

RESEARCH TO SUPPORT THE  
DEVELOPMENT OF A  
DEPARTMENTAL ACTION PLAN  
FOR GREEN OPERATIONS IN  
REAL ESTATE AND FACILITIES  
MANAGEMENT

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## EXECUTIVE SUMMARY

Vancouver has the goal of being the Greenest City in the world by 2020. In order to achieve this, the City has created both a public facing *Greenest City Action Plan* and an internal *Green Operations Plan* which looks at the City's own operations. The *Green Operations Plan* includes both organization-wide Corporate Initiatives and more specific Departmental Action Plans. This report details the research conducted to develop a Departmental Action Plan for the Real Estate and Facilities Management (REFM) department.

Background research was conducted by reviewing the Departmental Action Plans for the other City departments and the Corporate Initiatives to check for transferrable actions and shared objectives. Best practice research was conducted by reviewing the environmental plans of other municipalities to see what actions were common across proactive organisations. This research was stored as lists of ideas.

Interviews were held with managers and their teams in the REFM department following the background research. These interviews were used to elicit information on Corporate Initiatives, REFM functions, environmental impacts, current mitigation actions, past achievements and ideas. In addition, emails were sent to teams requesting suggestions and feedback on ideas.

The interviews produced more than 30 ideas to improve the environmental performance of REFM. These ranged from quick wins around the office, such as encouraging people to use the stairs instead of the elevator and using digital signatures to reduce the need for printing, to larger projects involving multiple staff members and specific expertise, such as establishing an REFM Green Team and creating a Green Janitorial Program. The ideas from the background research were then reviewed again to see if they could fill any remaining gaps in reducing the REFM environmental impact, and this brought the total number of ideas to approximately 50.

The interviews also revealed how environmental considerations are already integrated throughout REFM work. LEED Gold is required for all public buildings, tenant improvements and facilities funded by City capital funds that are new construction and over 500m<sup>2</sup> in area, which provides third party assurance that developments are environmentally sound. The core business of the Environmental Planning team is to reduce environmental impacts, the Corporate Zero Waste Officer is focused on reducing and diverting office waste from landfill, and the Energy and Utilities Manager has a *Facilities Energy Management Plan* underway to reduce energy consumption. The Maintenance and Operations team replace lighting and equipment with energy efficient options as standard, and are continually performing upgrades to reduce energy and water consumption across REFM facilities. These are just a few examples of where environmental sustainability is business as usual in the REFM department.

This report includes the information outlined above, as well as further details on the high priority ideas, the next steps required in completing the REFM Departmental Action Plan, and some communication and engagement tools to launch the Plan to REFM staff. A draft Departmental Action Plan was provided to the REFM department which can be finalised following staff and management consultations on which projects will be prioritized in the short and long term and strategies for completion.

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## CONTEXT

### a. GREEN OPERATIONS PLAN

This project supports the City of Vancouver's Green Operations Plan which outlines the organization's targets and actions for greening internal operations across the pillars of zero carbon, zero waste and healthy ecosystems. The Green Operations Plan is comprised of organization-wide Corporate Initiatives and more specific Departmental Action Plans (DAPs). There are a number of DAPs already in action (and soon to be updated) and this report details the research conducted to develop a DAP for the Real Estate and Facilities Management (REFM) department.

The project is also strategically linked with the 2011-2021 Corporate Business Plan which includes as Goal 3: "The City Leads the Way on Green Issues".

### b. CORPORATE INITIATIVES

The Green Operations Plan Corporate Initiatives operate alongside the DAPs. They are:

- **The Corporate Carbon Strategy** - strategies for carbon neutrality and carbon pricing
- **The Fleet Management Plan** - equipment and fuel strategies for fleet
- **The Facilities Energy Management Plan** - addresses building energy management
- **The Corporate Zero Waste Plan** - addresses diversion and reduction strategies for facility generated waste (vs. construction/operational waste - addressed by departmental plans)
- **Corporate Procurement Policy** - addresses sustainable and ethical purchasing
- **IT Green Operations Action Plan** - addresses management of IT assets

REFM, along with the rest of the organisation, is already involved in these initiatives and as such actions taken under these programs will be excluded from the REFM DAP. There may be some small overlap where it is felt additional gains can be made but predominately the actions in the REFM DAP will be original. Current actions under the Corporate Initiatives were reviewed to avoid duplication.

### c. OTHER DEPARTMENTAL ACTION PLANS

DAPs already exist for the following departments:

- Engineering
- Parks and Recreation
- Vancouver Police
- Vancouver Fire and Rescue Services
- Vancouver Civic Theatres

These DAPs are a good starting point for the REFM DAP to see what ideas may be transferrable. Some of the ideas that could potentially be replicated in the REFM DAP are listed below. The Engineering DAP has been excluded as the projects within are very specific to engineering work and are not transferrable to REFM.

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#### PARKS DEPARTMENTAL ACTION PLAN

- Develop and implement a sustainable commuting program. Review baseline data, policy and practice on parking, work use of personal vehicles, telecommuting, Modo co-op vehicles, fleet vehicles, pre-paid transit tickets, active transportation incentives, and initiatives under the City's sustainable commuting program.
- Enhance green team programs and support to increase effectiveness, expand reach, and include other topics.
- Implement compostable packaging in Park Board concessions; promote and support reusable container use.
- Reduce potable water use at high consumption locations.
- Explore opportunities to digitise marketing materials. Identify other types of information that can move to digital.
- Improve utilisation and reduce costs of zero waste stations in community centres
- Identify opportunities to shift to more environmentally and socially responsible products and services in PB procurement. Develop procurement guidelines and evaluation criteria to facilitate this shift.

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#### POLICE DEPARTMENTAL ACTION PLAN

- Research how staff can be encouraged to public transit instead of driving to and from work.

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#### FIRE AND RESCUE DEPARTMENTAL ACTION PLAN

- Use culture shift/behaviour change to shut down lighting and appliances when not in use.

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#### THEATRE DEPARTMENTAL ACTION PLAN

- Develop a communications plan for staff and facility users to increase awareness of the program.
- Monitor efficacy of signage program implemented re: waste diversion program.

## BACKGROUND RESEARCH

### a. BEST PRACTICE IDEAS

Part of this project involves the investigation of what other municipalities are doing to reduce their environmental impact and current best practices. The cities that were reviewed include Calgary, San Francisco, Austin, New York City (NYC), Chicago, Portland and Sydney.

Some potential opportunities to come out of this research, which are not already implemented universally throughout REFAM, are listed below. These were used to stimulate local ideas in the interviews with key stakeholders to see if there is potential to use or adapt these actions. Some of these opportunities are listed in the summary table of ideas (Table 1) to fill remaining gaps following the staff interviews. See Appendix 1 for the sources of these ideas.

### i. ZERO CARBON

#### TRANSPORT

- Bike sharing program (Portland)
- Charging stations for electric vehicles (NYC, Portland)
- Encourage carpooling and provide designated carpool parking (NYC)
- Practice eco-driving and reduce idling (Chicago)
- Shuttle bus to public transport provided for staff (NYC) [*Note: this would only be necessary at Evans Yard*]
- Establish video and/or web conferencing capability in all major facilities and train staff to leverage these tools to reduce travel (Portland)

#### BUILDING EXTERIORS

- Green roofs and green walls (NYC, Chicago, Portland, Austin)
- Solar panels (NYC, Portland)
- NYC °CoolRoofs, or light-coloured roofs (NYC, Chicago, Portland)
- Skylights and natural lighting features (NYC, Chicago, Portland)
- Light-coloured paving (NYC)
- Exterior lights are efficient, have cut offs and shielding to prevent light pollution (NYC, Chicago, Portland)
- Trees to shade parking lot and buildings (NYC, Portland)
- Window glazing with various levels of transparency depending on usage (NYC)
- Operable (opening) windows (NYC)
- Light shelves (NYC)

#### BUILDING INTERIORS

- Mandatory energy audits (NYC)
- Demand-based ventilation, controlled by CO<sub>2</sub> sensors (NYC)
- Daylight and occupancy controls for lighting (NYC, Portland)

- Frequently occupied areas are grouped where there are few of them (NYC)
- Reflective surfaces to increase daylight penetration (NYC, Chicago)
- Remove personal electronic appliances, e.g. microwaves, kettles (Chicago)
- Drain water heat recovery (NYC)
- Encourage printing multiple pages on each side of a sheet (Chicago)

## ii. ZERO WASTE

### CONSTRUCTION

- Building materials reduced in design (NYC)
- Major building materials targeted for recycled content (NYC)
- Local materials used (NYC)

### DECONSTRUCTION

- Building materials are deconstructed and salvaged, and construction/demolition waste is sorted offsite (NYC, Portland) [*Note: the Deconstruction Waste Guidelines for the City of Vancouver are soon to be finalised*]
- Reuse existing furnishings when possible (Chicago)

## iii. HEALTHY ECOSYSTEMS

### BIODIVERSITY

- Ensure invasive species are not permitted and create incentives to remove them and replace with native species (Austin, Portland)
- No tropical hardwoods are used and wood comes from sustainable, managed forests. Consider certified materials e.g. FSC, PEFC (NYC, Portland, San Francisco)
- Rapidly renewable products are used e.g. bamboo (NYC, Portland)

### FOOD

- Utilise restaurants and catering that support local farms and producers, and organic and low-carbon practices (Chicago, Portland)
- Increase the use of public and private land and roof-tops for growing food (Portland)

### WATER

- Site water auditing (Sydney)
- Universal water metering (Calgary, Sydney)
- Rainwater capture (NYC, Sydney, Austin)
- Storm water management, including retention onsite (NYC, Chicago, Portland, Sydney, Austin)
- Increase in permeable ground cover (Chicago, Portland, Austin)
- Rain gardens to filter waste water and storm water (Sydney, Austin)
- Recycle water (Sydney, Austin)



- Non potable water used for gardens, in toilets, parks etc (Portland, Sydney, Austin)
- Native, drought resistant plants (NYC, Chicago, Portland)
- Drip irrigation for low maintenance landscapes (Portland)
- Identify and fix leakages (Calgary, Chicago, Sydney)
- Waterless services, e.g. composting toilets, waterless urinals (NYC)
- Cooling tower upgrades and optimisation (Sydney)
- Discourage hand washing of dishes and only run dishwasher when full (Portland)

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## POLLUTION

- Air intakes located near roof, away from street pollutants and dusty operations (NYC)
- Outside entries to the building should have an interior walk-off mat or grille at each entrance to reduce soil and contaminants entering the workplace to improve indoor air quality and reduce maintenance and flooring replacement costs (Portland)
- Choose vehicle washing facilities that use biodegradable soaps, minimize detergent use, and employ water conservation measures (Chicago)
- Use water based washers instead of solvent based washers (Chicago)
- Purchase and use non-toxic cleaning products (Portland, San Francisco)
- Use low-mercury lamps for all fluorescent lighting, recycle at end of use (Portland)
- Use products that do not contain, are coated with (wood and metal), release or produce polyvinyl chloride (PVC), heavy metals or dioxins (Portland, San Francisco)
- Identify, assess and reduce emerging contaminants in water, such as pharmaceuticals and personal care products (Austin)

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## EDUCATION AND ENGAGEMENT

- Develop an educational and awards program to showcase best practices (Austin)
- Build partnerships to support community projects, campaigns and events that engage residents around healthy, connected low-carbon communities (Portland)
- Incorporate public art and interpretive signage into green spaces as tools to demonstrate water conservation, recycling and low-impact development (Austin)
- Communication campaigns highlighting the value of water (Sydney)
- Provide tools, education and assistance for utility users to better understand the environmental impacts of their water and energy use, and waste generation (Austin)
- Create office Green Teams to encourage implementation of the sustainable practices
- Provide employees with opportunities to learn about sustainable practices, such as lunchtime brown bag discussions or speakers that focus on green topics (Portland)
- Create “Go Green” information boards in your office, highlighting steps taken by the organisation and promoting sustainability (Portland)

## INTERVIEWS

### a. KEY STAKEHOLDERS

Interviews were held with managers and their teams in the REFM department as listed below. These interviews were used to elicit information on Corporate Initiatives, REFM functions, environmental impacts, current mitigation actions, past achievements and ideas. In addition, emails were sent to teams throughout the period of the project requesting input and feedback on ideas.

- *11 JUNE 2015: FACILITIES PLANNING TEAM*
- *16 JUNE 2015: ENERGY AND UTILITIES MANAGER*
- *17 JUNE 2015: CORPORATE ZERO WASTE OFFICER*
- *17 JUNE 2015: FACILITIES PLANNING & DEVELOPMENT DIRECTOR*
- *18 JUNE 2015: ENVIRONMENTAL PLANNING TEAM*
- *18 JUNE 2015: MAINTENANCE & OPERATIONS TEAM*
- *29 JUNE 2015: MANAGER OF BUILDING OPERATIONS*
- *30 JUNE 2015: SUPPLY CHAIN MANAGEMENT SUSTAINABILITY SPECIALIST*
- *8 JULY 2015: FACILITIES DEVELOPMENT TEAM*
- *23 JULY 2015: PROPERTY DEVELOPMENT OFFICER*
- *29 JULY 2015: PROPERTY MANAGEMENT TEAM*

### b. CURRENT PRACTICES

The following information was garnered from interviews and a review of documents provided as a result of the interviews. The information is split into organisation-wide Corporate Initiatives to see what is done at the highest level, followed by statistics to see how REFM is tracking, then ongoing actions and past achievements to demonstrate how REFM is already reducing environmental impacts. The ideas that were suggested in the interviews, as well as best practice ideas to fill the remaining gaps, are in the following section.

## i. ZERO CARBON

REFM has carbon impacts mainly through the City's building portfolio. The City pays the energy bills on approximately 370 City owned and operated buildings through its Energy and Utilities group within REFM. These buildings consume natural gas, electricity, steam, and district energy for their operational needs.

### STATISTICS

- Total REFM facilities GHG emissions have reduced 21% from 2007 – 2015 Q2.
- Floor space has increased 20% from 2007 – 2014 resulting in a 34% reduction in GHG emissions per area of floor space (emissions intensity) across City buildings.

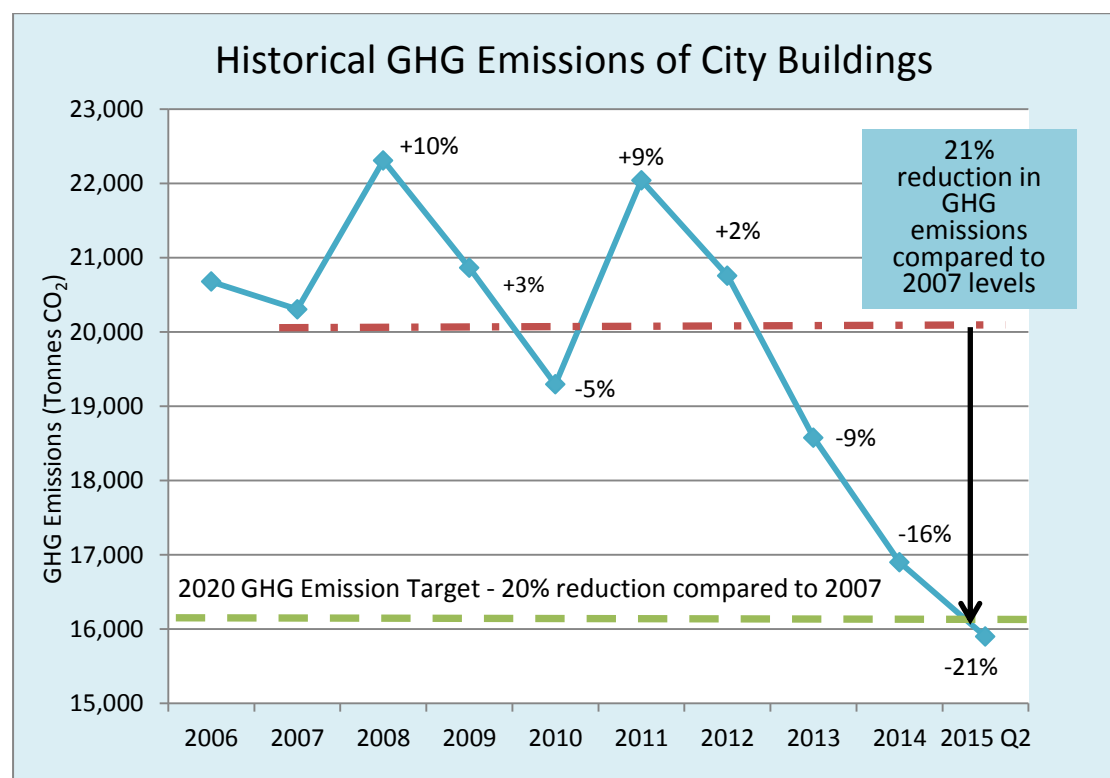


Figure 1: Historical annual trends of GHG emission levels of City owned and/or operated facilities

### CORPORATE INITIATIVES

- The *Facilities Energy Management Plan*, which includes the key strategies:
  - Staff engagement program
  - New building performance standards
  - Continuous optimization
  - Capital maintenance program
  - Quick start – capital program
  - Organisational potential – strategic prioritisation for asset ownership and management
- Fleet Management Plan
- Modo car share

- IT Green Operations Plan
- The *Energy Efficiency Purchasing Policy*, which stipulates that the City purchase energy efficient equipment, supplies and appliances where possible including HVAC equipment, electric motors, office equipment, lighting and signage, transformers and consumer electronics. Product specifications are to be compliant with Energy Star and Natural Resources Canada Office of Energy Efficiency guidelines.
- The *Sustainable and Ethical Procurement* section in the corporate *Procurement Policy*, which stipulates:
  - Formal recognition and reward of suppliers who demonstrate leadership in sustainability, environmental stewardship and fair labour practices;
  - Minimum specifications for goods and services that achieve environmental benefits such as increased energy and resource efficiency, reduced toxicity and pollution, reduced carbon dependency, zero waste, etc;
  - Working with suppliers to advance environmental performance;
  - Giving preference to products and services that represent a non-carbon alternative, are carbon neutral or that minimise greenhouse gas emissions;
  - Supporting the development of an environmentally sustainable local economy.

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## ONGOING REFM ACTIONS/PAST ACHIEVEMENTS

### Facilities Planning and Development

- LEED Gold is required for all public buildings, tenant improvements and facilities funded by City capital funds that are new construction and over 500m<sup>2</sup> in area. Facilities received from other sources should be constructed to the same standard.
- The Technical Guidelines require a 30 percent reduction in energy consumption compared to the latest Vancouver Building Bylaw.
- The Housing Design and Technical Guidelines specify LEED Gold is mandatory for all housing facilities, and the current version of the LEED for Homes - Multi-family Midrise for 4 to 12 storey buildings is applicable.
  - Buildings must be designed to achieve a minimum of 30% reduction in energy consumption compared to the current Building Bylaw.
  - Buildings should integrate the Passive House standard, including optimized envelope design, building massing and orientation, and low demand equipment.
- The Technical Guidelines include many carbon reduction requirements such as:
  - All appliances to be Energy Star where possible.
  - LED lighting is preferred.
  - Sub-metering of electricity is required.
  - High efficiency T8 fluorescent lighting is preferred. No halogen lamps.
  - Each area has light switches and storage rooms have occupancy sensors.
  - Direct Digital Control (DDC) ensure lighting is turned off 30 minutes after end of day; sweeps turn lights off every hour until 30 minutes before opening; and outdoor lighting is separately programmable from indoor lighting to respond to ambient light levels and schedule.

- Low-E coatings are used on glass where solar heat gain may be significant and unwanted solar gain is mitigated with external shading.
- Low carbon energy sources for space and domestic hot water heating.
- The Facilities Development team use car sharing and carpooling for site visits.

#### Energy and Utilities

- The City is reducing the energy consumption in its facilities through a number of strategies including optimising performance of building automation systems, upgrading mechanical and electrical systems, switching to alternative energy sources, and encouraging behavioural modification to reduce energy consumption.
- The Manager of Energy and Utilities has conducted a number of workshops on energy efficiency for Maintenance and Operations staff, such as energy efficient lighting technology workshops for electricians, and energy efficient ice rink operations to ice rink operators.

#### Environmental Planning

- A long term planning approach is taken in contaminated site management to determine whether materials need to be removed at all or if they can be risk-managed in place. Special trips to remove contaminated materials have been reduced by educating people to store materials (if handled properly) until the project is complete, which can then be picked up when a contractor is in the vicinity.
- Consideration is given for contaminated site consultants who are geographically near the site and are encouraged to courier samples to labs rather than driving them themselves.
- Environmental Planning vans have been downsized and fleet reduced.
- The Environmental Planning Group has an internal policy that requires staff to implement the following strategies:
  - Turn off computers, lights, and electronics when not in use;
  - Unplug cell phone and equipment chargers when not in use;
  - When possible, take public transit to site visits, meetings, etc.
  - If using pool or MODO vehicles, utilize electric or hybrid where possible;
  - Plan routes to minimise vehicle use.

#### Maintenance and Operations

- All lights are replaced with LEDs as necessary and equipment replaced with energy efficient options as refits occur and site assessment supports the change.
- LED lighting upgrades are occurring across theatres in the summer/fall of 2015, including front of house lights and chandeliers, which will save approximately \$150,000/year on energy and maintenance.
- Lunch and Learn energy information and new product sessions to ensure front line staff have up to date knowledge and can identify refit opportunities.

#### Real Estate Services

- For newly built retail assets, tenants are required to follow LEED Gold Tenant Improvement Guidelines.

## Kitsilano Pool and Second Beach Pool Windbreaks

In the summer of 2014, Building Manager Ian Harvey and his team enlisted the help of some UBC engineering students to install trial windbreaks at Kitsilano Pool and Second Beach Pool. That summer saw:

- A 30% reduction in natural gas consumption
- \$45k/year cost savings
- Protection of swimmers from chilly winds

The results were increased in 2015 by extending the fence height and adding a wind break to the entire north side of the pool at Kitsilano. The windscreen at Second Beach will be left in situ for the entire season as a further extension of last year's trial.

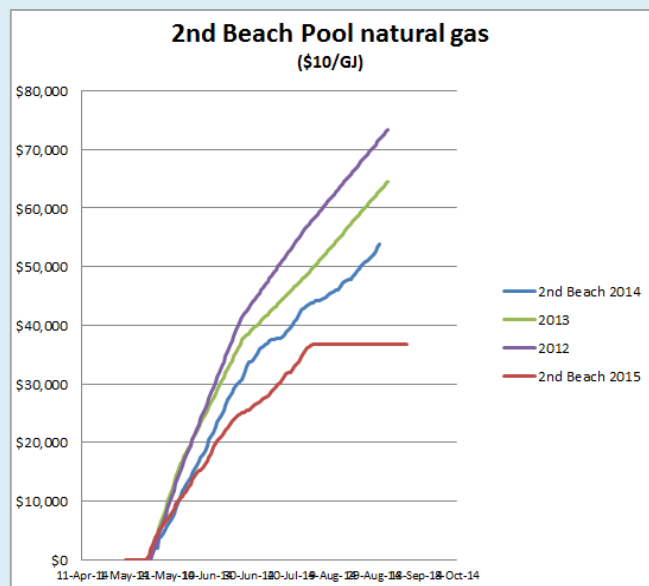
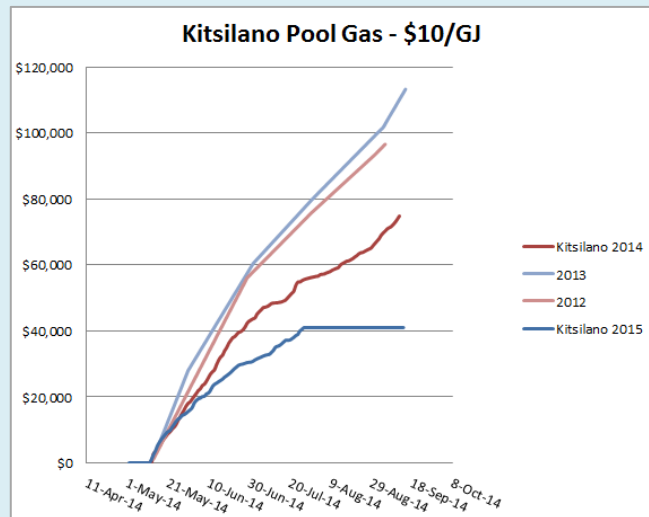


Figure 2: Case study on recent windbreak projects

## ii. ZERO WASTE

The main waste impacts in REFM include construction and deconstruction waste, equipment replacement and office paper waste.

### STATISTICS

- 86% of waste diverted from landfill from City corporate sites in June 2015, surpassing the 2015 goal of 80%.
- 70% of waste diverted from landfill from public facing buildings in June 2015, surpassing the 2015 goal of 60%.

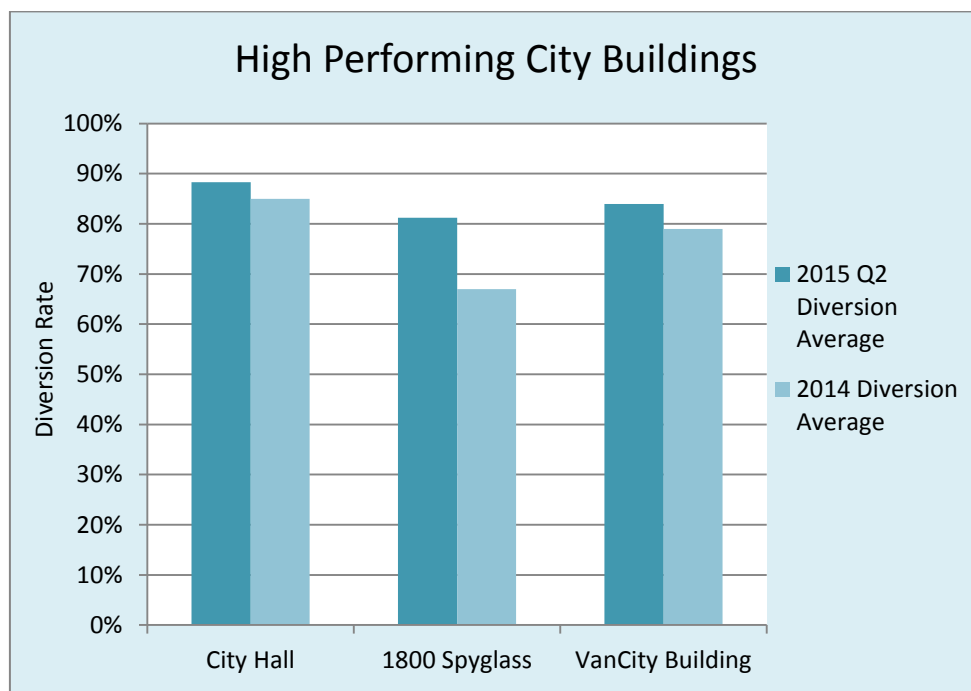


Figure 3: Sample of buildings with high performance in waste diversion

### CORPORATE INITIATIVES

- Corporate Zero Waste Plan
- Don't shop – Swap! Office supplies swap list

### ONGOING REFM ACTIONS/PAST ACHIEVEMENTS

#### Facilities Planning and Development

- Deconstruction Guidelines are soon to be released, driving industry forward on sustainability.
- The Technical Guidelines require that floor finishes maximize recycled content and end-of-life recyclability.
- Capital Maintenance includes the requirement to recycle old equipment such as boilers in project specifications.

## Environmental Planning

- The Environmental Planning Group asks staff to implement the following strategies:
  - Set printer defaults to double-sided, black and white, and EconoMode;
  - Require suppliers send all documents (e.g. proposals, reports, invoices) in electronic format and request/accept no hard copies;
  - Print only when necessary and consider the need before doing so;
  - Share files with colleagues electronically, not via hard copy;
  - Manage project files electronically, reducing or eliminating hard copy files;
  - Sort your waste appropriately at Zero Waste Stations.

## Maintenance and Operations

- Light bulbs are disposed of responsibly.

## iii. HEALTHY ECOSYSTEMS

REFM has impacts on ecosystems through janitorial products and practices, building water consumption, irrigation, construction materials and contaminated soils management.

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## STATISTICS

- 70% of janitorial spend in 2014 was on third party certified sustainable products
- Estimated 19% reduction in facility water use from 2006-2014

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## CORPORATE INITIATIVES

- Corporate Water Reduction Plan (*forthcoming*)
- Toxin Reduction Plan (*forthcoming*)
- Vancouver Bird Friendly Design Guidelines: <http://vancouver.ca/parks-recreation-culture/vancouver-bird-strategy.aspx>

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## ONGOING REFM ACTIONS/PAST ACHIEVEMENTS

### Facilities Planning and Development

- In addition to LEED Gold, the Technical Guidelines include many healthy ecosystem requirements such as:
  - Plumbing fixtures and fittings to be water saver low consumption.
  - All faucets to include aerators for water conservation.
  - Sub-metering of water.
  - The Bike Mobility Amenity Technical Guidelines require the bike wash area to include a cleanable sediment trap in the floor drain.
  - All materials used in construction and finishing are to be free of hazardous materials, such as asbestos, lead and PCBs, and are formaldehyde free.
  - Dark colours should not be used for impervious surfaces to reduce heat island effect.
  - Pervious surfaces should be used where possible to minimize storm water runoff.



- All rooftop landscaped areas shall be irrigated with high-efficiency irrigation technology and include irrigation controls as part of the DDC system.
- Wood to be certified in accordance with the Forest Stewardship Council's Principles and Criteria if it is competitively priced with non-certified wood.
- Where an extensive green roof is provided it must be minimal maintenance, not require irrigation and be self-sustaining.
- At all entrances from the outdoors should have walk-off mats.

#### Maintenance and Operations

- Green Janitorial RFP specifies Green Seal, Eco Logo or Design for Environment products.
- Integrated Pest Management to reduce and eliminate use of pesticides has been in place for many years.
- Maintenance and Operations have recently installed auto level controls on the water supply into Trout Lake.
- Ongoing program to install low water flow fixtures.
- Three spray pads recycle water and the remainder as now on user-operated push buttons.

#### Real Estate Services

- LEED Gold Tenant Improvement Guidelines

## iv. BUILDING AWARDS

The City of Vancouver has received a number of awards for environmental design, including:

- Creekside Community Centre: First LEED platinum Community Centre in Canada.
- VanDusen Visitors' Centre: First Living Building Challenge in Canada, 2012 Lieutenant Governor's Award for Engineering Excellence, 2012 Lieutenant Governor of British Columbia Award in Architecture, 2012 World Architecture News Award.
- Trout Lake Community Centre: 2009 Excellence For Green Building, Globe Foundation and World Green Building Council.
- Trout Lake ice rink: 2009 British Columbia Wood First Champion.
- Olympic Village: 2010 International Award for Liveable Communities.
- Hillcrest Centre: 2012 Masonry Design Award: People's Choice, 2012 VRCA Silver award, 2011 North American Wood Design Award, 2010 Consulting Engineers of BC Award of Merit.
- Oppenheimer Park Activity Centre: 2012 Lieutenant-Governor of British Columbia Award.
- Sunset Community Centre: 2008 "CONNIE" Awards for Concrete Construction For Tilt-up Structures and the Grand CONNIE Award.
- Killarney Complex – Community Centre, Pool, Ice Rink: 2007 Award of Merit - Lieutenant-Governor of British Columbia Award.

## IDEAS

### a. SUMMARY TABLE

The ideas below are a result of the interviews with REFM staff and the best practice research. They are ordered by priority, which is based on the opinion of the author using the criteria in the Key. This table, particularly the priority, green benefit and other benefit columns, should be reviewed and amended by the REFM Directors and Green Team as appropriate prior to insertion into the DAP.

#### Key:

Effort	Green Benefit	Other Benefit	Priority
☹	Minor	* Minor	<b>C</b> Citizen e.g. service improvement
☹☹	FTE 1-5 weeks	** Good	<b>E</b> Employee e.g. improved experiences, job satisfaction, efficiency
☹☹☹	FTE 5-20 weeks	*** Very Good	<b>P</b> Process e.g. improved operating or technical process
☹☹☹☹	Multiple FTE	**** Excellent	<b>B</b> Business e.g. improved business process, reduced risk
			<b>High</b> Excellent environmental gain with reasonable effort
			<b>Quick Win</b> Low environmental gain but minor effort
			<b>Medium</b> High environmental gain with high effort, or lower gain with low effort
			<b>Low</b> High effort in proportion to environmental gain

Table 1: Summary of Departmental Action Plan ideas

Idea	Zero Carbon	Zero Waste	Healthy Ecosystems	Effort	Green Benefit	Other Benefit	Value	Priority
Deconstruction Waste Guidelines		X		☹☹☹	****	P B	Targets a gap in facility planning waste management and drives the industry forward on sustainability	High
Establish a REFM Green Team	X	X	X	☹☹☹	****	E P B	Helps drive sustainability within REFM, create better communication and coordination between teams, manage staff suggestions	High
Energy efficiency workshops	X			☹☹☹	****	E P B	Educates and encourages staff to incorporate sustainability into their work	High
Green Janitorial Program	X	X	X	☹☹☹	****	E P B	Educate staff on reducing use of cleaning products and water, on making sustainable cleaning choices and reducing waste	High
Install water metering at Manitoba and Evans Works Yards			X	☹☹	***	P B	Measures water consumption to allow sizing of rainwater harvesting systems and tracking of progress against Greenest City Goals of a 33% reduction in water use per capita by 2020	High
Suggestion box for ideas	X	X	X	☹	**	E P B	Provides staff with an avenue to submit ideas about sustainability	Quick Win
“Cake Day” for staff with reusable crockery and cutlery		X		☹	*	E	Educates staff on reducing waste and encourages them to bring reusable items to work to reduce the use of single-use items	Quick Win
Email signatures should remove fax numbers	X	X		☹	*	B	Discourages the sending of faxes and consequent paper waste	Quick Win
Digital signatures should be used	X	X		☹	*	B	Removes the need to print just for a signature	Quick Win
Greater clarity around computer policies such as whether to switch off or restart at night	X			☹	*	E B	There is uncertainty about the best way to reduce computer energy use	Quick Win
IT to set up a FTP for each department	X	X		☹	*	E B	This would reduce printing and the use of couriers	Quick Win
Reminder to staff to remove personal electronic appliances from desks	X			☹	*	E	Removal of heaters, fans, kettles would reduce energy consumption	Quick Win
Turn off desk lights and other electric devices before going home	X			☹	*		Reduction in energy consumption	Quick Win
Encourage carpooling to site visits	X			☹	*	E B	Reduction in transport	Quick Win
Encourage conference calling	X			☹	*		Reduction in transport	Quick Win
Provide staff with Adobe software capable of editing PDFs	X	X		☹	**	E P B	Allows staff to edit and combine/extract PDFs without having to print	Quick Win
Prioritise sustainable stationary purchases		X	X	☹	**		Sustainable choices could be prioritised such as recycled content and refillable inks to reduce waste, toxins, promote recycled materials, etc.	Quick Win
Replace single use milks/creams with full size bottles in the kitchen		X		☹	*		Reduces waste produced by excessive packaging	Quick Win
Increase the summer temperature of the 4 <sup>th</sup> floor, Crossroads building	X			☹	*	E	Would reduce energy consumption and make employees more comfortable	Quick Win
Dim or turn off ceiling lights near windows during bright summer hours if possible	X			☹	*		Reduction in energy consumption	Quick Win

Encourage people to use the stairs rather than the elevators	X			☹	*	E	Reduction in energy consumption	Quick Win
Green Building Guidelines	X	X	X	☹☹☹	***	P B	Guidelines for new construction and renovation/retrofits of CoV facilities	Medium
Require waste tonnage reporting from waste contractors for City leased buildings		X		☹☹☹	***	B	Allows reporting back to tenants, can be used in lease conditions, and will provide a clearer picture of the City's waste performance	Medium
Require tenants of City-leased buildings to manage their own waste		X		☹☹	**	B	Gives tenants ownership of their waste and reduces costs for the city	Medium
Follow up and enforce LEED Gold Tenant Improvement Guidelines with building tenants	X	X	X	☹☹☹	**	B	Ensures tenants are operating sustainably	Medium
Incorporate sustainability requirements into Hazmat contracts		X		☹☹☹	**	P B	May reduce plastic waste where legally possible	Medium
Create more targeted sustainability evaluation criteria for consultants	X	X	X	☹☹☹	***	P B	Would enable selection based on most relevant sustainability merits rather than factors unrelated to their core services	Medium
Reuse furniture internally		X		☹☹☹	***	P B	Reduces the transport of furniture to Manitoba Yards and the chance it will be sent to landfill	Medium
Quarterly newsletters with environmental performance, case studies and advice	X	X	X	☹☹	*	E B	Communicates to, educates and inspires staff to incorporate sustainability into their work and lives	Medium
Website to communicate sustainability (or more inclusion on Green Operations site)	X	X	X	☹☹	*	E B	Communicates to, educates and inspires staff to incorporate sustainability into their work, and provides avenue for staff suggestions	Medium
Provide a water bottle filler tap in the kitchens		X		☹☹	*	E	Encourages staff to drink tap water and reduce the use of single use bottles, and removes the wait for the main tap in peak periods	Low
Ensure water saving toilets are effective so that multiple flushes are not required			X	☹☹☹	*	E	Reduces water consumption and potential for blockages	Low
Make all forms electronic templates	X	X		☹☹	*	B	Reduces the need to print to complete forms	Low
Give all staff a reusable coffee mug		X		☹☹	*	E	Encourages staff to reduce single use coffee cups and engages them on waste reduction	Low
Replace kitchen paper towel dispenser		X		☹☹	*	E	Reduces paper towel waste that occurs when large amounts fall out of the unit	Low
Use contractors that provide a social benefit where possible, e.g. BladeRunners				☹☹☹		C	Social sustainability	Low
<b>Potential Ideas from Best Practice List</b>								
Create an internal environmental award program to showcase staff achievements	X	X	X	☹☹	***	E	Encourages staff to improve environmental performance and rewards and recognises those who do	High
Encourage printing multiple pages per sheet of paper	X	X		☹	*		Reduces number of pages printed	Quick Win
Incorporate signage into the workplace to showcase environmental initiatives (e.g. low flow fixtures) and encourage environmental behaviour	X	X	X	☹	*	E	Demonstrates the City's commitment to reducing environmental impact and encourages environmental behaviour	Quick Win
Source construction materials locally where appropriate	X		X	☹☹	**	C B	Reduction in transport emissions, support of local economy, greater certainty of environmental credentials	Medium
Major building materials targeted for recycled content		X	X	☹☹	**		Less raw materials used, less habitat effects	Medium
Building materials reduced in design		X	X	☹☹	**		Less raw materials used, less habitat effects	Medium
No tropical hardwoods are used and wood comes from sustainable, managed forests, e.g. certified FSC or PEFC			X	☹☹	**		Less deforestation and carbon emissions	Medium
Capture rain water onsite to use for non-potable purposes where appropriate			X	☹☹☹☹	****	C P B	Reduces demand on town water supplies	Medium
Increase permeable ground cover on and around buildings, e.g. rain gardens			X	☹☹☹	***	C	Reduces storm water run-off	Medium
Create "Go Green" information boards in the office	X	X	X	☹☹	**	E	Provides a forum to highlight steps taken by the City to reduce environmental impact and promote sustainability	Medium
Provide designated carpool parking	X			☹☹	*	E	Encourages carpooling to work	Low
Improved video and teleconferencing facilities	X			☹☹☹	**	E B	Reduces transport emissions and fuel costs	Low
Prioritise rapidly renewable products e.g. bamboo			X	☹☹	*		Less demand for old growth forests	Low
Lunchtime sustainability discussions, including guest speakers	X	X	X	☹☹	*	E	Provides staff with an opportunity to learn about sustainability	Low

## b. HIGH PRIORITY IDEAS

The following actions are high priority ideas based on the criteria of high environmental and organisational value and reasonable effort. They will require senior management support and are likely to require expertise from specific staff members within their roles.

### DECONSTRUCTION WASTE GUIDELINES

These Guidelines are in the process of finalisation and will fill a gap in the management of materials produced through deconstruction projects. They are an ambitious step that will help to drive industry forward on sustainability.

### ESTABLISH A REFM GREEN TEAM

The purpose of the Green Team is to further sustainability in REFM by bringing separate functions of the department together to undertake environmental actions and to engage staff on sustainability through communications, competitions and events. The Green Team could help to progress the REFM DAP and report progress to the Steering Committee, comprised of the REFM Directors. Terms of Reference, an Agenda template and a Minutes template can be found in Appendix 2.

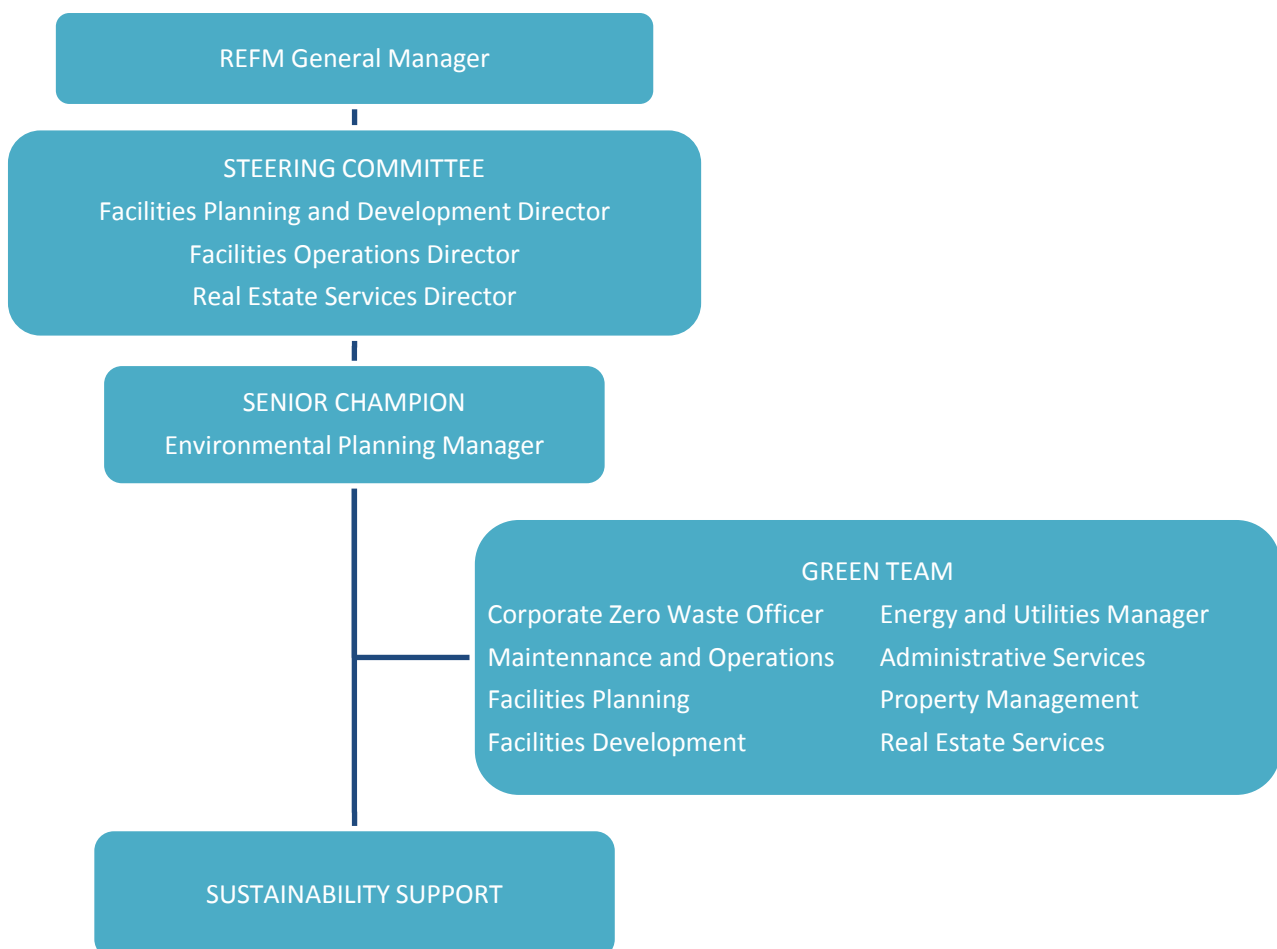


Figure 4: Suggested organisational chart for a departmental Green Team

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## ENERGY EFFICIENCY WORKSHOPS

The Manager of Energy and Utilities has already conducted a number of workshops on energy efficiency for Maintenance and Operations staff, such as energy efficient lighting technology workshops for electricians, and energy efficient ice rink operations to ice rink operators. These workshops could be expanded to other REFM teams to educate them on energy efficiency specific to their roles and on the City's zero carbon goals and progress.

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## GREEN JANITORIAL PROGRAM

Janitorial services have environmental impacts through the types and quantities of products used, water consumption and waste handling. The types of products used were reassessed in 2011 through a Green Janitorial request for proposal (RFP) that specified a preference for Green Seal, Eco Logo or Design for Environment products, and that process is currently being repeated with the new Janitorial Supplies RFP. The current rate of green products used is 70% (for 2014). While this usage is high, there are still some gaps in the education and training of janitorial staff in minimizing environmental impact through the way these products are used and the undertaking of janitorial services. Training sessions have been conducted before but these are very time consuming and staff intensive, and require regular reinforcement, so management support and budget is essential. There may also be some alignment with the forthcoming corporate Toxins Reduction Plan.

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## INSTALL WATER METERING AT WORKS YARDS

A feasibility study on rainwater harvesting was conducted by a City Studio student for the Manitoba and Evans Works Yards in 2014. The most significant finding was that while there is vast potential for harvested rainwater to be used to rinse out garbage trucks, clean vehicles, irrigation and street cleaning, the yards do not have metering to measure water consumption. Metering is required to enable suitable sizing of rainwater harvesting systems, design and costing for systems, and tracking of progress against the Greenest City Goal of a 33% reduction in water use per capita by 2020.

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## REFM ENVIRONMENTAL AWARDS PROGRAM

Environmental sustainability is an integral part of REFM functioning and staff across all branches are consistently incorporating it into their work. Many success stories are occurring without pausing for recognition or to share the outcome within REFM. An internal environmental awards program where staff members nominate their colleagues would help to recognise and incentivise exceptional REFM work to reduce the City's environmental impact. This could potentially be incorporated into the City Service Awards.

### c. QUICK WINS

The following items are quick wins (low environmental gain but low effort) which were either suggested by staff in interviews or sourced from best practice research. They are mostly staff engagement actions that do not require specialized expertise. These ideas should be discussed at the first Green Team meeting and delegated to members to investigate and initiate action:

- Suggestion box for ideas, or other avenue for staff to submit ideas
- “Cake Day” for staff with reusable crockery and cutlery
- Email signatures should remove fax numbers
- Digital signatures should be used
- Greater clarity around computer policies such as whether to switch off or restart at night
- IT to set up a FTP for each department
- Reminder to staff to remove personal electronic appliances from desks
- Turn off desk lights and other electric devices before going home
- Dim or turn off ceiling lights near windows during bright summer hours
- Increase the summer temperature of the 4th floor, Crossroads building
- Encourage people to use the stairs rather than the elevators
- Encourage carpooling to site visits
- Encourage conference calling
- Provide staff with Adobe software capable of editing PDFs
- Prioritise sustainable stationary purchases
- Replace single use milks/creams with full size bottles in the kitchen
- Encourage printing multiple pages per sheet of paper
- Incorporate signage into the workplace to showcase environmental initiatives (e.g. low flow fixtures) and encourage environmental behavior

## NEXT STEPS

### a. DEPARTMENTAL ACTION PLAN DEVELOPMENT PROCESS

Table 2: Timeline of actions to develop the Departmental Action Plan

	Step 1			Step 2			Step 3			
Timing	Early June	Mid June-Late July	Late June	Early July	Mid July	Late July	Early August	Late August	September	October
Action	Research	Interviews with REFM Staff	Consolidate information	Gap identification	Map DAP strategy	Communication and Engagement Strategy	Hand over	Engage REFM Directors	Establish Green Team	Initial Green Team meeting
People	Andrea Bassett	Andrea Bassett REFM Staff	Andrea Bassett Leslie Ng	Andrea Bassett	Andrea Bassett Jenn Mayberry	Andrea Bassett Paul Gagnon	Andrea Bassett Jenn Mayberry	Jenn Mayberry REFM Directors	Jenn Mayberry Green Team	Jenn Mayberry Green Team
Objective	Identify best practice in other jurisdictions.  Familiarise with other DAPs and Corporate Initiatives.	Interview staff to discover impacts, actions to mitigate impacts and initial ideas.	Consolidate impacts, mitigating actions and initial ideas.  Prioritise ideas into quick, short and long term.  Document case studies of past achievements.	Identify gaps in managing operational impacts.  Forward gaps to relevant staff for input and ideas.  Scope best practice research for possible ideas to fill gaps.	Develop strategy to progress DAP to completion.	Develop communication and engagement strategy.  Develop Green Team terms of reference.	Hand over report.  Present findings to REFM Directors, including recommendations.  Provide tools to ensure ongoing success of DAP implementation.	Meeting with REFM Directors to discuss DAP approval and implementation.  Discuss overall objectives and scope of DAP.  Discuss high priority ideas and resourcing.  Obtain REFM GM approval for DAP and arrange for all staff email to be sent.	Request nominations for Green Team.  Request help from managers if insufficient numbers volunteer.  Send email announcing Green Team members.	First Green Team meeting.  Nominate Green Team Lead.  Canvas any past achievements or current mitigation actions that were missed in interviews.  Present gaps in managing impacts, discuss ideas, delegate quick wins and brainstorm new ideas.

## b. COMMUNICATION AND ENGAGEMENT PLAN

The following communication and engagement plan has been developed to launch the REF M DAP for maximum staff engagement. The aim of these communications is to demonstrate senior management support of the forward direction of environment within REF M, to educate staff on the DAP, and to obtain staff support to advance the ideas contained within the DAP. A large part of communicating to and engaging with staff will be through the establishment of an REF M Green Team, as this would ensure ongoing staff engagement and ownership of the DAP.

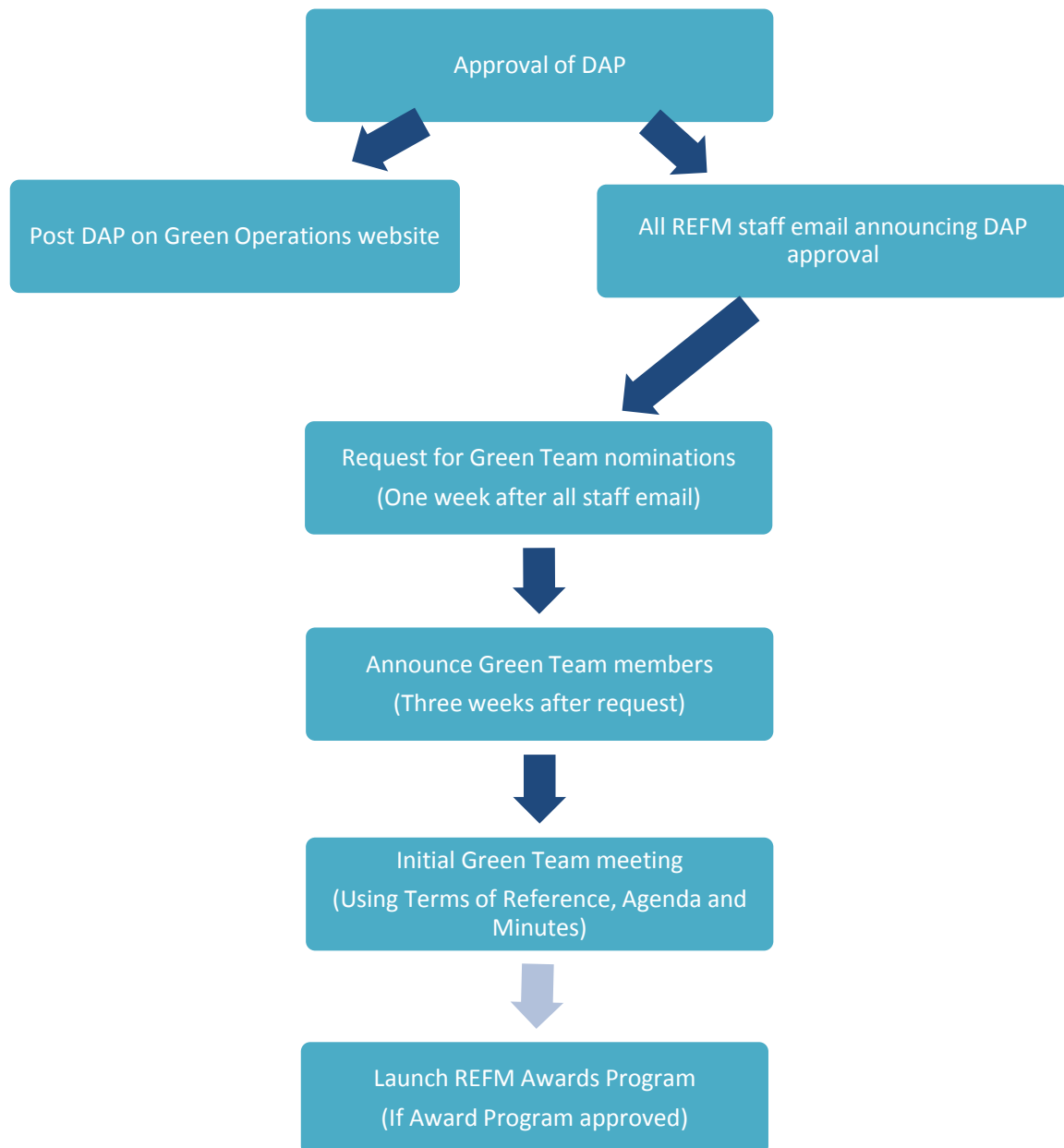


Figure 5: Schematic of communication and engagement plan



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## POSTING REFM DAP ON GREEN OPERATIONS WEBSITE

- **Who:** Request made to Leslie Ng, Sustainability Specialist in charge of updating the Green Operations website
- **What:** Inclusion of REFM DAP with other departmental plans
- **When:** Following the approval of the DAP by the General Manager REFM
- **Where:** Green Operations internal website
- **Why:** To ensure DAP is visible and accessible to the organisation

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## REFM DAP ANNOUNCEMENT

- **Who:** General Manager, REFM as requested by Manager, Environmental Planning
- **What:** An email to all REFM staff announcing the release of the DAP, its purpose and contents
- **When:** Following the approval of the DAP by the General Manager REFM
- **Where:** Staff emails
- **Why:** To demonstrate senior management support of the REFM DAP

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## Suggested Template

“I am pleased to announce the launch of the Real Estate and Facilities Management Departmental Action Plan. This plan was developed as part of the City’s Green Operations Plan which addresses the City’s own operations to achieve the goal of being the greenest city in the world by 2020. The Green Operations Plan brings together the organisation-wide Corporate Initiatives (e.g. Corporate Zero Waste Plan) and Departmental Action Plans.

The REFM Departmental Action Plan showcases some of the remarkable environmental work already undertaken and ongoing within our department. It also includes a list of ideas that can further improve our environmental performance. I encourage you to take some time to read and familiarise yourself with the Plan, which may be found here: [include link to Green Operations site].

Thank you to the many of you who contributed ideas and suggestions. Your input was invaluable to this process. If you would like to be further involved there will shortly be a call for nominations for a departmental Green Team. I strongly encourage you to step forward and volunteer your time to this worthwhile initiative.”

---

## GREEN TEAM REQUEST FOR NOMINATIONS

- **Who:** Manager, Environmental Planning or General Manager, REFM
- **What:** An email to all REFM staff calling for nominations to join the Green Team
- **When:** One week following General Manager all REFM staff email
- **Where:** Staff emails
- **Why:** To advertise the Green Team as a worthwhile undertaking and important facilitator of REFM's environmental goals. To receive nominations from staff to join the Green Team. To familiarise staff with its purpose and functions in preparation for future communications.
- **If insufficient numbers respond:**
  - Managers of each REFM function should be contacted to nominate staff within their teams.
  - Consider an incentive to join – sustainable merchandise? Reward program? Free lunches?

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### Suggested Template

“Following the launch of the REFM Departmental Action Plan we are calling for nominations to join the departmental Green Team. The Green Team was one of the key initiatives to feature in the Departmental Action Plan and will help to progress its goals. Its purpose is to further sustainability in REFM by bringing separate functions of the department together to undertake environmental actions. It will be a great opportunity to collaborate with your colleagues from other REFM functions where projects affect multiple teams.

The Green Team also provides an opportunity to engage staff on sustainability through communications, competitions and events, and to have some fun while improving the environmental performance of REFM.

The Green Team will meet for an hour in the Crossroads building on a monthly basis. Members of the team based in Evans Yard will be able to teleconference into the meetings if they are unable to attend in person. The team should include staff from all functions of REFM and a mix of seniority, and a Green Team Lead will be nominated to run meetings and distribute agendas and minutes. The first task of the Green Team will be to review the quick win ideas in the Departmental Action Plan and see what could work around the offices.

Please contact me by XXX if you wish to be involved, and please also encourage your colleagues to get behind this worthwhile initiative.”

---

## GREEN TEAM MEMBER ANNOUNCEMENT

- **Who:** Manager, Environmental Planning
- **What:** An email to all REFM staff announcing the members of the Green Team
- **When:** Three weeks following the request for nominations
- **Where:** Staff emails
- **Why:** To congratulate staff on volunteering to join the Green Team. To provide points of contact for other staff to direct suggestions and questions for the Green Team.

---

### Suggested Template

“Thank you to all who stepped forward to be a part of the REFM Green Team. I am pleased to announce the members of the team as follows:

- X
- X
- X
- etc

These team members are a point of contact if you have any ideas to further sustainability in REFM or would like more information about joining the Green Team. If you have not yet volunteered and would like to be involved please let me know. All are welcome to the kick-off meeting to be held on XXX in room XXX, teleconference details: XXX.”

## APPENDIX

### 1. BACKGROUND RESEARCH SOURCES

#### CALGARY

- Calgary Water Efficiency Plan:  
[http://www.calgary.ca/\\_layouts/cocis/DirectDownload.aspx?target=http%3a%2f%2fwww.calgary.ca%2fUEP%2fWater%2fDocuments%2fWater-Documents%2fwater\\_efficiency\\_plan.pdf&noembed=1&sf=1](http://www.calgary.ca/_layouts/cocis/DirectDownload.aspx?target=http%3a%2f%2fwww.calgary.ca%2fUEP%2fWater%2fDocuments%2fWater-Documents%2fwater_efficiency_plan.pdf&noembed=1&sf=1)

#### SAN FRANCISCO

- Tropical Hardwood and Virgin Redwood Ban:  
[http://www.amlegal.com/nxt/gateway.dll/California/environment/chapter8tropicalhardwoodandvirginredwood?f=templates\\$fn=default.htm\\$3.0\\$vid=amlegal:sanfrancisco\\_ca\\$anc=JD\\_Cchapter8](http://www.amlegal.com/nxt/gateway.dll/California/environment/chapter8tropicalhardwoodandvirginredwood?f=templates$fn=default.htm$3.0$vid=amlegal:sanfrancisco_ca$anc=JD_Cchapter8)
- Non-PVC Plastics:  
[http://www.amlegal.com/nxt/gateway.dll/California/environment/chapter5resourceconservationordinance?f=templates\\$fn=default.htm\\$3.0\\$vid=amlegal:sanfrancisco\\_ca\\$anc=JD\\_509](http://www.amlegal.com/nxt/gateway.dll/California/environment/chapter5resourceconservationordinance?f=templates$fn=default.htm$3.0$vid=amlegal:sanfrancisco_ca$anc=JD_509)
- Pest Management:  
<http://www.sfenvironment.org/article/city-staff/pest-management>
- Safer Products:  
<http://www.sfenvironment.org/article/city-staff/safer-products>

#### AUSTIN

- ImagineAustin:  
<https://www.austintexas.gov/sites/default/files/files/Planning/ImagineAustin/webiacpreduced.pdf>

#### NYC

- NYC Mayor's Office of Sustainability:  
<http://www.nyc.gov/html/planyc/html/sustainability/sustainability.shtml>
- NYC Department of Design and Construction - Sustainable Design - Projects  
<http://www.nyc.gov/html/ddc/html/design/projects.shtml>

#### CHICAGO

- City of Chicago Sustainable Operations Plan:  
[http://www.cityofchicago.org/content/dam/city/depts/dgs/supp\\_info/ChicagoSustainableOperationsPlan\\_v0\\_April2015.pdf](http://www.cityofchicago.org/content/dam/city/depts/dgs/supp_info/ChicagoSustainableOperationsPlan_v0_April2015.pdf)

- Sustainable Chicago:  
<http://www.cityofchicago.org/content/dam/city/progs/env/SustainableChicago2015.pdf>

#### PORTLAND

- City of Portland Tenant Improvement Guide:  
<http://www.portlandoregon.gov/bps/article/285215>
- City of Portland Climate Action Plan (draft):  
<http://www.portlandoregon.gov/bps/article/531984>
- City of Portland Green Building Implementation Guide 2010:  
<http://www.portlandoregon.gov/bps/article/304948>

#### SYDNEY

- City of Sydney Decentralised Water Master Plan 2012-2030:  
[http://www.cityofsydney.nsw.gov.au/\\_data/assets/pdf\\_file/0005/122873/Final-Decentralised-Water-Master-Plan.pdf](http://www.cityofsydney.nsw.gov.au/_data/assets/pdf_file/0005/122873/Final-Decentralised-Water-Master-Plan.pdf)
- City of Sydney Decentralised Water Master Plan, Part 1: Water Efficiency Plan:  
[http://www.cityofsydney.nsw.gov.au/\\_data/assets/pdf\\_file/0006/151179/Exhibition-Report-Water-Efficiency-Plan-120502.PDF](http://www.cityofsydney.nsw.gov.au/_data/assets/pdf_file/0006/151179/Exhibition-Report-Water-Efficiency-Plan-120502.PDF)

### 2. GREEN TEAM TERMS OF REFERENCE

#### INTRODUCTION

The City of Vancouver has the ambitious goal of being the greenest city in the world by 2020. To achieve this goal the City has a public facing plan, *The Greenest City Action Plan*, and an internal *Green Operations Plan*. As part of *Green Operations Plan* there are a number of Corporate Initiatives that reach the whole organisation, as well as Departmental Actions Plans to address the environmental impacts of each department. The REFM Green Team is a result of the REFM Departmental Action Plan.

#### PURPOSE

The purpose of the Green Team is to further sustainability in REFM by bringing separate functions of the department together to undertake environmental actions, to work together on projects that affect multiple teams, and to engage staff on sustainability through communications, competitions and events. The Green Team will help to progress the REFM Departmental Action Plan.

#### MEETINGS

The Green Team should meet for an hour in the Crossroads building at least quarterly and preferable monthly/bimonthly. Members of the Team based in Evans Yard will be able to teleconference into the meetings if they are unable to attend in person. The agenda and minutes should be distributed by the Green Team Lead prior to the meeting, stored on VanDocs and created using a standard format (see City “Memo” template from Microsoft Word below). These Terms of Reference and the list of Quick Wins in the Departmental Action Plan should be distributed prior to and discussed in the first meeting.

#### MEMBERSHIP

A Green Team Lead should be nominated to run meetings and distribute agendas and minutes. Ideally the team will include staff from all functions of REFM and a mix of seniority, such as:

- Environmental Planning Manager
- Corporate Zero Waste Officer
- Energy and Utilities Manager
- Representative/s from Facilities Operations
- Representative/s from Facilities Planning and Development
- Representative/s from Real Estate Services
- Representative/s from Administrative Services

Special guests should be invited as necessary, and may include staff from corporate functions such as Sustainability, IT, Supply Chain Management, Human Resources, Communications and Finance. Guests may also include staff from other departments such as Engineering and Parks and Recreation where there are overlapping projects and objectives.



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## REFM GREEN TEAM AGENDA

Month Day, Year

TO: REFM Green Team  
FROM: [Green Team Lead]  
SUBJECT: Green Team Meeting Agenda DD/MM/YYYY

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Participants:

Apologies:

Special Guests:

Agenda Items:

- Items from last meeting
- Departmental Action Plan
- New projects
- Staff communications
- Competitions
- Events
-



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## REFM GREEN TEAM MINUTES

Month Day, Year

TO: REFM Green Team

FROM: [Green Team Lead]

SUBJECT: Green Team Meeting Minutes DD/MM/YYYY

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Meeting Minutes:

Agenda Item	Responsibility	Status Update
•		
•		
•		
•		
•		
•		
•		