



CITY OF ST. JOHN'S ENERGY PERFORMANCE CONTRACT

Honeywell

October 31, 2022

ST. JOHN'S
NEWFOUNDLAND AND LABRADOR, CANADA

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FIRM SELECTED, NEWFOUNDLAND EPCs

Honeywell Ltd: Motto: 'Our innovative technologies make the world cleaner, more sustainable, more secure, connected, energy efficient, and productive'. \$33B business in 4 divisions



SAFETY AND PRODUCTIVITY



PERFORMANCE MATERIALS AND TECHNOLOGIES



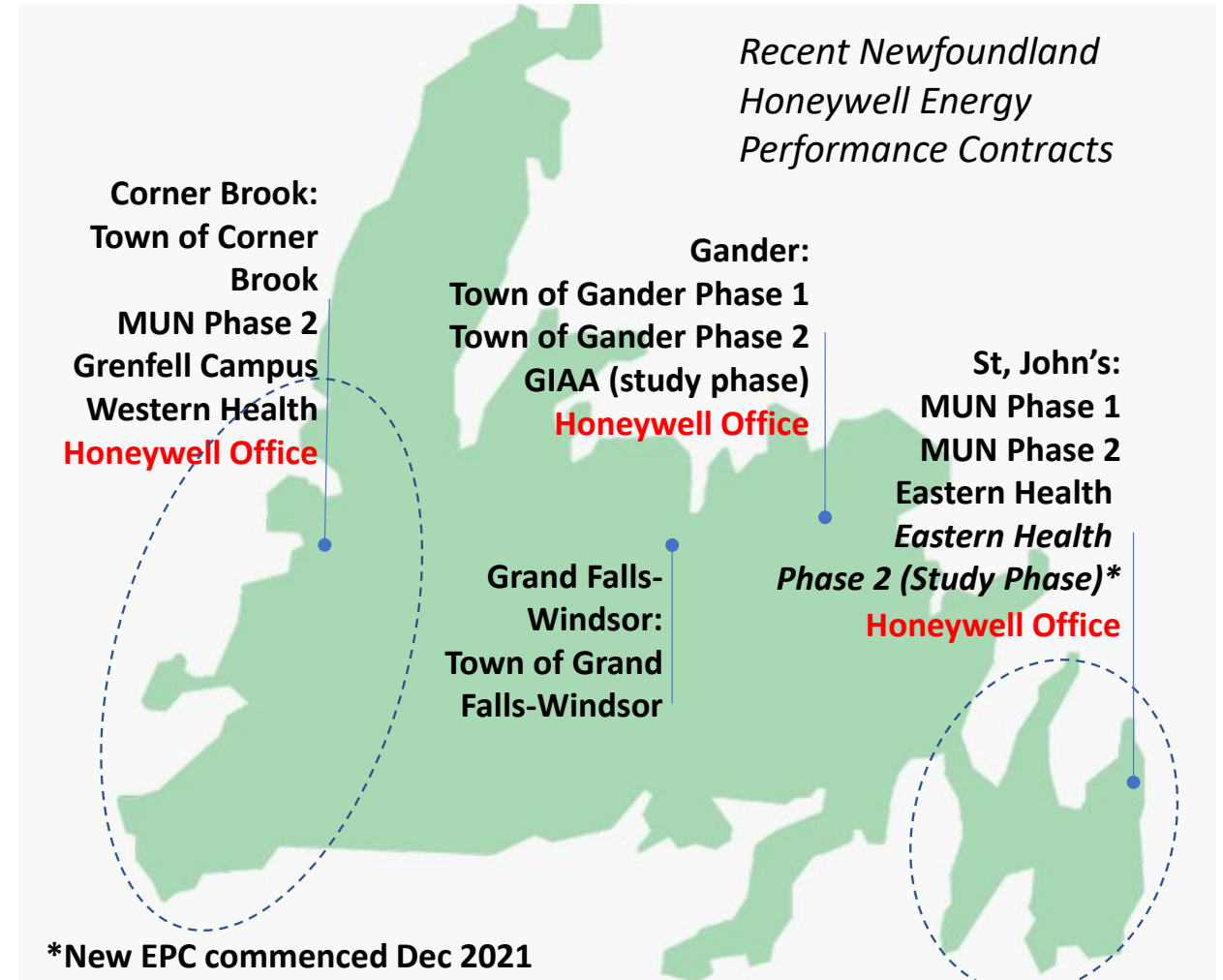
AEROSPACE



BUILDING TECHNOLOGIES

Over 100 years ago, we defined energy efficiency by automating indoor comfort. Today, we redefine it in more than 10 million buildings.

7,000+ EPCs saving \$6 B/Yr
22,800 Engineers worldwide
Operating as a Canadian ESCO since 1983 (1st at Twillingate Hospital, NL EPC)



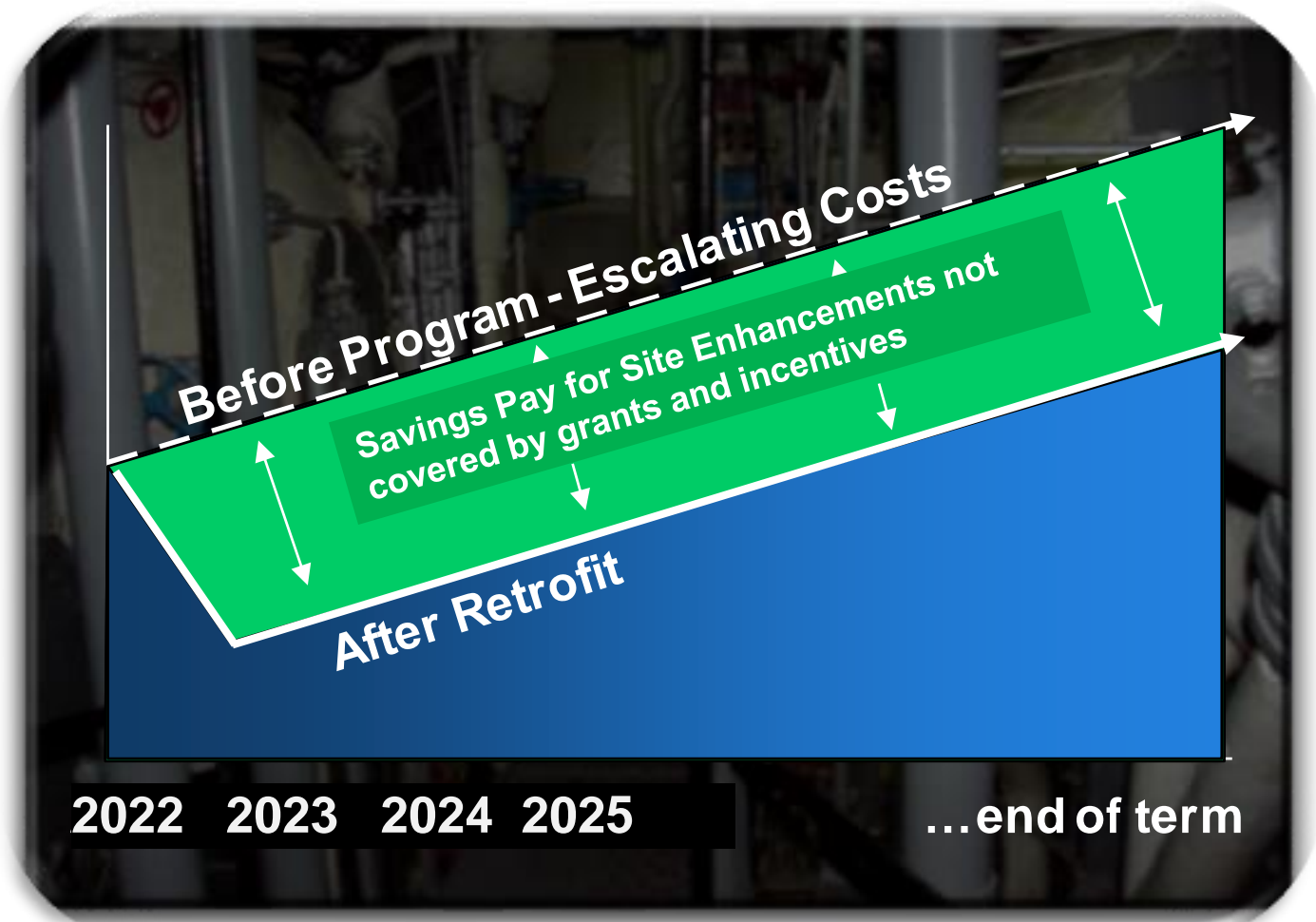
ENERGY PERFORMANCE CONTRACT (EPC)

DEFINITION

An EPC is a comprehensive self-funded program whereby the equipment and technology Honeywell installs to modernize assets and facilities will be paid by guaranteed energy and other savings, grants and incentives.

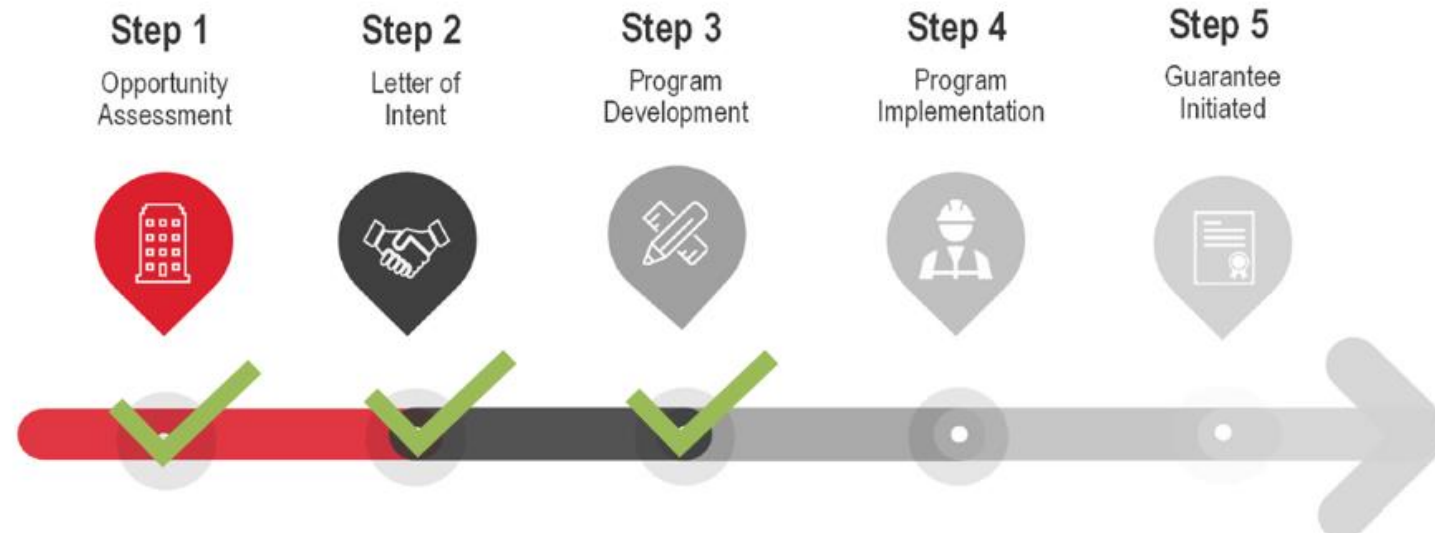
Requires close collaboration.

The City of St. John's & Honeywell have teamed to collaboratively develop the finance and technical components for a 'design/build/perform/guarantee' project.



EPC MILESTONE STEPS COMPLETED

- Competitive RFP carried out, Honeywell Energy Solutions Group selected
- Letter of Intent completed and signed to proceed to EPC solution development
- EPC solution development carried out with staff stakeholders from Corporate Buildings, Fire Stations, Process Plants (water, wastewater, waste management), Mary Brown's Centre and SJCC, and Recreation Programs
- EPC team worked with Federation of Canadian Municipalities (FCM), TakeChargeNL and Provincial Government to secure additional funding for the project
- Contract finalization under consideration, upon signature we proceed to implementation
- After implementation, Honeywell guarantees the savings for the 15 year finance term

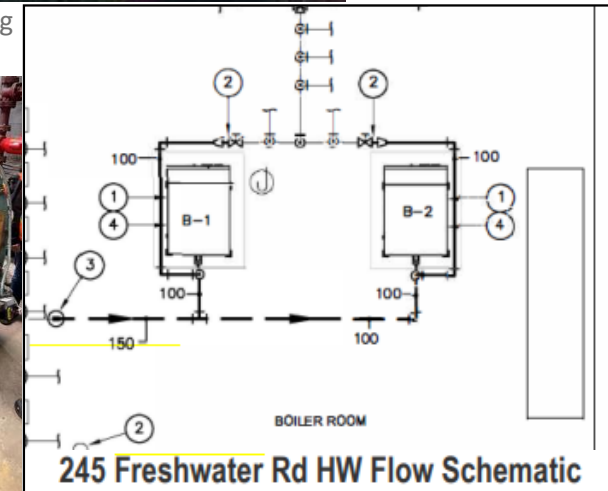


SCOPE CATEGORIES

- 1. Fuel switching** – installing an electric boiler to replace heating from an oil boiler provides multiple benefits including efficiency improvement across all seasons, it is now less expensive to heat a space with electricity than with oil, and this measure results in a large reduction in greenhouse gas emissions. Addresses deferred maintenance, replaces old boiler
 - *Examples Works Deport, Animal Control Centre, Buckmaster Centre* installation of an Electric Boiler and domestic hot water heater
- 2. Recommissioning Building Systems** – calibrate and/or replace sensors and bring system back to intended design
 - *Example City Hall* controls recommissioning and air balancing, modify sequence of operations
- 3. Expand Controls** – for energy efficient HVAC equipment, inclusion into existing Delta automation, better troubleshooting
 - *245 Freshwater* bring unit heaters, running uncontrolled, heating unoccupied areas under efficient control
- 4. Continuous Commissioning Tool** – every 15 minutes selected HVAC system operations will be optimized all year



Recommissioning & Air Balancing



Controls & Fuel Switch

SCOPE CATEGORIES

5. **Air Infiltration Mitigation** – carry out sealing measures for roof/wall, door and other gaps in a facility to avoid cold air infiltration and warm air exfiltration
 - *Bay Bulls Water Treatment Plant*, built in the 1970s will have all gaps will be sealed
6. **Heat Recovery** – to collect waste heat from mechanical systems for use elsewhere in the facility
 - *Riverhead Water Treatment Plant* – recovering heat from 17 Air Handling Units and Exhaust Fans
7. **Lighting conversion to LED** results in improved lighting provided with less energy using LED technology
 - *Example Mary Brown's Centre* – multiple fluorescent lighting technologies operating at 2 different voltages will be replaced with LED, providing a new standard



Air Infiltration Mitigation



Riverhead Air Exhaust Heat Recovery



Troffer/T8 Fluorescent/4 ft/32.0W/2 Lamp

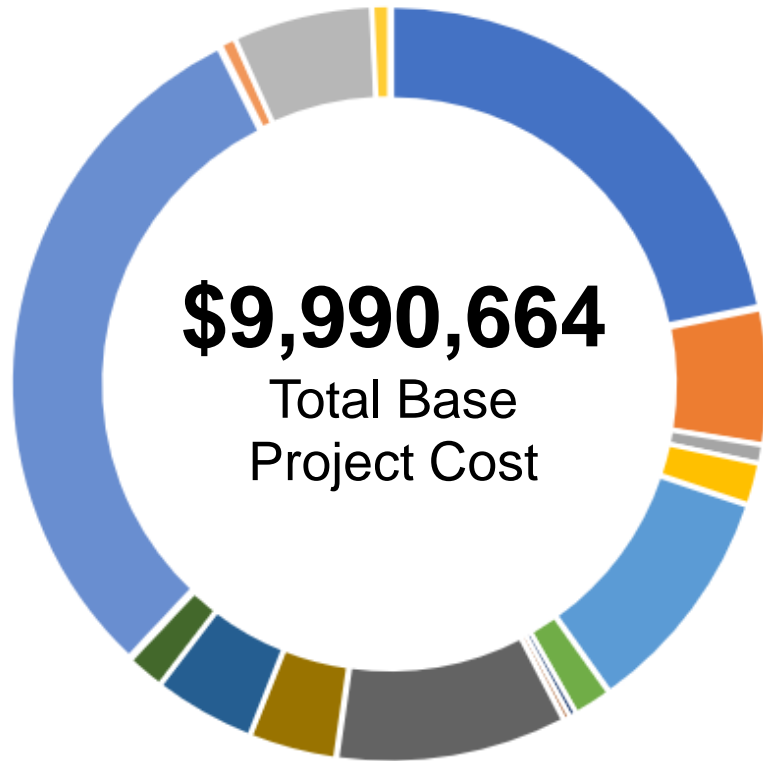
SCOPE CATEGORY ALLOCATION BY FACILITY

Facility	Lighting LED	Fuel Switching (full or partial)	Recommissioning Building Systems	Continuous Commissioning Tool	Expand Controls	Air Infiltration Mitigation	Heat Recovery in MUA Units
Works Depot	x	x	x	x		x	
City Hall	x		x			x	
City Hall Annex	x		x			x	
245 Freshwater Rd	x	x*	x		x	x	
Animal Shelter	x	x	x			x	
Central Fire Station	x		x			x	
West End Fire Station	x		x				
Paradise Fire Station	x		x				
Buckmaster Rec. Centre	x	x				x	
Winsor Lake WTP	x		x			x	
Bay Bulls Big Pond	x					x	
Petty Harbour WTP	x						
Riverhead WWTP	x		x			x	x
Robin Hood Bay	x					x	
Mary Brown Centre & SCC	x					x	
Bowring Park Locker and Day Camp					x		

*Note: this measure is dependent on confirmation from an additional grant application to FCM Net-Zero Pathways Capital + Grant program.

SCOPE PROPORTION BY FACILITY

"BASE PROJECT", ASSUMING FCM CAPITAL GRANT NOT AWARDED



\$6,320,236
City Component

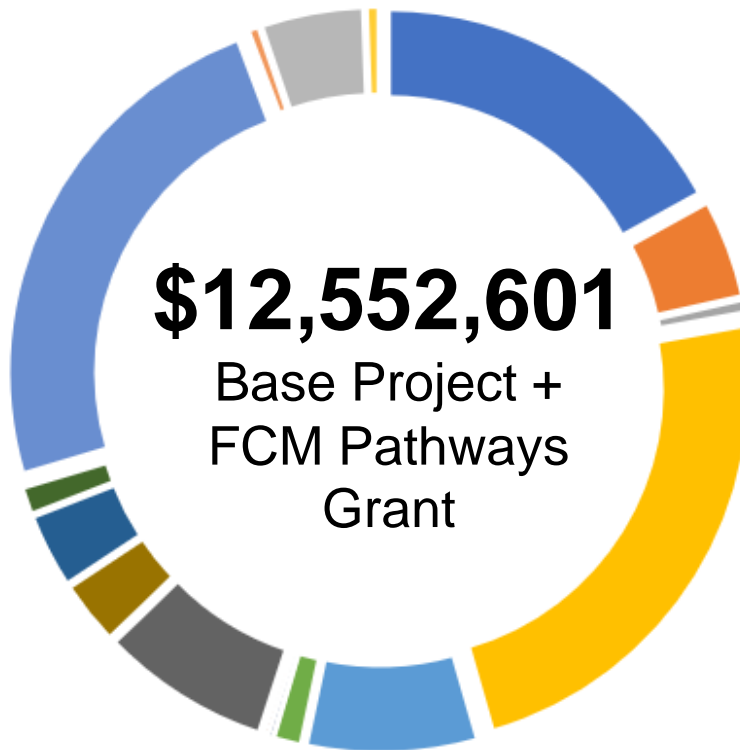
Facility Key:

- Works Depot
- Animal Shelter
- Buckmaster Rec. Centre
- Riverhead WWTP
- City Hall
- Central Fire Station
- Winsor Lake WTP
- Robin Hood Bay
- 245 Freshwater Rd
- Paradise Fire Station
- Petty Harbour WTP
- Bowring Park
- City Hall Annex
- West End Fire Station
- Bay Bulls Big Pond
- Mary Brown's Ctr, SJCC

Facility	Cost/ Facility	Total Grants, incentives, funding	Savings/ Facility
Works Depot	\$ 2,177,738	\$ 377,110	\$ 154,764
City Hall	\$ 578,488	\$ 37,481	\$ 31,713
City Hall Annex	\$ 78,134	\$ 6,474	\$ 4,641
245 Freshwater Rd	\$ 179,449	\$ 9,132	\$ 19,399
Animal Shelter	\$ 997,677	\$ 627,798	\$ 13,710
Central Fire Station	\$ 163,089	\$ 10,479	\$ 15,494
West End Fire Station	\$ 30,820	\$ 2,295	\$ 3,120
Paradise Fire Station	\$ 24,990	\$ 1,860	\$ 2,622
Buckmaster Rec. Centre	\$ 991,485	\$ 662,692	\$ 13,455
Winsor Lake WTP	\$ 374,533	\$ 26,200	\$ 10,644
Bay Bulls Big Pond	\$ 436,232	\$ 39,249	\$ 35,494
Petty Harbour WTP	\$ 161,819	\$ 15,734	\$ 10,330
Riverhead WWTP	\$ 3,060,437	\$ 1,795,394	\$ 134,141
Robin Hood Bay	\$ 64,676	\$ 4,741	\$ 4,540
Mary Brown's Ctr, SJCC	\$ 597,331	\$ 50,512	\$ 33,789
Bowring Park	\$ 73,768	\$ 3,278	\$ 4,206
Total	\$ 9,990,665	\$ 3,670,428	\$ 492,062
Note: Tax included			

SCOPE PROPORTION BY FACILITY

FULL PROJECT, ASSUMING FCM CAPITAL GRANT IS AWARDED



\$6,661,630
City Component

Facility Key:

- Works Depot
- City Hall Annex
- Animal Shelter
- West End Fire Station
- Buckmaster Rec. Centre
- Bay Bulls Big Pond
- Riverhead WWTP
- Mary Brown's Ctr, SJCC
- City Hall
- 245 Freshwater Rd
- Central Fire Station
- Paradise Fire Station
- Winsor Lake WTP
- Petty Harbour WTP
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Facility	Cost/ Facility	Total Grants, incentives, funding	Savings/ Facility
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City Hall	\$ 578,488	\$ 37,481	\$ 31,713
City Hall Annex	\$ 78,134	\$ 6,474	\$ 4,641
245 Freshwater Rd	\$ 2,741,386	\$ 2,229,675	\$ 45,251
Animal Shelter	\$ 997,677	\$ 627,798	\$ 13,710
Central Fire Station	\$ 163,089	\$ 10,479	\$ 15,494
West End Fire Station	\$ 30,820	\$ 2,295	\$ 3,120
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Mary Brown's Ctr, SJCC	\$ 597,331	\$ 50,512	\$ 33,789
Bowring Park	\$ 73,767	\$ 3,278	\$ 4,206
Total	\$ 12,552,601	\$ 5,890,971	\$ 517,914
Note: Tax included			

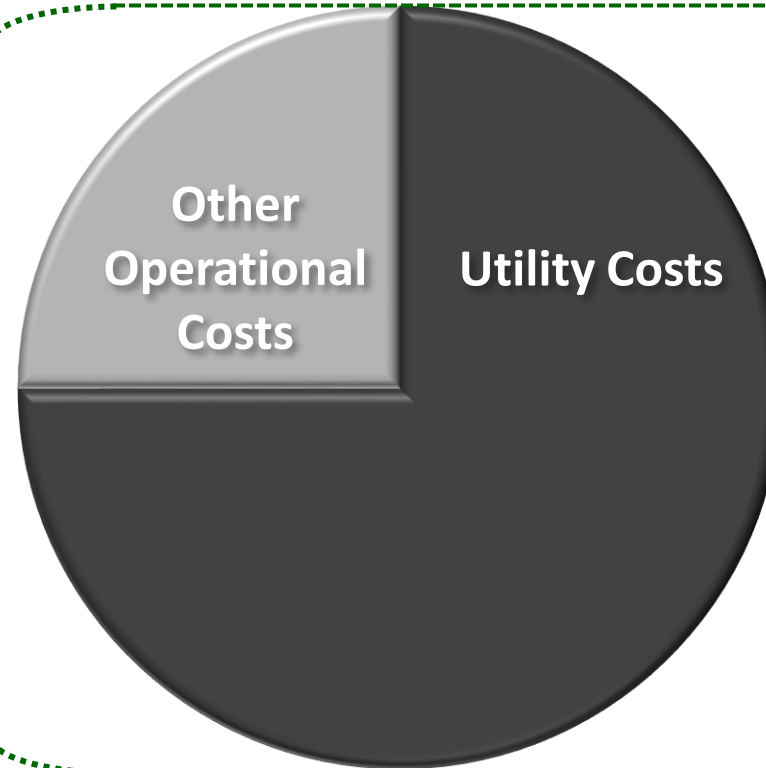
ST. JOHN'S EPC SAVINGS CASHFLOW

BUDGET NEUTRAL

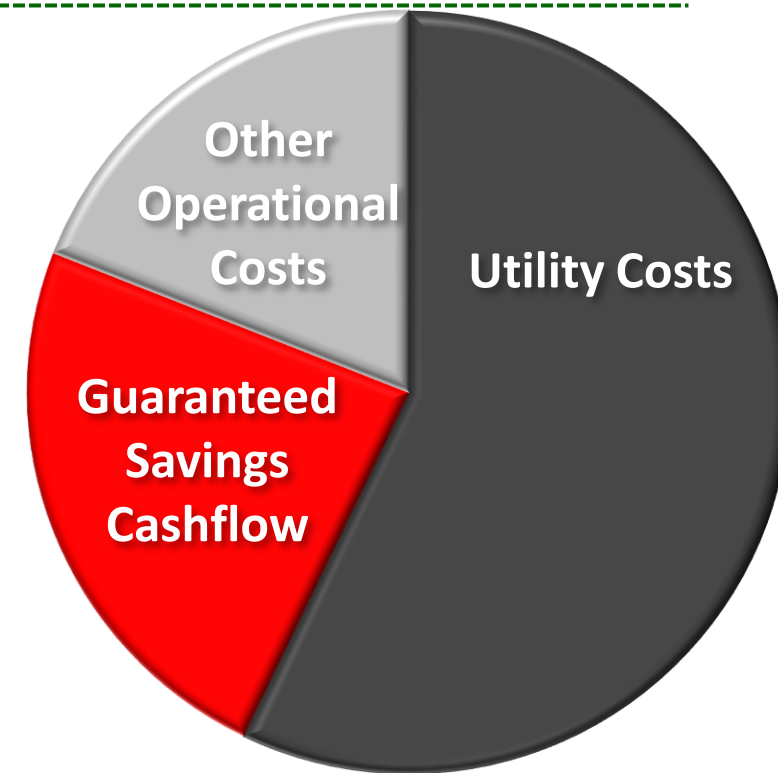
Before and after the EPC,
St John's budget remains
net neutral

- Project guaranteed to cover capital and financing costs by Honeywell
- Departments net utility and material operating budgets guaranteed to remain net neutral
- Guaranteed Savings Cashflow across departments make up financing payments. Each Department would simply contribute their estimated and proven savings per year
- Measurement and Verification carried out yearly and included in presented payback period

CURRENT, PRE-EPC OPERATING BUDGET



AFTER EPC, IMPROVEMENTS



FINANCING – GRANTS AND INCENTIVES

The Energy Performance Contract attracts multiple grants and incentives that reduce the total project cost.

\$3.7M from approved, awarded and other funding grants include:

- Climate change Challenge Fund (CCCF) awarded (\$3.1M) for reduction of greenhouse gas emissions
- Newfoundland Power study incentives are approved, and rebates will be received for electrical savings (\$306k)
- City of St John's City Hall Energy Audit 2021 Capital (\$100k)
- FCM Feasibility grant submitted, being approved (\$200k) to help pay for the very comprehensive feasibility study being completed

Next targeted grant: City of St John's will also apply for FCM Pathway to NetZero Capital grant, if awarded will provide a 25% grant and a low interest loan retroactively to the project.

With award of FCM's grant, collective grants will cover 47% of total project cost.



[Environment and Climate Change](#) > [Climate Change](#) > [Low Carbon Economy Programs](#) > [Climate Change Challenge Fund \(CCCF\)](#)

Climate Change Challenge Fund (CCCF)



FINANCING THE BASE PROJECT

The base \$9.99M project includes tax and all costs and is financed as follows:

- \$3,670,427 from grants incentives and other funding as described
- \$6,320,236 to be financed from energy performance contract savings in under 15 years from guaranteed utility and other operational costs. City financing will entail a bond, unless the FCM low interest loan is awarded (expected in 8 months) and proves to be a better financing vehicle

Source	Type	Amount
Climate Change Challenge Fund Grant (CCCCF)	Grant	\$3,110,577 (awarded)
City Hall Energy Audit 2021 Capital	Previously Allocated Capital	\$100,000 (approved)
TakeCHARGE Audit and Feasibility Grants	Grant	\$144,000 (awarded)
FCM Feasibility Study Grant	Grant	\$200,000 (submitted)
TakeCHARGE retrofit rebates Grants	Grant	\$116,000 (TBC)
Sub-total Grants:		\$3,670,427
Total Project Cost: (not including 245 Freshwater Fuel Switching)		\$9,990,664
St. John's Capital:		\$6,320,236



FINANCING WITH FCM CAPITAL/LOAN AWARDED

The City is applying for the FCM Pathway to NetZero funding project for the Base project scope and for the 245 Freshwater fuel-switching boiler electrification measure.

Consultation with the Honeywell grant pursuit team and the City’s own resources, this FCM grant is looking quite achievable. It includes a 25% grant toward the scope that reduces greenhouse gas emissions. It also provides a low interest loan for the remaining 75% of this scope. See table below for full project financing:

Source	Type	Amount
Climate Change Challenge Fund Grant (CCCCF)	Grant	\$3,110,577 (awarded)
City Hall Energy Audit 2021 Capital	Previously Allocated Capital	\$100,000 (approved)
TakeCHARGE Audit and Feasibility Grants	Grant	\$144,000 (awarded)
FCM Feasibility Study Grant	Grant	\$200,000 (submitted)
TakeCHARGE retrofit rebates Grants	Grant	\$116,000 (TBC)
FCM Pathway to Net-Zero	Grant	\$2,220,544 (TBC)
Sub-total Grants:		\$5,890,971
Total Project Cost: (including 245 Freshwater Fuel Switching)		\$12,552,601
St. John’s Capital (through FCM Pathway to Net-Zero Capital program):		\$6,661,630

CLIMATE COMMITMENT ACHIEVEMENT

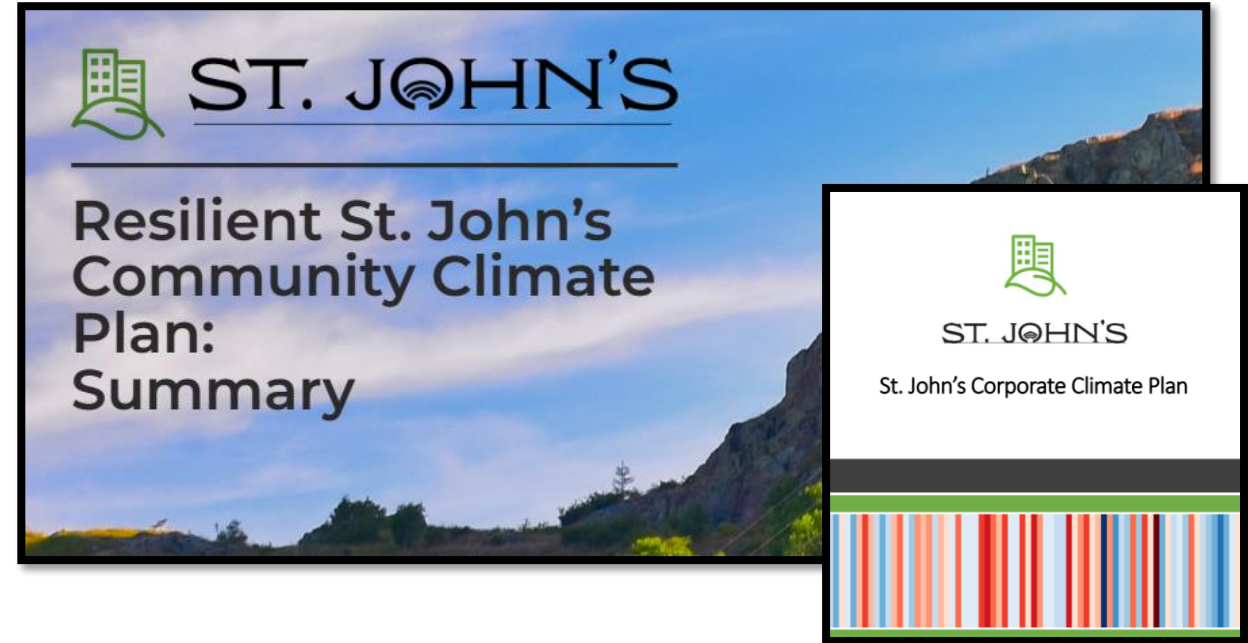
City of St John's Corporate Climate commitment:

- 40% reduction by 2030 and stretch target of 50% by 2030 from 2018 emissions.
- Net-zero by 2050 at the latest.

The EPC Full Project, will reduce the City's greenhouse gas emissions by up to 1,118 tonnes CO₂e

- 11% reduction of Corporate GHG emission
- 1/4 of the City's 2030 Corporate commitment to reduce emissions by 40% from the 2018 baseline;
- With this project, the provincial efforts to implement a low-carbon electricity grid, and improved new city buildings the City is on track to achieve over 70% of its 2030 target before 2025.
- This progress is expected to attract yet more grants

The EPC will further the City's "leadership by example" role in the implementation of the Resilient St. John's Community Climate Plan



Retrofit Existing Buildings

12. Retrofit existing homes and buildings on a mass scale, and then switch to electric heat pumps and water heaters to achieve net-zero or net-zero ready.

SOLUTION DEVELOPMENT TEAM

Honeywell Team Org. Chart City of St. John's Energy Performance Contract

