision prediction modelling (CPM), in addition to collision history, on all expansion projects valued over \$20 million.

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The field of highway safety continues to advance, and the ministry keeps our highways safe by constantly applying the latest knowledge and techniques.

CPM uses modelling to predict the probability and severity of collisions during the design stage of a project, enabling designers to implement design elements that will mitigate the potential for future collisions. The technique lets ministry engineers estimate the safety performance of major types of highway segments and intersections, as well as estimate the effect different road design elements will have on safety performance.

In 2009, the Ministry of Transportation and Infrastructure defined how collision prediction models (CPMs) should be used during road safety analysis to improve the overall safety performance estimate.

Along with CPMs, a location's collision history will continue to be an important consideration when determining where to invest in safety improvements.

### Activities Fiscal 2011/12

1. Integrate CPMs into design for expansion projects on select projects valued over \$20 million.
2. Determine criteria for more widespread use of CPMs in other highway design applications.

### Status of Activities

#### Activity 1

Collision prediction models have been used in eight capital projects valued over \$20 million:

- South Fraser Perimeter Road
- Highway 1 - Hoffman's Bluff
- Highway 1 - Kicking Horse Canyon
- Highway 97 – Bentley Road to Okanagan Lake Park
- Highway 1 - Monte Creek to Pritchard
- Highway 1 - Hilltop Road to Balmoral Road
- Highway 97 - Stone Creek to Williams Road
- Highway 29 – Site C (BC Hydro project)

#### Activity 2

The ministry established criteria, such as the road alignment and the cross sectional elements, for more widespread use of CPMs in other highway design applications.

Also, CPM methodologies are being used for business cases to establish safety benefits.

## SUPPLEMENT F

# Initiatives Status Reports

### 3.2 Grow the intelligent highway sign network by installing intelligent signs at key decision locations throughout the network to provide congestion, road condition, weather, and routing information to motorists.

Intelligent signs display information specific to the driver based on input from road or weather sensors. Traditionally, road signs advise a driver of a potential situation ahead. Through the use of new technology, it is possible to tell the driver if that situation does in fact exist. Signs can receive data from traffic volume sensors indicating that congestion is ahead. They can receive data from weather sensors indicating that the road may be slippery. They can receive data from speed detectors indicating that the driver is entering a curve too quickly.

Studies have shown that intelligent signs improve safety.

#### Activities Fiscal 2011/12

1. Pilot two projects connecting remote weather information with intelligent, changeable message boards that provide custom weather-related messages.

#### Status of Activities

##### Activity 1

Completed analysis to identify priority locations for pilot projects. The first pilot location was identified on Highway 4 near Kennedy Lake due to the collision history, the road alignment, and the high mountain pass.

On February 25, 2011, two changeable message signs were installed at either end of the pass. These signs are directly linked to a mountaintop road weather and information system that reads weather and then customizes travel advisories according to the weather. The advisories are then displayed on the changeable message signs, alerting travellers to the possibility of snow, ice, or other road conditions.

A second road weather and information system has been installed on Highway 3 at Beasley Bluffs near Nelson. The installation of the changeable messaging signs is scheduled for June 2012.

### 3.3 Implement Transit Smart Cards and Fare Gates, and add a more convenient and streamlined billing process for citizens.

#### Activities Fiscal 2011/12

1. The Province worked with TransLink to implement pay system infrastructure that supports the Smart Card program in the Lower Mainland. This included a \$40 million provincial contribution towards fare gate construction. Construction will be taking place at all SkyTrain and West Coast Express stations between summer 2011 and winter 2012 to install the fare gates.
2. TRAN has prepared a plan for leveraging Shared Service BC identity management services and synching with plans for programs within the ministry's accountabilities, including the TransLink Compass Card. Strategic planning meetings with TransLink are being scheduled to identify potential partnership projects.



## SUPPLEMENT F

# Initiatives Status Reports

### Status of Activities

#### Activity 1

In March 2011, TransLink announced that its new smart card would be named the Compass card. It will be put into operation in 2013. The Compass card will work in a similar way to other pre-paid cards and will be available at retail locations throughout the Lower Mainland. Customers load the card with a transit fare product – either a monthly pass or a pay-as-you-go balance. Customers then tap the card on a special reader every time they get on and off the bus (or SkyTrain, etc.), and, if not on a monthly pass, the fare is automatically calculated and deducted from their card balance.

A second part of the Compass system is the faregate. Faregates are gates or other physical barriers that only allow you into a SkyTrain station once your fare is paid.

Customers will use their Compass cards to unlock the gate and enter the platform. Construction will be taking place at all SkyTrain and West Coast Express stations between summer 2011 and winter 2012 to install the faregates. While the Millennium Line, Canada Line, and West Coast express stations were designed to accommodate faregates, the Expo Line stations were not and will require more substantial upgrades.

#### Activity 2

The Ministry of Transportation and Infrastructure is working with TransLink and other transportation service providers to identify opportunities to link the Compass card functions with the Province's Identity Management initiative or to add new functions. Some applications already exist, such as U-Pass BC being integrated into all post-secondary student cards in Metro Vancouver.

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## 3.4 Develop a Regional Traffic Data System (RTDS) that uses cellular data and GPS tracking.

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Getting to your destination on time may soon get a lot easier. Along with all the regular features on DriveBC, TRAN is partnering with local and national transportation agencies to provide the ability to view real-time traffic conditions on a computer or mobile device.

We are developing a robust and reliable dataset, gathered from cellular data and GPS tracking in the Metro Vancouver area, that will allow the DriveBC map to display coloured routes that depict free-flowing corridors or congested traffic. The information will be accurate, immediate, and will include secondary routes and roads as well as highways in the entire region (unlike other systems that provide main highway routes only).

In addition to helping citizens and industry, RTDS will also help transportation planners to identify traffic patterns and speed profiles. The resulting efficiencies of the RTDS project will provide environmental benefits, including a reduction in greenhouse gas emissions and fuel savings due to more efficient trip planning.

In support of the B.C. governments open data and open information policy, the RTDS's data will be open and available for reuse by the public. This open data will enable service innovation, facilitate citizen-centric self-service, and create opportunities for partnership and value-added services.

The RTDS will be completed by fall 2012.

## SUPPLEMENT F

# Initiatives Status Reports

### Activities Fiscal 2011/12

1. Design a pilot system to acquire cellular data and GPS tracking to provide real-time traffic speed profiles and congestion monitoring on the Metro Vancouver road system by spring 2012.
2. Design a system to provide traffic speed and congestion information for Metro Vancouver in support of traffic monitoring and transportation planning activities by fall 2012.

### Status of Activities

#### Activity 1

The ministry partnered with TransLink in 2010 for the delivery of a Regional Traffic Data System which will collect, disseminate, and archive real time probe-based traffic flow information for the road network in the Metro Vancouver area.

The Request for Proposals (RFP) closed January 2011.

Both the Ministry of Transportation and Infrastructure and Transport Canada assisted TransLink through the RFP process by conducting their own separate evaluations of TransLink's RFP responses. The successful RFP proponent was notified in March 2011.

The project is in progress and the ministry expects to have access to Lower Mainland traffic congestion data in August 2012.

#### Activity 2

The DriveBC team is in the planning phase, working on two components to be ready to present Lower Mainland traffic congestion data. They are developing:

1. a way to depict linear events on the DriveBC public web site (currently the site shows all events as points); and
2. a regional DriveBC presentation mechanism.

User testing of RTDS will begin in spring/summer 2012 with final testing in fall 2012.

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## 3.5 Design, build, implement, and systems commission a Regional Transportation Management Centre (RTMC) and install associated facilities and equipment for its operation.

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The purpose of the RTMC is to be a multi-agency facility that will act as a focal point of transportation management in the Lower Mainland, enabling increased efficiency and safety for the movement of people and goods.

The RTMC will provide remote monitoring and control of existing Local Operations Centres within the region. It will also facilitate coordinated, consistent, and planned responses to events and allow data and video sharing with other agencies and municipalities as well as dissemination of traffic information through DriveBC and other social media.

RTMC will be fully operational by summer 2013.

### Activities Fiscal 2011/12

1. Finalize funding agreement with TransLink and Transport Canada for project cost sharing by fall 2011.
2. Undertake Regional Transportation Management Centre building design, communication infrastructure design, Local Operations Centre upgrades, and centralized traffic management system software design by spring 2012.

## SUPPLEMENT F

# Initiatives Status Reports

### Status of Activities

#### Activity 1

Successfully completed agreement with TransLink and Transport Canada for cost sharing.

#### Activity 2

RTMC building is designed and is currently under construction and slated to be completed by fall 2012.

Request for Proposals issued in October 2011 for development and implementation of communication, Local Operations Center upgrades, and centralized traffic management system software. Contract award in January 2012. System implementation and commissioning will take place fall 2012 to summer 2013.

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## 3.6 Support intelligent vehicle technologies.

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Our vehicles are getting smarter. GPS systems have become commonplace, and drivers are increasingly using digital maps to get to their destination. New sensors allow vehicles to become aware of the road and other vehicles around them. Some new vehicles are even able to communicate with each other, combining technologies like [Wi-Fi](#), GPS, and radar-based safety features, to share information and alert drivers if they detect potential hazards.

And this intelligence isn't just limited to cars. Infrastructure is getting smarter, too. New automated roadside systems merge sensors, network connectivity, and software to allow roads and bridges to communicate information to and about the vehicles driving by. This technology can let drivers know of upcoming accidents or congestion and make it easier to manage traffic flows, providing economic and environmental benefits.

As transportation changes, we're looking at ways of engaging the automobile industry to support these intelligent vehicle technologies that keep drivers safer and more informed.

### Activities Fiscal 2011/12

1. Approach key automobile industry partners to collaborate on requirements for infrastructure improvements.

### Status of Activities

#### Activity 1

Attended ITS Canada Conference and made contact with the Connected Vehicles Group.

Engaged with the Ministry of Transportation Ontario, who have met with auto industry representatives.

Attended ITS World Congress, where the automobile industry was showcasing technological developments that can lead to driverless vehicles. Observed field demonstrations of infrastructure-to-vehicle and vehicle-to-vehicle communications fitted in automobiles. Met with representatives of industry who are developing the interfaces between the infrastructure and the vehicles.

Engaged with Navteq, the company that provides the majority of mapping data to GPS navigation units both aftermarket and in-vehicle. Discussed the feasibility of sharing data and updates, with the ministry providing mapping data based on newly completed construction.





# Transformation and Technology Plan

2011/12 – 2013/14



Ministry of  
Transportation  
and Infrastructure