



City of Vancouver
Sustainability Bond Framework
Annual Information Update
October 2022

Use of Proceeds and Projects Updates (2018 Green Bond)

Project Name	Capital Budget Item	Description	Eligible Criteria	Allocation from 2018 Green Bond	Completion Date (Current Stage %)	Amount fully drawn from 2018 Green Bond	2022 Updates (as at Sep 2022)
Fire Hall 17 Renewal	(Public Safety Facilities)	To replace the existing Fire Hall 17 located at 7070 Knight Street with a new building. The new Fire Hall 17 is being designed to be LEED Gold and Passive House certified and as a pilot for the new CaGBC Zero Carbon building Standard	Green Buildings	\$14,300,000	Q1 2023 (96%)	\$14,300,000	Completed and occupied. Actual operational performance KPIs by end 2022. Zero Emissions Strategy: Passive House, CaGBC Zero Carbon Building, Net Zero Energy, all electric Ground source heat pump space heating Air source heat pump DHW 80 kW Solar PV Results so far: EUI 16 kWh/m ² -yr, 96% reduction GHGI 0.2 kg/m ² -yr, 100% reduction
Roddan Lodge Redevelopment	(Community Facilities)	New building to provide replacement self-contained units for the existing Roddan Lodge residents and low-end-of-market rental units. The unit mix will be studios and one and two bedroom units. The new building will also contain a replacement facility for the Evelyn Saller Centre, a social service agency for low income and at risk adults living in the Downtown Eastside, and includes a low-cost cafeteria, showers, laundry services and a variety of social and recreational programs.	Green Buildings	\$26,650,000	Completed (100%)	\$26,650,000	Completed and occupied. Actual operational performance KPIs to follow by end 2022. Zero Emissions Strategy: 30% energy below code, all electric Aermec NRP air source heat pumps – space heating Aermec NRK high temp air source heat pumps – DHW Results: so far EUI 151 kWh/m ² -yr, 80% reduction GHGI 1.6 kg/m ² -yr, 98% reduction
Neighbourhood Energy Utility (NEU) system expansion	(Neighbourhood Energy)	Expansion of the NEU system to serve new customers in False Creek area. The program includes: 1) Engineering and construction activities to expand the distribution system to 12 new large customer buildings; 2) Completion of minor heating plant boiler and controls upgrades, and; 3) Engineering analysis and design for expansion of sewage heat recovery system at the False Creek Energy Centre.	Renewable Energy	\$6,023,000	Completed (100%)	\$6,023,000	Current NEU service area (as at Dec 2021): 603,000 m ² NEU service area added in 2021: ~42,000 m ² Renewable energy use in 2021 (projected): 69% GHG reduction forecast in 2021: 6,300 tonnes CO ₂ /year Qualitative highlights from 2021: Secured up to \$10.2M grant funding for 6.6MW capacity expansion of sewage heat recovery system; expected completion Q4 2022.
Sewer & Water Main Reconstruction	(Sewer & Water)	This program replaces the sewer infrastructure from a combined system (single pipes that carry storm water and sewage mixed together) to a separated system (separate storm pipes and sanitary pipes), which provides a higher service level, reduces flooding risk and prevents combined sewage overflows into receiving water bodies.	Sustainable Water and Wastewater Management	\$32,550,000	Completed (100%)	\$32,550,000	Status: % of system that is separated : 55.1% (per 2021 Service Plan) length (km) of sewer pipe constructed (renewal) in 2021: 7.1km (per 2021 Service Plan) Environmental benefits: Eliminates combined sewer overflow Prevents flooding by increasing capacity Allows storm water to be used as a resource
Sidewalk rehabilitation & curb ramp program	(Streets and bridge infrastructure)	Installation/reconstruction of curb ramps at street and lane intersections to provide easier access to the sidewalks. This program benefits many pedestrians including persons with disabilities, persons who use mobility aids and persons with strollers and shopping trolleys. There has been an increase in the demand for curb ramps as the City endeavours to complete the sidewalk network for seamless travel throughout the pedestrian environment.	Clean Transportation	\$3,477,000	Completed (100%)	\$3,477,000	KPIs not available at this time.
Pedestrian and bike signal rehabilitation	(Street lighting, signals and communication systems)	Rehabilitate and modify existing pedestrian / bicycle traffic signals. Activities typically include the replacement / upgrade of aging equipment to bring signals up to current standards, as well as modifications such as the installation of countdown timers, cyclist push buttons, automated detection and accessible pedestrian signals for the sight and hearing impaired.	Clean Transportation	\$2,000,000	Completed (100%)	\$2,000,000	KPIs not available at this time.

Use of Proceeds and Projects Updates (2021 Sustainability Bond)

Project Name	Capital Budget Item	Description	Eligible Criteria	Allocation from 2021 Sustainability Bond	Completion Date (Current Stage %)	Amount drawn from 2021 Sustainability Bond (as at Sep 2022)	2022 Updates (as at Sep 2022)
Sewer & Water Main Reconstruction	Sewer	This program replaces the sewer infrastructure from a combined system (single pipes that carry storm water and sewage mixed together) to a separated system (separate storm pipes and sanitary pipes), which provides a higher service level, reduces flooding risk and prevents combined sewage overflows into receiving water bodies.	Sustainable Water and Wastewater Management	\$70,284,220	Q4 2024 (99%)	\$70,284,220	Status: % of system that is separated : 55.1% (per 2021 Service Plan) length (km) of sewer pipe constructed (renewal) in 2021: 7.1km (per 2021 Service Plan) Environmental benefits: Eliminates combined sewer overflow Prevents flooding by increasing capacity Allows storm water to be used as a resource
Renewal of Sunset Yard	Civic facility renewal projects	The Sunset Nursery and Operations Yard master plan design locates the new buildings at the edges of the site, leaving the middle of the site for the works yard and heavy machinery. This strategy creates a buffer for the surrounding residential neighborhood and facilitates free movement within the site for fleet and staff. Nursery operations are located on the west side of the site, and the new Park Operations building is placed on the east side of the site. Its position length wise across the site and parallel to the arena allows for unobstructed views across the works yard. It also provides views from the operations building into the works yard itself. Upgrades are required to accommodate: 13,000 sf new operations building that includes offices, change rooms, and workshops. 23,500 sf new greenhouse building including headhouse. New works yard including staff and fleet parking.	Green Buildings	\$9,000,000	Q3 2024 (15%)	\$1,362,982	Design of phase one operations building under way, planning for phase 2 and 3 replacement of greenhouses and construction of low carbon energy system also under way.
Firehall #12 Seismic Upgrades	Civic facility renewal projects	Approximately \$6M is allocated to provide for the seismic upgrade of Fire Hall # 12 in Kitsilano community located at 8th Ave. & Balaclava St. in Vancouver. This fire hall was selected because it is in the right age group (approximately 30 years old) and covers a relatively large geographic area (west of Arbutus Street) where no fire hall meets current seismic standards. Structural seismic upgrade of Fire Hall 12 to meet an "Enhanced" retrofit level. Additionally, any building systems and elements that are impacted by the seismic upgrade work and determined to be end of life will be replaced. Potentially, building improvements that would positively improve or enhance energy performance could also be undertaken. Enclose mezzanine level overlooking apparatus bay for separation and move door between the entry and the vestibule so that bays can be separated from the downstairs functions (office, kitchen, recreation room). Currently in detailed design phase; proceeding to construction phase by the end of 2021	Access to basic infrastructure	\$5,844,000	Q2 2024 (27%)	\$1,578,318	KPIs not available at this time.
Streeg & Bridge Infrastructures	Sidewalk Rehabilitation & Pedestrian Curb Ram & Bike Signal Program	Pedestrian curb ramp program - Installation of curb ramp across the City's sidewalk network to improve accessibility and availability of the active transportation network Sidewalk rehabilitation - Keep the City's sidewalks in a state of good repair and encourage residents to walk thereby helping the City achieve its overall transportation targets Pedestrian & bike signal rehabilitation - Maintain proper working condition for pedestrian and bike signal, ensuring rehabilitation and technology improvement. This technological resource allows the traffic, and data monitoring team to survey, collect, and analyze patterns to implement safer traffic flow strategies	Clean Transportation; Access to basic infrastructure	\$6,855,530	Q1 2023 (65%)	\$6,855,530	KPIs not available at this time.
Energy Opmitization Program	Facility renovation and upgrades programs	The energy optimization program consists of building energy retrofit projects and building control optimization projects that reduce energy consumption and greenhouse gas emissions within city owned buildings. Project deliverables include consultant continuous optimization investigation reports, building control systems modifications, and construction of energy efficient lighting upgrades, HVAC energy retrofits, and renewable energy projects. To highlight one of the major projects we've been working on this year: Heating and Cooling System Replacement at the Vancouver Police Department Annex, located at 236 E Cordova (see image below) The chiller plant for 236 E. Cordova will be replaced with an air-source heat pump located on the roof to provide chilled water and heating water to the building. The heat pump will be able to switch from cooling to heating mode seasonally. A greenhouse gas reduction analysis was completed and it was determined that an annual GHG reduction of 77.3 Tonnes of CO2e could be achieved per year. Over the 25 year life expectancy of the systems proposed that results in a 1,932.5 Tonnes of CO2e reduction.	Green Buildings	\$2,810,000	Q4 2023 (69%)	\$2,810,000	VPD Cordova Annex chiller/heat pump project completed. KPIs not available at this time

Use of Proceeds and Projects Updates (2021 Sustainability Bond)..cont'd

Accessibility Program	Facility renovation and upgrades programs	<p>The Accessibility Program is a City-wide program to improve accessibility in civic facilities, particularly for highly utilized public venues. Special consideration must be given to ensure civic facilities are barrier-free as well as be open and welcoming to all citizens. Universal and inclusive design involves everything from handicapped accessibility, to an understanding of the multicultural citizen base, and the LGBTQ2+ community. The City has taken significant steps forward on inclusive-focused recommendations, continuing to move towards equality for all. To ensure the City achieves the greatest impact for accessibility outcomes and future planning, a Feasibility Study was completed by a consultant. The scope of this study involves reviewing existing Accessibility Audits of 30 City-owned facilities, including City Hall, to identify and prioritize work required to renovate, upgrade and remove barriers and to improve accessibility and provide universal and inclusive design. As part of this work, the City and its consultant, HCMA, are currently engaging representatives from PWDAC and SAC as well as the Transgender community, and staff from other departments (who are working on various aspects of accessibility across the City), to develop a 'prioritization matrix'. The suggested recommendations and improvements coming from the Feasibility Study are then prioritized through this matrix with the top priority projects then executed.</p>	Access to essential services	\$2,080,000	Q1 2024 (38%)	\$1,166,103	KPIs not available at this time.
Climate Emergency Response Program	Facility renovation and upgrades programs	<p>The Climate Emergency Action Plan is part of the city's initial implementation of accelerated action initiatives and integration of six 'Big Move' sustainability objectives into Vancouver Plan and is a multi faceted program that focuses on delivering services through various groups: Transportation Planning Studies: Focusing on increased active travel, transit reliability, reduced emissions/noise, increased road reallocation, efficient and effective planning, development, and review process Transport Pricing: 5 Year planning including assessment of feasibility of transport pricing in the metro core of Vancouver Active Transportation Promotion: Promoting active transportation, reduce GHG emissions, and improve the road network such that the City can continue to track towards the Climate Emergency Action Plan target (by 2030, two thirds of all trips in Vancouver will be made by foot, bike or transit).</p>	Clean Transportation; Access to basic infrastructure	\$2,025,000	Q1 2023 (40%)	\$2,024,934	<p>Project planning underway across all active transportation and transit workstreams related to Big Move 2 in CEAP. In particular, the School Active Travel Program was expanded to help promote and encourage walking, cycling, and rolling to school. During the 2021-22 school year, the School Streets program was successfully expanded to five elementary schools. Additional pilot programs around walking school-buses were launched at three local schools. Delivery of the Ride the Road education cycling course grew from six to 37 schools annually. 20 Walk Bike Roll Mini Grants were distributed to local schools to further help promote walk, bike, roll initiatives.</p>
Seawall Maintenance Program	Park Maintenance, renewal and upgrade programs	<p>Vancouver has the world's longest uninterrupted waterfront path. The 28 km Seaside Greenway is an uninterrupted pathway, including the Stanley Park Seawall, that extends from the Vancouver Convention Centre to Spanish Banks Park. Perfect for a walk, cycle, or jog, it is the most popular recreational spot in the city. The Seawall is divided in to two clearly marked sections - one for walkers and joggers (closest to the water), and one for cyclists and inline skaters (inside path). The seawall is subject to seasonal battering, as well as large storms, which cause damage and deterioration to the structure. Vancouver Park Board did a comprehensive assessment of the seawall in 2013 and 2016 to identify and prioritize the work for this restoration project. The Stanley Park Seawall restoration project includes filling holes, replacing stone, stabilizing foundations, and installing material to protect against water erosion at priority locations between Brockton Point and Sunset Beach. With deep foundations and renewed surfacing, the restored seawall can withstand the tides for many years to come.</p>	Clean Transportation; Climate Change Adaptation	\$1,101,250	Q4 2023 (18%)	\$268,357	<p>Annual monitoring inspections of all seawall structures managed by Engineering (over 10km of seawall), including diving inspections. Completed assessment and monitoring of Cambie Sheetpile wall portion of seawall. Finished repairs to the Southeast False Creek amphitheatre (east of the Canoe Bridge in Olympic Village).</p>

Name	Title	Telephone	Email
Patrice Impey	Director of Finance and General Manager	604-873-7610	patrice.impey@vancouver.ca
Grace Cheng	Director, Long-Term Financial Strategy and Planning / Deputy City Treasurer	604-871-6654	grace.cheng@vancouver.ca
Anthony Tia	City Treasurer	604-873-7443	anthony.tia@vancouver.ca
Ileen Peng	Senior Analyst	604-873-7250	ileen.peng@vancouver.ca

Websites

General	https://vancouver.ca
Greenest City Action Plan	https://vancouver.ca/greenestcity
Climate Emergency Action Plan	https://vancouver.ca/climateemergency
Investors Relations (including Sustainability Bond Framework and Second Party Opinion)	https://vancouver.ca/your-government/investor-relations.aspx
Budgets and Finances	http://vancouver.ca/your-government/budgets.aspx
Vancouver Economic Commission	http://www.vancouvereconomic.com