Agenda – Executive Policy Committee – September 21, 2023

Report – Standing Policy Committee on Water, Waste and Environment – September 8, 2023

Item No. 2 Retrofits to Reduce Carbon Tax Payment Obligations

STANDING COMMITTEE RECOMMENDATION:

On September 8, 2023, the Standing Policy Committee on Water, Waste and Environment concurred in the recommendation of the Winnipeg Public Service and recommended to Council:

1. That the Public Service develop a building emissions reduction strategy to reduce energy and carbon in City buildings and report back to Council in Q3 2024, including:

    A. Asset Management Assessment and Prioritization Approach;

    B. Funding and Resource Requirements;

    C. Implementation Plan.

2. That delegated authority be provided to the Chief Administrative Officer to apply for and accept external grants and enter into partnerships and agreements to support implementation of a building emissions reduction strategy.

3. That the Proper Officers of the City be authorized to do all things necessary to implement the intent of the foregoing.

Agenda – Executive Policy Committee – September 21, 2023

Report – Standing Policy Committee on Water, Waste and Environment – September 8, 2023

DECISION MAKING HISTORY:

STANDING COMMITTEE RECOMMENDATION:

On September 8, 2023, the Standing Policy Committee on Water, Waste and Environment concurred in the recommendation of the Winnipeg Public Service and submitted the matter to the Executive Policy Committee and Council.

COUNCIL DECISION:

On May 30, 2023, Council concurred in the recommendation of the Standing Policy Committee on Water, Waste and Environment and adopted the following:

1. That the Winnipeg Public Service be directed to report back to the Standing Policy Committee on Water, Waste and Environment at its September 8, 2023 meeting on the following:

    A. Provide a breakdown of projected carbon tax payments for the City of Winnipeg from 2023 – 2028 (inclusive), based on the projected increases in federal carbon tax rates.

    B. Identify the City of Winnipeg structures where retrofits could reduce carbon tax payment obligations in the most cost-efficient manner, including the following:

        i. Considerations for levels of services issues, asset renewal, and reliability.

        ii. A listing of up to 15 sites and/or $80 million in retrofit investments.

2. That the Proper Officers of the City be authorized to do all things necessary to implement the intent of the foregoing.

ADMINISTRATIVE REPORT

Title: Retrofits to Reduce Carbon Tax Payment Obligations

Critical Path: Standing Policy Committee on Water, Waste, and Environment – Executive Policy Committee – Council

AUTHORIZATION

Author	Department Head	CFO	CAO
B. Raddatz B. Erickson	T. W. Shanks G. K. Patton	N/A	M. Jack

EXECUTIVE SUMMARY

This report provides a breakdown of projected carbon tax payments for the City of Winnipeg from 2023 to 2028 and 2023 to 2030 (inclusive). The breakdown is based on scheduled increases in federal carbon tax rates. The minimum national price on carbon pollution in 2023 is $65 per tonne of carbon dioxide equivalent (CO_2e). The projected carbon tax payments for the City of Winnipeg from 2023 to 2028 and 2023 to 2030 (inclusive) are $69.98 million and $109.15 million respectively. The City of Winnipeg pays carbon tax on the fossil fuel it uses for transportation, heating of buildings, equipment, machinery and backup power generation. Buildings represent approximately 39 percent of the City of Winnipeg's overall projected carbon tax payments to 2028 at $27.29 million. The minimum national price on carbon pollution is scheduled to rise, reaching $170 per tonne in 2030. This will add another $15.27 million in projected carbon tax payments for buildings for 2029 to 2030 (inclusive).

There are 15 City of Winnipeg buildings identified where retrofits could reduce carbon tax payment obligations. Approximately $50.6 million in retrofit investments are identified at a Class 5 level. These investments would reduce the City of Winnipeg's projected carbon tax payments by $9.2 million for buildings cumulative from 2023 to 2030, from $42.56 to $33.36 million.

The buildings identified represent a small part of the City's portfolio. Many buildings require retrofit investments to maintain existing levels of services and increase performance. A strategic approach to the City's overall buildings portfolio through the development of a building emissions reduction strategy can leverage investments to realize additional long-term energy and carbon savings.

RECOMMENDATIONS

1. That the Public Service develop a building emissions reduction strategy to reduce energy and carbon in City buildings and report back to Council in Q3 2024, including:

    A. Asset Management Assessment and Prioritization Approach;
    B. Funding and Resource Requirements;

C. Implementation Plan.

2. That delegated authority be provided to the Chief Administrative Officer to apply for and accept external grants and enter into partnerships and agreements to support implementation of a building emissions reduction strategy.

3. That the Proper Officers of the City be authorized to do all things necessary to implement the intent of the foregoing.

REASON FOR THE REPORT

On May 1, 2023, the Standing Policy Committee on Water, Waste and Environment concurred in the Council Motion of April 27, 2023 and recommended to Council:

1. That the Winnipeg Public Service be directed to report back to the Standing Policy Committee on Water, Waste and Environment at its September 8, 2023 meeting on the following:

    a. Provide a breakdown of projected carbon tax payments for the City of Winnipeg from 2023 – 2028 (inclusive), based on the projected increases in federal carbon tax rates.
    b. Identify the City of Winnipeg structures where retrofits could reduce carbon tax payment obligations in the most cost-efficient manner, including the following:
        i. Considerations for levels of services issues, asset renewal, and reliability.
        ii. A listing of up to 15 sites and/or $80 million in retrofit investments.

IMPLICATIONS OF THE RECOMMENDATIONS

There are no implications associated with the recommendations of this report. Financial implications will be detailed as part of the building emissions reduction strategy.

HISTORY/DISCUSSION

Buildings represent one of the largest sources of greenhouse gas (GHG) emissions in Winnipeg. Most building emissions come from the use of natural gas for heating purposes. City of Winnipeg facilities account for 34 percent of overall energy use and 21 percent of emissions.

OurWinnipeg 2045 sets out the City's climate target of net zero emissions by 2050 which aligns with federal and international targets. The Community Energy Investment Roadmap (CEIR) identifies City and community-wide systems level actions and investments to achieve this updated target. Council directed the Public Service to implement CEIR in July 2022.

The pathway to net zero emissions takes a 'reduce, improve, switch' framework to transitioning to zero emissions energy systems. This approach looks at reducing the need for energy inputs, improving the energy performance of existing systems and then switching to zero emissions options. This improves performance, while reducing the overall load on electrical and other

energy systems during the transition to net zero. Overall need for electricity can be supplemented by local production, such as solar photovoltaic (PV) systems.

To reach net zero emissions by 2050, CEIR identifies actions for new and existing institutional, commercial and industrial (ICI) buildings. These actions include the need for all new ICI buildings to be substantially more efficient and electric by 2050. All existing ICI buildings will need to be retrofitted to increase efficiency by 50 percent by 2050 and use electric heat pumps for space heating and cooling. The CEIR includes measurable targets that are a result of the modelled actions and can be used to track progress towards the overall sector emissions reduction plan.

Zero carbon energy opportunities have been included as part of the Strategic Priorities Action Plan for 2023 to 2027 (Actions 4.6+4.7) adopted by Council on May 30, 2023. CEIR identifies that as of 2031, all new ICI buildings will require at least 50 percent of their annual load covered by solar PV. Installation of solar PV on existing buildings will be required to achieve on average 50 percent of the building electric load, scaling up to 50 percent of existing buildings by 2050. There are four location types that should be considered for solar power generation, including new buildings, deep energy retrofits, major additions and renovations. Futureproofing is also an important consideration when planning for these location types. Solar PV can be considered as part of retrofit investments on a case-by-case basis to maximize energy and carbon savings.

Projected Carbon Tax Payments for the City of Winnipeg

The minimum national price on carbon pollution was initiated in 2019. In 2023, the minimum national price on carbon pollution is $65 per tonne.

The City of Winnipeg uses fossil fuels for transportation, heating of buildings, equipment, machinery and backup power generation. The projected overall carbon tax payments for the City of Winnipeg from 2023 to 2028 and 2023 to 2030 (inclusive) are $69.98 million and $109.15 million respectively. These carbon tax payments cover fossil fuels tracked as part of the City's Annual Corporate GHG Inventory. The projected carbon tax payments for buildings represent approximately 39 percent at $27.29 million. The minimum national price on carbon pollution is scheduled to increase by $15 per year to $170 per tonne in 2030, adding another $15.27 million in projected carbon tax payments for buildings for 2029 to 2030 (inclusive).

Table 1: Projected Carbon Tax Payments for the City of Winnipeg (2023 – 2030)

Year	Minimum Carbon Pollution Price ($/tonne CO2e)	Carbon Tax Payments - Buildings	Carbon Tax Payments - Overall (Including Buildings)
2023	$65	$2.7M	$6.93M
2024	$80	$3.42M	$8.77M
2025	$95	$4.16M	$10.66M
2026	$110	$4.9M	$12.57M
2027	$125	$5.67M	$14.53M
2028	$140	$6.44M	$16.52M
TOTAL (2023 – 2028)		**$27.29M**	**$69.98M**
2029	$155	$7.23M	$18.55M
2030	$170	$8.04M	$20.62M

TOTAL (2029 – 2030)	**$15.27M**	**$39.17M**
CUMULATIVE TOTAL (2023 – 2030)	**$42.56M**	**$109.15M**

Retrofit Investments for City of Winnipeg Buildings

The Public Service identified 15 buildings where retrofit investments could reduce carbon tax payment obligations in the most cost-efficient manner (Table 2). The list is based on considerations for levels of services issues, asset renewal and reliability. Priority has been given to buildings with the highest potential for significant savings and long-lasting benefits. Through the application of an asset management lens, additional consideration was given to building condition and age of equipment.

Several buildings on the list have equipment that has reached the end of service life. Maintenance intervention has allowed for continued functioning of this equipment. In many cases, equipment upgrades are required in the short term to maintain existing levels of service and reliability. Combining upgrades with retrofit investments maximizes energy and carbon savings. Through investment in energy efficient and net zero emissions options, potential cost savings can be realized through reduced carbon tax, energy consumption and maintenance requirements.

The cost of retrofit investments identified is based on a Class 5 estimate in 2023 dollars. This includes approximately $50.6 million in retrofit investments, with an estimated total carbon tax and utility cost savings (cumulative from 2023 to 2030) of $9.2 million. These savings assume project completion in 2023. Although the estimated cost for some buildings is higher while the carbon savings are lower, this list includes prioritization for replacement and upgrading of equipment at the end of its service life. Estimated annual carbon tax and total utility cost savings have been included, with a two percent escalation in natural gas and electrical utility costs factored into the latter. 2030 was selected as the year to display for estimated carbon tax and total utility cost savings as this represents the highest cost year.

These retrofit investments were determined on a case-by-case basis and consist of one or a combination of energy and carbon saving projects. Investments include heat recovery installation, boiler replacement, building air leakage testing and repair, fresh air/ventilation system recalibration, air handling unit replacements, solar wall installation, window, walls and roof upgrades, replacement of motors and pumps, installation of LED lighting, installation of lighting control and updated building controls.

Table 2: Estimated Cost of Retrofit Investments, Carbon, Carbon Tax and Utility Cost Savings

Building	Cost of Retrofit Investments	Carbon Savings (Tonnes)	Carbon Tax Savings	Utility Cost Savings	Carbon Tax + Utility Cost Savings
Animal Services Agency (1057 Logan Ave.)	$250K	20	$3.5K	$5.1K	$8.6K
Civic Centre Complex (510 Main St.)	$8M	201	$34.2K	$95.9K	$130.1K
Confederation Building (457 Main St.)	$50K	40	$6.8K	$7K	$13.8K
Eldon Ross Pool (1887 Pacific Ave. W)	$5M	5	$0.8K	$5K	$5.8K
Eric Coy Arena (535 Oakdale Dr.)	$5M	19	$3.3K	$8.4K	$11.7K
Fort Garry Library (1360 Pembina Hwy.)	$1M	6	$1.1K	$1.7K	$2.8K
Mandarin Building (185 King St.)	$250K	43	$7.4K	$19.6K	$27K
North End Sewage Treatment Plant (2230 Main St.)	$5M	1320	$224K	$279K	$503K
Pan Am Pool (25 Poseidon Bay)	$5M	185	$31.4K	$49.6K	$81K
Public Works East Yards Complex (960 Thomas Ave.)	$5M	81	$13.7K	$31K	$44.7K
Public Works & Water and Waste (1155 & 1199 Pacific Ave.)	$5M	56	$9.5K	$26.9K	$36.4K
St. James-Assiniboia Library (1910 Portage Ave.)	$1M	14	$2.3K	$3.9K	$6.2K
WFPS Station 23 (880 Dalhousie Dr.)	$1M	20	$3.5K	$6.9K	$10.4K
Winnipeg Transit Fort Rouge Garage (421 Osborne St.)	$1M	160	$26.8K	$170.5K	$197.3K
WPS Police Headquarters (245 Smith St.)	$8M	565	$95.9K	$181.1K	$277K
TOTAL COST OF RETROFIT INVESTMENTS	**$50.6M**	-	-	-	-
TOTAL (2030)	-	**2,735**	**$464K**	**$892K**	**$1.356M**
CUMULATIVE TOTAL (2023 – 2030)	-	**21,880**	**$2.5M**	**$6.7M**	**$9.2M**

Strategic Approach to Energy and Carbon

These 15 buildings are a small part of the City's portfolio. Many City buildings require retrofit investments to maintain existing levels of service and increase performance. A strategic approach to the City's overall buildings portfolio can leverage investments to realize additional long-term energy, maintenance, and carbon savings, as well as reduce the risk of service interruptions. This strategic approach would be detailed as part of a building emissions reduction strategy and could include:

- Asset Management Assessment and Prioritization
- Funding and Resource Identification
- Performance Implementation
- Tracking and Reporting

These measures would be further detailed as part of a strategy to support a predictable pathway in the decarbonization of City buildings. Development of the building emissions reduction strategy would lay the foundation for energy efficiency in new and existing City buildings.

Retrofit Financing and Funding Opportunities

There are multiple streams of financing and funding available as part of the Federal Government's target to reduce emissions by 40 to 45 percent below 2005 levels by 2030 and put Canada on a path to achieve net zero emissions by 2050. The Federal Government is currently developing a national net zero by 2050 buildings strategy. The Canada Green Buildings Strategy will build off existing initiatives and set out new policy, programs, incentives and standards needed to drive a massive retrofit of existing building stock and construction to the highest zero carbon standards. Additional investments have also been made by the Federal Government to support the acceleration of retrofits and net zero new builds in communities across Canada.

Examples of retrofit financing and funding opportunities include the Community Buildings Retrofit Initiative through the Federation of Canadian Municipalities and the Commercial Deep Energy Retrofit and Energy Audit Programs through Efficiency Manitoba. The City of Winnipeg could also consider the implementation of a building reserve fund, where energy and operational savings are deposited to fund future retrofit investments. Accessing these streams of financing and funding (and others, as applicable) would form part of the strategic approach to the building emissions reduction strategy.

FINANCIAL IMPACT

Financial Impact Statement **Date:** July 26, 2023

Project Name:

Retrofits to Reduce Carbon Tax Payment Obligations

COMMENTS:

There are no financial implications associated with the recommendations of this report.

Lucy Szkwarek, CPA, CGA
Lucy Szkwarek, CPA, CGA
Manager of Finance and Administration

CONSULTATION

This Report has been prepared in consultation with:

OURWINNIPEG POLICY ALIGNMENT

This report is in accordance with OurWinnipeg 2045 through:

OurWinnipeg Goal: Leadership and Good Governance

- Objective:
    - Establish and implement priority actions through evidence-informed decision-making processes.
- Policies:
    - 1.3 Integrated Service Planning and Outcomes
        - Advance operational plans that align with this Plan's sustainability goals through responsive, innovative and integrated government leadership.
    - 1.4 Integrated Knowledge and Resources
        - Coordinate inter-departmental systems, projects and resources, making the best use of internal and external expertise to better understand service needs, find the most appropriate solutions, optimize resources and maximize community outcomes.
    - 1.7 Equitable Service Access
        - Identify and provide access to a base level of municipal services to everyone, directly or facilitated through partnerships. Remove systemic barriers to participation, based on race, national or ethnic origin, colour, religion, age, sex, sexual orientation, gender identity or expression, marital status, family status, physical or mental ability, official language used, citizenship status, socio-economic status, geographic location or climate change vulnerabilities.

OurWinnipeg Goal: Environmental Resilience

- Objective:
    - Promote low-carbon energy efficient buildings through low-energy building design, construction and retrofitting.
- Policies:
    - 2.1 Climate Action Targets
        - Meet and exceed greenhouse gas emissions reduction targets of 20 percent by 2030, relative to 2011, and net zero by 2050, by working towards partnerships with the community, businesses, and government bodies including Indigenous, Federal and Provincial governments.
    - 2.3 Climate Action Leadership
        - Demonstrate municipal environmental leadership through an integrated, proactive organizational culture that applies innovative practices, including piloting new initiatives and evaluating and sharing results to

eliminate the use of fossil fuels and enhance climate resilience in the built and natural environment.

- 2.12 Eliminate Fossil Fuel Dependence
  - Reduce greenhouse gas emissions from existing and new buildings, including municipally-owned buildings and facilities, and associated infrastructure, through the promotion of renewable energy sources; energy efficiency use and performance measures; and low-carbon construction, retrofit and demolition methods that maximize the lifecycle of buildings.

WINNIPEG CLIMATE ACTION PLAN ALIGNMENT

This report is in accordance with the Winnipeg Climate Action Plan (WCAP) as per Strategic Opportunity #1, Corporate Leadership, Direction 1.3 *Implement Low Carbon and Energy Efficient City Facilities* (p.29).

This report is also in accordance with Strategic Opportunity #5, Low Carbon and Energy Efficient Buildings, Direction 5.1 *Increase Energy Performance of Existing Buildings* (p.46).

WINNIPEG POVERTY REDUCTION STRATEGY ALIGNMENT

This report is in accordance with the Poverty Reduction Strategy through:

Poverty Reduction Strategy Goal: All City Services are Equitable, Inclusive and Accessible

- Objectives
  - Residents have equitable access to City services, in particular demographic groups who experience marginalization.
  - Community development models and collaborative approaches are enhanced or initiated for service planning and delivery in areas of higher poverty.
  - Use of City tools and resources are maximized to reduce systemic inequities.

SUBMITTED BY

Department: Assets and Project Management / Water and Waste
Division: Municipal Accommodations / Office of Sustainability
Prepared by: M. Chatfield, Energy Analyst / J. Harper, Green Buildings Specialist
Date: August 2, 2023
File No: MA2023-001 / A-012