

**Agenda – Standing Policy Committee on Finance and Economic Development –  
April 28, 2023**

**REPORTS**

**Item No. 3                      Transition to Zero-Emission Buses  
Project ID: 4210000221, 4210000222, 4210000223  
Quarterly Project Status Report No. 01  
For the Period Ended February 28, 2023**

**WINNIPEG PUBLIC SERVICE RECOMMENDATION:**

1. That the financial status of the Transition to Zero Emission Buses (“the Project”), as contained in this report, be received as information.
2. That quarterly reporting be suspended and the next reporting on the Transition to Zero-Emission Buses occur in 2023 Q4 given the nature of the program being a multi-year bus acquisition initiative rather than a traditional infrastructure project. The project reporting schedule would be as identified in the Major Capital Projects Reporting Schedule.

# ADMINISTRATIVE REPORT

**Title:** Transition to Zero-Emission Buses  
Project ID: 4210000221, 4210000222, 4210000223  
Quarterly Project Status Report No. 01  
For the Period Ended February 28, 2023

**Critical Path:** Standing Policy Committee on Finance and Economic Development

## AUTHORIZATION

Author	Department Head	CFO	CAO
J. Crowder	G. Ewankiw	J. Speidel, acting for C. Kloefer	M. Jack

## EXECUTIVE SUMMARY

Project On Schedule: Yes  No

Project On Adopted Budget: Yes  No

Percent of Schedule Complete:

Percent of Adopted Budget Spent:

On April 29, 2021, Council directed the Public Service to submit the Transition to Zero-Emission Buses project to the Investing in Canada Infrastructure Program (ICIP) program for Federal and Provincial contribution funding. The 2021 Adopted Capital budget and 2022 to 2026 Five-Year forecast have been amended to include \$280.391M for this project.

The Transition to Zero-Emission Buses is a multi-year program aimed to take Winnipeg Transit from a diesel bus operator to a zero-emission bus (ZEB) operator by 2050. However, the financial reporting to the Standing Policy Committee on Finance and Economic Development for this program is specific to the budget years 2021 to 2026, aligned with the ICIP timeframe.

During this ICIP timeframe, clean diesel buses and ZEB's with either battery electric or fuel cell battery electric propulsion systems will replace older model diesel buses to address Transit operational requirements. Supporting infrastructure for these buses includes the installation of charging stations at Transit's Brandon Garage and construction of an outdoor hydrogen production and dispensing station at Transit's main garage facility.

The project has been impacted by Federal and Provincial approval delays; however, it is scalable and the timeframes are dictated by ICIP.

The Advisory Committee has reviewed this report and recommends that the report be sent to the Standing Policy Committee on Finance and Economic Development.

## RECOMMENDATIONS

1. That the financial status of the Transition to Zero Emission Buses (“the Project”), as contained in this report, be received as information.
2. That quarterly reporting be suspended and the next reporting on the Transition to Zero-Emission Buses occur in 2023 Q4 given the nature of the program being a multi-year bus acquisition initiative rather than a traditional infrastructure project. The project reporting schedule would be as identified in the Major Capital Projects Reporting Schedule.

## REASON FOR THE REPORT

The Asset Management Administrative Standard FM-004 requires all projects with a total estimated cost of \$25 million (2023) or more report quarterly to the Standing Policy Committee on Finance and Economic Development. This threshold is adjusted for construction inflation as part of the Multi Year Budget process. The Standing Policy Committee on Finance and Economic Development may also request reporting on any capital project.

## IMPLICATIONS OF THE RECOMMENDATIONS

No implications.

## HISTORY/DISCUSSION

See Appendix C – Key Project Events (History)

### **Bus Rolling Stock**

- A contract for 16 ZEB was awarded to New Flyer Industries in December 2022. The contract is for eight Battery Electric-Buses (BEB) and eight Fuel Cell Battery-Electric Buses (FC-BEB), which are projected to be produced between March and May 2024, and delivered two per week starting in June 2024.
- Contract negotiations for diesel bus pricing with New Flyer Industries are on-going for the first extension of the diesel bus contract, originally awarded in 2020. The Public Service is anticipating award in April 2023.

### **Pre-Construction – Charging Infrastructure**

- Charging infrastructure is to be installed in phases aligned to the procurement schedule of BEB. Phase one is estimated to be completed 2024 Q2.
- Stantec Consulting was awarded the design work for the BEB charging infrastructure at Brandon Garage.

- A contract for installation of the chargers is planned to be awarded in 2023 Q2 to ensure the chargers are installed prior to arrival of the BEB.

**Pre-Construction – Hydrogen Fueling Infrastructure**

- A hydrogen production and fuelling station is estimated to be complete in 2024 Q4. Hydrogen production volumes will be aligned to the size of the FC-BEB bus fleet.
- Center for Transportation and the Environment (CTE) was awarded a contract to develop the technical specifications and procurement documents for the hydrogen production and fueling station infrastructure to be located at 421 Osborne Street.
- It is anticipated that the contract to design and construct the hydrogen production and fueling station infrastructure will be awarded in 2023 Q3. Due to significant lead times, this may result in buses arriving prior to the completion of the fuelling station. To mitigate this risk, a provisional source of hydrogen and temporary fueling equipment to commission and test the buses, or delaying the build of the buses to better align with the fueling station completion date, may be required.

Table 1 – Contracts

Contracts							
Bid Opportunity #	Company Name	Description	Original Contract Award Value (GST & MRST extra as applicable)	Total Approved Over-Expenditures (Over-Expenditure amount only)	Date of Award	Date of Total Completion	Estimated % Complete
RFP-695-2022	Stantec	Consulting Services for DC Fast Charging Bus Stations at 600 Brandon Ave. Transit Garage	\$145,211.00	\$ -	7-Dec-22		50%
Single Source	Center for Transportation and the Environment	Consulting Services for the Preparation of RFQ and RFP Documents for Design Build Hydrogen Generation and Dispensing project at 421 Osborn Street	\$73,000.00	\$ -	7-Dec-22		20%
Tender-539-2022	New Flyer	Supply and Delivery of Heavy-Duty Low Floor Zero Emission Transit Buses	\$33,038,400.00	\$ -	15-Dec-22	TBD	20%
		<b>Total</b>	<b>\$33,256,611.00</b>	<b>\$ -</b>			

**Upcoming Procurements:**

Description	Anticipated Award Date
RFP-64-2023 Owner Advocate Project Management Services for Installation of hydrogen Production and Dispensing Infrastructure at 421 Osborne Street	2023 Q1
Tender 901-2019 Extension 1 - Supply and Delivery of Heavy-Duty 40ft. And 60ft. Low-Floor Transit Buses	2023 Q2
RFP-80-2023 Design Build Hydrogen Generation And Dispensing Project At 421 Osborne Street Transit Garage	2023 Q3
Construction DC Fast Charging Bus Stations at 600 Brandon Ave. Transit Garage	2023 Q3

## **Schedule**

The project has been impacted by Federal and Provincial approval delays. However, it is scalable and the timeframes are dictated by ICIP. Refer to the Risk section for additional details.

The current forecasted date for Total Completion is October 31, 2027.

Table 2 – Milestones

<b>Milestones</b>					
	<b>Deliverable</b>	<b>Original Targeted Completion</b>	<b>Revised Targeted Completion</b>	<b>Actual Completion Date</b>	<b>Estimated % Complete</b>
1	Charging infrastructure design award	2022 Q4		2022 Q4	100%
2	ZEB award	2022 Q4		2022 Q4	100%
3	Hydrogen fueling infrastructure Design-Build RFQ	2023 Q2			50%
4	Diesel Bus award	2023 Q2			
5	Award contact for Charging infrastructure	2023 Q3			
6	Award contact for hydrogen fueling infrastructure	2023 Q3			
7	Award contract for hydrogen detection, protection, and ventilation updates.	2023 Q3			
8	Complete phase 1 construction	2024 Q2			
9	Delivery of first ZEBs	2024 Q2			
10	Delivery of first Diesel bus	2024 Q2			
11	ZEBs in-service	2024 Q3			
12	Complete construction hydrogen detection, protection, and ventilation updates.	2024 Q3			
13	Substantial completion of hydrogen fueling infrastructure	2024 Q4			
14	Complete phase 2 charging infrastructure construction	2026 Q2			
15	Last bus Received	2027 Q3			
16	Project Completion	2027 Q4			

## **Risk**

The project has been impacted by Federal and Provincial approval delays.

- Pricing on buses and infrastructure has increased significantly since these projects were developed in 2020. Additional funding would be required to achieve the same outcomes. Without additional funding, the number of buses purchased will be reduced to stay within the project budget.
- Lead times for new vehicles have increased significantly with diesel buses up from 6 months to 12 months, and zero-emission buses up from 12 months to 16 months. Due to the delay in receiving buses, the Public Service is re-evaluating procurement timeframes in order to achieve the forecasted Total Completion date of October 31, 2027.
- Supply chain issues and increased demand has resulted in long lead times for some electrical, charging and hydrogen fueling equipment. This may result in buses arriving before required refueling infrastructure is commissioned.

The major project risks are identified in Table 3.

Table 3 – Significant Risks and Mitigations Strategies

<b>Significant Risks and Mitigation Strategies</b>	
<b>Risk Statement and Explanation</b>	<b>Risk Mitigation Management Plan</b>
<b>New:</b>	
Lead time of accessory electrical equipment needed for charging infrastructure.	Equipment lead time considered in development of charging infrastructure design.
Vehicle Lead time.	Maintain good line of communication with New Flyer and advise them early as possible regarding contract extensions to secure earlier line entry position for future contract options.
Decreased purchasing power due to inflation	ZEB contract extensions include CPI increases; adjust procurement schedule to maximize bus purchases within program budget.
Hydrogen infrastructure not reaching substantial completion prior to arrival of buses.	Need to investigate temporary fueling provisions.
<b>Ongoing:</b>	
n/a	
<b>Mitigated:</b>	
n/a	

**Financial**

The financial forecast is disclosed in Appendix B.

**Funding**

The total anticipated budget is presented in Table 4 below.

For additional information, refer to Appendix C- Key Project Events for historical details.

Table 4 – Project Funding Forecast

<b>Funding Forecast and Receivable</b>			
<b>Funding Source</b>	<b>Adopted Budget (in millions)</b>	<b>Forecasted Budget (in millions)</b>	<b>Total Budget (in millions)</b>
<b>Class of Estimate</b>	<b>Scalable</b>		
<b>City of Winnipeg</b>			
Transit Bus Replacement Reserve	-	31.16	31.16
External Debt	28.43	17.94	46.37
<b>Subtotal City of Winnipeg</b>	<b>28.43</b>	<b>49.10</b>	<b>77.53</b>
<b>Federal Government of Canada</b>			
Investing in Canada Infrastructure Program (ICIP)	38.73	71.93	110.66
<b>Province of Manitoba</b>			
Investing in Canada Infrastructure Program (ICIP)	31.95	60.25	92.20
<b>Total</b>	<b>99.11</b>	<b>181.28</b>	<b>280.39</b>

\* Adopted/Forecasted budget(s) as approved by Council on April 29, 2021.

### **Property Acquisition**

n/a

### **Stakeholder Engagements/Communications**

- Tri-level government project funding signage is being developed.
- The Public Service will be updating the Winnipeg Transit major project website to include the “Transition to Zero-Emission Buses.” This will include a timeline that reflects the current project and other website updates as required.
- The Public Service is developing ZEB bus wraps and a public education campaign to align with the in-service date of the buses.

### **Subsequent Events after Report Period End Date**

n/a

**FINANCIAL IMPACT**

**Financial Impact Statement Date:** [March 30, 2023](#)

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**Project Name:**

**Transition to Zero-Emission Buses,**

**Project ID: 4210000221, 4210000222, 4210000223**

**Quarterly Project Status Report No. 1**

**For the Period Ended February 28, 2023**

**COMMENTS:**

There is no financial impact as this report is for information only.

*Merrilee Kray for Laurie Fisher*

Laurie Fisher, CPA, CA

Manager of Finance & Administration



## CONSULTATION

This Report has been prepared in consultation with:

n/a

## OURWINNIPEG POLICY ALIGNMENT

### **OurWinnipeg 2045 (2022)**

Goal - Environmental Resilience,

Objective 2: Prioritize sustainable transportation as the mobility options of choice.

Prioritize sustainable transportation as the mobility options of choice. Transition to a sustainable transportation system that safely and efficiently moves people, goods and services, increases access to a variety of affordable mobility choices, encourages less reliance on personal vehicle travel, reduces travel time, mitigates congestion and related greenhouse gas emissions, and supports the development of denser, better-connected, healthy and complete communities.

Policy 2.9: Reduce Road Congestion

Increase the efficiency, convenience and usage of the active and public transportation system, to improve air quality, provide a viable alternative to the automobile, and reduce current and future road congestion.

### **Winnipeg Transit Master Plan (2021)**

Network Goals:

- Enhance Customer Experience
- Increase Ridership
- Improve Downtown Mobility
- Complement Land-Use Development
- Improve Multi-modal Mobility
- Ensure Transit is Inclusive
- Continuously Innovate
- Empower Healthy Communities
- Balance Investment with Affordability

### **Transportation Master Plan (2011)**

Key Strategic Goal Five: A transportation system that is financially sustainable.

Key Strategic Goal Six: A transportation system that reduces its greenhouse gas emissions footprint and meets or surpasses climate change and emissions reduction goals set by the City and the Province.

## WINNIPEG CLIMATE ACTION PLAN ALIGNMENT

Strategic Opportunity #3: Advancing Sustainable Transportation – Increasing Mobility Options and Shift to Zero Emission Vehicles

Key Direction 3.7: Utilize Zero Emission Buses

## WINNIPEG POVERTY REDUCTION STRATEGY ALIGNMENT

Goal 5(b) Transportation System Equity is Enhanced – improvements to transportation and transit infrastructure and services prioritize areas of higher poverty, and increased interconnectivity to employment and affordable goods and services.

### SUBMITTED BY

**Department:** Transit

**Division:** Asset Management Office

**Prepared by:** Erin Cooke, Project Manager – Transition to Zero-Emission Buses

**Date:** March 31, 2023

### Appendices

Appendix A – Key Project Facts

Appendix B – Financial Forecast

Appendix C – Key Project Events (History)

## Appendix A – Key Project Facts

<b>Adopted Budget</b>	\$280.391M
<b>Class of Estimate (Adopted)</b>	Adopted as a scalable program; current estimate of existing and planned awards is Class 2
<b>Range of Estimate (Adopted)</b>	-15% to +20%; \$238.332M to \$336.469M
<b>Amended Budget</b>	N/A
<b>Class of Estimate (Amended)</b>	N/A
<b>Range of Estimate (Amended)</b>	N/A
<b><u>Project Scope</u></b>	
<p>The Transition to Zero Emission Buses is multi-year Project to provide Winnipeg Transit with the data necessary to understand the costs, performance, and operational challenges associated with zero-emission transit, while providing sufficient time for the development of strategies to transform Winnipeg Transit from a diesel bus operator to a zero-emission bus operator. Clean diesel buses and zero emission buses (ZEB) with either battery electric or fuel cell battery electric propulsion systems to replace older model diesel buses and to also address Transit operational requirements.</p>	
<p>The Project also includes the purchase and installation of up to 18 chargers and 72 charge dispensers and associated civil and electrical works including utility connections, electrical service updates, transformers, and equipment installation and commissioning of charging infrastructure anticipated to be installed at the Winnipeg Transit Garage located at 600 Brandon Avenue; hydrogen production and dispensing equipment will be installed outdoors at the Winnipeg Transit property located at 421 Osborne Street including, site development, soil remediation, utility connections to existing water and electrical service, new switching and transformers, and equipment installation and commissioning; and modifications to Winnipeg Transit's maintenance facility to accommodate service and maintenance of compressed hydrogen fueled buses.</p>	
<p>Once completed, this Project will result in improved capacity of public transit infrastructure, and improved quality and/or safety of existing and/or future public transit.</p>	
<b>Major Capital Projects Advisory Committee Membership:</b>	
<ul style="list-style-type: none"> <li>- Greg Ewankiw, Director of Transit (Chair)</li> <li>- Catherine Kloepfer, Chief Financial Officer</li> <li>- Jesse Crowder, Manager Asset Management Office, Transit</li> <li>- Bjorn Radstrom, Manager Service Development, Transit</li> <li>- Geoff Patton, Director, Assets and Project Management</li> <li>- Danny Tooth, A/Manager, Major Projects Oversight, Assets and Project Management</li> <li>- Matt Dryburgh, Senior Manager Economic Development &amp; Policy, Economic Development</li> <li>- Becky Raddatz, Manager Office of Sustainability, Water &amp; Waste</li> </ul>	

## Appendix B – Financial Forecast

### Appendix B - Transition to Zero Emission Buses Financial Forecast\* As at February 28, 2023

Project Component Deliverables	Budget (in 000's)			Expenditure Forecast (in 000's)							Surplus (Deficit) From Amended Budget	Variance Last Report	Change in Variance
	Adopted/Forecasted Budget**	Council Approved Change	Amended Budget*	Actual Costs To February 28, 2023	Projected Costs					Total Forecasted Costs			
					2023	2024	2025	2026	2027				
Engineering, Design and Other	\$ 2,192	\$ -	\$ 2,192	\$ -	\$ 200	\$ 1,192	\$ 600	\$ 200	\$ -	\$ 2,192	\$ -	\$ -	\$ -
Construction	\$ 269,638	\$ -	\$ 269,638	\$ 7,070	\$ 13,744	\$ 87,756	\$ 70,298	\$ 48,825	\$ 41,945	\$ 269,638	\$ -	\$ -	\$ -
Land Acquisition	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Internal Financing/Overhead Costs	\$ 1,561	\$ -	\$ 1,561	\$ 137	\$ 151	\$ 245	\$ 250	\$ 255	\$ 523	\$ 1,561	\$ -	\$ -	\$ -
Contingency	\$ 7,000	\$ -	\$ 7,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 7,000	\$ 7,000	\$ -	\$ -	\$ -
<b>Total Project Budget</b>	<b>\$ 280,391</b>	<b>\$ -</b>	<b>\$ 280,391</b>	<b>\$ 7,207</b>	<b>\$ 14,095</b>	<b>\$ 89,193</b>	<b>\$ 71,148</b>	<b>\$ 49,280</b>	<b>\$ 49,468</b>	<b>\$ 280,391</b>	<b>\$ -</b>		

  

<b>% of Project Budget Spent</b> (Actual Costs to Date / Adopted & Amended Budget)	3%		3%
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\* Amended budget and actual costs to date have been agreed to the City's general ledger.

\*\* Adopted/Forecasted budget(s) as approved by Council on April 29, 2021.

Project #	Adopted Budget (in 000's)	Forecasted Budget (in 000's)	Total Adopted/Forecasted Budget (in 000's)	Actual Costs (in 000's)
4210000221	\$ 27,006	\$ -	\$ 27,006	\$ 5,558
4210000222	\$ 49,775	\$ -	\$ 49,775	\$ 1,649
4210000223	\$ 22,323	\$ -	\$ 22,323	\$ -
421XXX224	\$ -	\$ 38,703	\$ 38,703	\$ -
421XXX225	\$ -	\$ 41,676	\$ 41,676	\$ -
421XXX226	\$ -	\$ 100,908	\$ 100,908	\$ -
<b>Total</b>	<b>\$ 99,104</b>	<b>\$ 181,287</b>	<b>\$ 280,391</b>	<b>\$ 7,207</b>

## Appendix C – Key Project Events (History)

- On April 29, 2021, Council directed the Public Service to submit the Transition to Zero Emission Buses project to the Investing in Canada Infrastructure Program (ICIP) for Federal and Provincial funding under the Public Transit Infrastructure Stream (PTIS), subject to written confirmation of Federal and Provincial funding that is satisfactory to the Chief Financial Officer, including the 2021 Adopted Capital budget and 2022 to 2026 Five-Year forecast be amended to include \$280.391M for the project.
- On December 16, 2021, Council approved the 2022 Capital Budget, and amended the 2023 to 2027 Five-Year budget to include \$253.385M allocated to the Transition to Zero Emission Buses. The project total of \$280.391M also includes \$27.006M from the approved 2021 budget.
- On September 7, 2022, the Standing Policy Committee on Public Works approved the provisional award of the first contract extension for the Supply and Delivery of Heavy-Duty 40 ft. and 60 ft. Low Floor Transit Buses in the amount of \$38,476,428 to New Flyer Industries subject to receipt of written confirmation of ICIP funding. However, the price proposal from New Flyer Industries expired prior to confirmation of funding.
- On November 16, 2022, the City received notification from the Province that the Transition to Zero Emission Buses was approved for Federal and Provincial funding under the ICIP-PTIS stream. The notification outlined maximum eligible costs of \$276,638,000 with a maximum \$110,655,200 Federal and \$92,203,445 Provincial contribution, respectively.
- On November 29, 2022, the Standing Policy Committee on Public Works approved the provisional award to New Flyer Industries for supply and delivery of 16 Heavy-Duty 40 ft. and 60 ft. Low Floor zero-emission buses under RFP No. 539-2022 subject to written confirmation of ICIP funding.
- On December 5, 2022, the Province provided interim information regarding the project contribution agreement, including an effective start date of October 25, 2022. Only expenditures signed on or after this date are eligible for reimbursement, with the exception of Climate Lens Assessments.
- On December 15, 2022, New Flyer Industries was awarded the contract for supply and delivery of 16 Heavy-Duty 40 ft. and 60 ft. Low Floor zero-emission buses under RFP No. 539-2022.
- On April 11, 2023, the Standing Policy Committee on Public Works approved the provisional award of the revised first contract extension for the Supply and Delivery of Heavy-Duty 40 ft. and 60 ft. Low Floor Transit Buses in the amount of \$ 41,478,462.40 to New Flyer Industries.