

KEY FINDINGS

SMART FLEETS IN THE FLATS



VANCOUVER
ECONOMIC COMMISSION

As a primary distribution hub for the city, the False Creek Flats (“the Flats”) has the potential to become a powerful centre for smart logistics, improving the performance of entire industry clusters and acting as a hub for the clean distribution of goods and services.

As it stands, transportation is the single largest source of emissions for industrial activities in the Flats, making up approximately 44% of total emissions from business in the Flats, or approximately 15,770 tonnes of CO₂. The wholesale and logistics sectors is the primary contributor.

On March 26, 2015 the Vancouver Economic Commission brought smart fleet service providers together with fleet operators and green business advisors to identify opportunities for supporting development of the Smart Logistics sector in the Flats and across Vancouver.

Three major opportunities were identified, along with a set of quick-start actions for moving forward:

01/ *Training the Trainers*

Reducing the environmental footprint of fleets is still a relatively new concept to many businesses. This means that even the individuals in the drivers’ seat aren’t aware of the spectrum of activities and technologies that can drastically reduce fleet emissions. This lack of awareness not only slows the rate of adoption of new technologies, it can also lead to false assumptions about the resources and capacity needed to ‘green’ a fleet.



VEC Quick-start Actions

- Host a series of Lunch n’ Learns to teach sustainability advisors and fleet managers about emerging fleet technologies
- Curate case studies and business profiles to be shared with sustainability advisors and on ThrivingVancouver.com—an online tool to help businesses green their operations
- Utilize City of Vancouver insights and expertise to help develop driver training programs for local fleet-managers

02/ *Building the Case for Centralized Infrastructure in Industrial Zones*

Central industrial areas often serve as distribution hubs for the entire city, meaning they are major contributors to city-wide GHG emissions. We estimate that 44% of the 30,000+ tonnes of CO₂ generated by business operations in the False Creek Flats are from transportation. Given the “return-to-base” nature of vehicle movement to and from central industrial areas, they also present unique opportunities for fleet conversion and alternative fueling infrastructure.



VEC Quick-start Actions

- Conduct a feasibility study to determine the options for, and potential impacts of, developing centralized alternative fueling infrastructure in the False Creek Flats
- Explore options for increasing the intensity of use of existing and planned alternative fueling infrastructure in the Flats—identify additional demonstration fleets and opportunities for improving vehicle performance at the City’s works yards

03/ *Curating and Connecting Stepping-Stone Tools and Technologies*

Not all technologies are immediately implementable: Some require significant infrastructure changes; some rely on widespread cultural change; and others can only be employed under a specific set of conditions or with large-scale initial capital costs. That being said, there are a number of ‘stepping-stone’ technologies with far fewer barriers to adoption. These include software systems for route optimization and fleet conversion technologies with a seamless transfer back to gasoline, among others.



VEC Quick-start Actions

- Identify those technologies with the lowest barriers to entry in the market and outline the types of fleets for which they are most effective
- Conduct strategic and targeted outreach to educate fleet owners and managers on the potential impact and cost savings associated with stepping-stone technologies
- Promote uptake of existing tools, such as alternative fuel apps

IMMEDIATE OPPORTUNITIES

WAYS TO ENGAGE TODAY

01/ *Training the Trainers*

The Vancouver Economic Commission is launching a digital platform this summer that will celebrate business sustainability leaders, connect businesses to sustainability experts in their sector, and create an online community for sustainable business in Vancouver.

This curated platform can be used to help introduce both sustainability advisors and fleet owners to the variety of smart fleet solutions that are on the market, as well as educate them on the relevant solutions for given fleet sizes and uses.

We are collecting content for this site at <http://ku.mu/clients/vec/>, including business profiles, case studies and articles. Any articles you contribute would link back to you and your LinkedIn profile and your website as a means of directing prospective clients.

02/ *Building the Case for Centralized Infrastructure in Industrial Zones*

For those businesses already engaged in providing alternative fueling services/infrastructure in the False Creek Flats and surrounding industrial areas, there is an opportunity to get directly involved in a targeted study/business engagement program over the coming year with False Creek Flats businesses.

The program will include connecting businesses with local service providers and neighbourhood expertise in order to overcome collective challenges. If you are interested in participating in this program as a service provider or a business looking to improve its operations, [let us know](#).

03/ *Curating and Communicating Stepping-Stone Tools and Technologies*

E3 Fleet is an existing member-based network in BC for sharing information and instigating action that will help spur the shift to alternative fuels. You can sign up to their newsletter at <http://www.e3fleet.com/> to stay up to date on new technologies, training sessions, and policies that are helping enable the transition to smarter fleets.



COMMON CHALLENGES TO GREENING FLEETS

Fuelling Infrastructure

For large vehicles, natural gas is often the best viable alternative fuel. Natural gas fueling stations, however, are few and far between. There are only a handful of them in BC, and most are privately owned and operated. They are also quite expensive to build and require a significant up-front investment.

- Aquaterra, LordCo

Long-term Solutions

Many forward-thinking businesses have done demonstration projects with new technologies—testing an alternative to gas on one or several of their vehicles. These demonstration projects, however, are often temporary and don't include the provision of more permanent fueling infrastructure. There is a need for long-term solutions that mimic the success of these short-term pilots and include a financially viable model for installing the associated long-term refuelling infrastructure.

- Landsea Tours

Knowing the Options

Whether you're looking for software solutions, maintenance solutions, or fleet conversion options, it can be difficult discerning the best possible solution for your individual business needs. New technologies and solutions are arriving on the market daily, and not only is it time-consuming to research the options, but many are so new that the expected outcomes of implementing these technologies/programs are unclear.

- West Coast Reduction, 505 Junk,
Fresh Direct Produce

Transient Fleets

When businesses have vehicles that are not returning to a home base, switching to alternative fuels becomes a much bigger challenge. A critical mass of charging infrastructure, for instance, is yet to be established in order to support transient electric fleets.

- Telus

Full Day Capacity

Although return-to-base fleets are the most conducive to switching to alternative fuel sources, many return-to-base vehicles need to be on the road all day. For these businesses, there needs to be vehicles with enough capacity to go hundreds of kilometres without recharging.

- Digitech Laser, West Coast Reduction

Maintenance & Money

Many businesses have already begun making incremental steps toward greening their operations through engaging in carbon accounting, implementing rigid driver training and vehicle maintenance, and even converting small parts of their fleets. Finding incremental steps at a limited incremental cost will be key for these businesses to continue to advance their sustainability efforts. The first generation of a new technology is likely to be too expensive to install and maintain, but having incremental options will be integral to their success.

- Greater Vancouver Food Bank Society,
Mills Office Productivity



SOLUTION-PROVIDERS

GREEN FLEET INSIGHTS

PowerFuel CNG

PowerFuel Compressed Natural Gas Systems is a Ford Q185 certified system that works for any fleet operating pickup trucks that are returning to base on a daily basis. Benefits include a 40 - 60% savings on fuel and 25% less greenhouse gas emissions.

PowerDisc

Powerdisc brings to market zero emissions class 8 trucks for container shipping movement (yard truck and/or drayage). The trucks are electric/fuel cell hybrids running on grid electricity and hydrogen. It is a solution for anyone in short haul freight, or running terminal tractors (yard trucks) in a distribution centre. The benefits include zero emissions container movement at the same total cost of ownership (Capex + Opex) as current internal combustion options.

Hydra Energy

Hydra Energy is a Vancouver startup that helps companies upgrade their vehicle fleets to run dual-fuel on both hydrogen and gasoline. In exchange for exclusivity on supplying hydrogen fuel at a fixed price and for a fixed term, Hydra provides Hydrogen-as-a-Service at no capital cost.

The Hydra process entails the installation of a hydrogen fuel tank, fuel injectors, piping, and safety equipment in addition to a partner engine controller to manage the hydrogen injection. They also provide a containerized hydrogen refueling station on site to ensure their customers always have access to fuel. Hydra Energy is responsible for operation and maintenance of the system as well as regular fuel delivery.

Hydra is best suited for commercial vehicle fleets with light and medium duty vehicles that return to a central location. Key benefits include helping lower operating costs, removing exposure to pricing volatility, and reducing emissions by 99% because when you burn hydrogen in an engine, the only exhaust is water vapor.

Eco Options

Eco-Options is a customer-driven initiative that represents users and delivers group buying value by helping vehicle owners, both business fleets and individuals, shrink their fuel costs and their carbon footprint through fuel switching.

Fuel switching maintains similar power, torque and towing capacity, yet doubles range. Eco-Options helps by converting engines to operate bi-fuel (both gasoline and propane or CNG), supplying fuel through commercial card lock dispensers, and reporting your actual vehicle and driver performance each month.

Key benefits include lower maintenance and oil change costs and better sale or trade-in value when you sell. Eco-Options has also developed a google maps display for locating the 47 commercial card lock and 51 retail propane dispensers across the Lower Mainland and Vancouver Island.

VeloMetro

VeloMetro is developing an enclosed electric bicycle to be run on a one-way sharing network system. The original inspiration was the velocar, but with the latest technology and engineering they are now developing human powered, enclosed from the weather, fully networked vehicles, assisted by electric and solar power. VeloMetro's goal is to provide a completely sustainable transportation option.

Shift Urban Delivery

Shift partners with local businesses to improve their delivery logistics. Their professional riders and unique power assisted tricycles provide a logistics option that gives clients the control of internalized operations, with the savings and simplicity of an outsourcing partner. It's a green fleet system that saves clients time, money, and carbon.

Daily Delivery

Using fully electric scooters, Daily Delivery makes it simple for businesses and individuals to request on-demand/same-day deliveries from one point to another. Daily Delivery connects its customers with a network of crowdsources local delivery fleets, who shop on their behalf from any store or restaurant and deliver it in just a matter of minutes.

Saturna Green

Saturna Green is a Transportation as a Service platform that provides a one-way trip scooter sharing service. Their fleet of cloud connected electric scooters offers commuter convenience and can also be used for tourism purposes. Benefits include reduced congestion on the roads, less air pollutions, and a means of transportation that is as fast as a car but as easy to maneuver as a bicycle.

Hydrogen in Motion

Hydrogen In Motion Inc. (H2M) is developing a mobile non-compressed hydrogen storage tank to be delivered as an off board refueling solution to owners of hydrogen fuel cell vehicles and for use in other applications such as mining equipment or distributed power. H2M has two business lines, a manufacturing line and a service delivery line, both designed to address the key barriers to adoption for the hydrogen fuel cell vehicle: fuel storage, range and re fueling.

The portability of H2M's tanks allow for off-board refueling whereby you place the tanks into your Fuel Cell Vehicle much like changing out a water cooler jug, but lighter. The non-compressed tank works with any equipment that is using PEM hydrogen fuel cell stack as a power source, so it can be used for automotive, material handling equipment, mining equipment, as a storage for renewable energy etc. Benefits to the H2M tank include more cost and space effective options for storing hydrogen that is light and portable.

Webtech Wireless

Webtech Wireless provides industry leading GPS Fleet Management solutions that help commercial and government organizations reduce their carbon footprint. Fleet managers use Webtech Fleet Center to monitor driver behaviour and help drivers reduce idling, harsh breaking and sharp acceleration, as well as delivery intelligent data that increases efficiency.

Webtech Driver Center, a software application powered by Webtech Fleet Center, enables drivers to comply with government Hours of Service (HOS) regulations, offers rich features such as Electronic Driver Vehicle Inspection Reports (eDVIR), electronic forms, messaging, and hands-free voice calling.

Key benefits include increases in efficiency and productivity, as well as improved driver safety and fuel economy. Webtech wireless solutions are best suited to transportation companies, construction operations, and public works.

Big Green Island

Big Green Island Transportation provides the full spectrum of services for residential and commercial customers that are adopting to plug-in electric and hybrid vehicles for their charging infrastructure requirements. They provide the necessary analysis, planning and infrastructure solutions for fleets looking to dramatically reduce their transportation-related emissions with charging infrastructure designs and customized EV adoption plans, which achieve both significant cost savings and GHG emissions reductions.

Mojio

The Mojio device and its connected car app provides real time data on the health and status of your car. By making people more aware of the status of their personal vehicles or vehicle fleets, they save their clients time, money, and unexpected trips to the mechanic.

Agile Tracking Solutions

Agile Tracking Solutions makes GPS fleet tracking systems with an industry leading, open, universal M2M (Machine to Machine) platform. Their highly customizable and hardware-independent solution gives clients the option to tailor their solution, offering a complete range from simple, affordable track-and-trace applications for small business, to the most advanced telematics and M2M systems for large enterprise fleets.

Key benefits include improving customer service, saving money, enhancing productivity, improving driver safety, providing invoice verification, and theft recovery.



STAY INFORMED

RESOURCES + NETWORKS

Vancouver Smart Fleets on Linked In

We've started a [Linked In](#) group to continue the conversation about smart fleets in Vancouver online. Join the group to share resources, updates, events, etc. with both the VEC and your colleagues!

False Creek Flats Community

For more information on the False Creek Flats business community, visit www.falsecreekflats.ca

You can also [sign up for our newsletter](#) about business activities in the Flats as well as the [City's list serve](#) to receive regular updates about the local area planning process for the Flats.

Thriving Vancouver

Later this spring the Vancouver Economic Commission is launching a digital platform to celebrate and connect businesses that are greening their operations. Stay tuned for ThrivingVancouver.com to go live.

Green + Digital Demonstration Program

The VEC put out our first call for applicants to the [Green and Digital Demonstration Program](#) (GDDP) last fall. This program provides support to entrepreneurs and start-ups in Vancouver's clean technology and digital sectors by giving them the opportunity to gain temporary access to City-owned assets (e.g. buildings, streets or vehicles) for technology demonstrations and proof-of-concept trials.

If you are looking for demonstration opportunities for a new green fleet technology, stay tuned for another call for applicants this fall!



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