Agenda – Council – July 18, 2024

Report – Standing Policy Committee on Public Works – July 3, 2024

Item No. 2 Louise Bridge Rehabilitation

STANDING COMMITTEE RECOMMENDATION:

On July 9, 2024, the Executive Policy Committee concurred in the recommendation of the Standing Policy Committee on Public Works and submitted the following to Council:

1. That the Public Service be directed to proceed with planning and design of a rehabilitation of the existing Louise Bridge, to be constructed no later than 2030.

2. That the Winnipeg Public Service report back to the Standing Policy Committee on Public Works with temporary traffic and transit plans associated with the rehabilitation of the Louise Bridge, 18 months prior to commencement of the rehabilitation works.

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

Report – Standing Policy Committee on Public Works – July 3, 2024

DECISION MAKING HISTORY:

EXECUTIVE POLICY COMMITTEE RECOMMENDATION:

On July 9, 2024, the Executive Policy Committee concurred in the recommendation of the Standing Policy Committee on Public Works and submitted the matter to Council.

STANDING COMMITTEE RECOMMENDATION:

On July 3, 2024, the Standing Policy Committee on Public Works concurred in the recommendation of the Winnipeg Public Service, with the following amendment:

- Add the following new Recommendation 2, and renumber the remaining recommendation accordingly:

    "2. That the Winnipeg Public Service report back to the Standing Policy Committee on Public Works with temporary traffic and transit plans associated with the rehabilitation of the Louise Bridge, 18 months prior to commencement of the rehabilitation works."

and submitted the matter to the Executive Policy Committee and Council.

On May 7, 2024, the Standing Policy Committee on Public Works laid the matter over to its meeting on July 3, 2024.

ADMINISTRATIVE REPORT

Title: Louise Bridge Rehabilitation

Critical Path: Standing Policy Committee on Public Works – Executive Policy Committee – Council

AUTHORIZATION

Author	Department Head	CFO	CAO
B. Neirinck, P, Eng.	J. Berezowsky	C. Kloepfer	M. Jack

EXECUTIVE SUMMARY3

The existing Louise Bridge is in poor condition due to age-related deterioration. It requires annual closures for reactive repairs and will require significant work by 2030 to remain operational.

The Public Service is recommending a bridge rehabilitation, despite other options being explored via other studies and projects.

As background:

- The 2014 and 2016 Public Works Capital Budgets included funding for engineering design of rehabilitation or reconstruction options for the bridge.
- At the same time, Winnipeg Transit dedicated resources to exploring options for the bridge (among other infrastructure), first as part of the 2015 Eastern Corridor Study and later as part of the Winnipeg Transit Master Plan.
    - These studies looked at potential rapid transit routes through Point Douglas and developed a functional design for the bridge. It was anticipated that preliminary design for the preferred Louise Bridge option would follow the conclusion of the Eastern Corridor Study. This project is near completion.
    - The Eastern Corridor Study considered several alternatives for the Louise Bridge (Class 4 estimates working towards 2030 completion):
        - Rehabilitation ($40 million);
        - Interim new 4-lane bridge options designed to accommodate expansion ($142 million); and,
        - An ultimate 6-lane bridge ($179 million).
- The primary driver for bridge replacement is implementation of the Eastern Rapid Transit Corridor in accordance with the Winnipeg Transit Master Plan (WTMP).
- The WTMP described the Louise Bridge as the boundary between Priority 2 and Priority 4 of Rapid Transit expansion. A new bridge would extend the Rapid Transit Priority 2 project to the east side of the Red River, while rehabilitation would cause Rapid Transit Priority 2 to end just prior to crossing the Red River. Priority 4 is the final phase of an anticipated 25-year implementation plan.

Traffic analysis indicates the existing bridge is near or at capacity in morning rush hour based on 2023 traffic counts. However, there has been a 10 percent decrease in traffic since 2019 (pre-pandemic) levels and only modest traffic growth is projected. The traffic analysis suggests

that the existing 2-lane bridge would provide adequate capacity for vehicular traffic until around 2050.

A rehabilitation of the existing bridge would provide a minimum 30 years of additional service life until an expanded bridge is required to complete the remainder of the Eastern Rapid Transit Corridor under the Rapid Transit Priority 4 investments.

Therefore, a rehabilitation is what is recommended at this time.

RECOMMENDATIONS

1. That the Public Service be directed to proceed with planning and design of a rehabilitation of the existing Louise Bridge, to be constructed no later than 2030.

2. 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

The 2024 project will undertake Preliminary Design of the preferred Louise Bridge renewal option as approved by Council.

Funding for the preliminary design will utilize 2024 Capital Budget that was adopted by Council on March 20, 2024 in the amount of $1,500,000.

IMPLICATIONS OF THE RECOMMENDATIONS

The Public Service would issue a Request for Proposals and award a contract for professional consulting services for preliminary design of the rehabilitation of the Louise Bridge. A Class 3 cost estimate would be prepared based on the recommended preliminary design.

The project would proceed to detailed design in 2028 followed by construction in 2029-2030, subject to council approval.

HISTORY/DISCUSSION

1.0 Louise Bridge Structure

The existing Louise Bridge is in poor condition and requires renewal by 2030 due to age related deterioration which includes extensive bridge deck deterioration, non-functional support bearings, structural steel deterioration, and underwater river pier deterioration. Despite being a designated Truck Route and Regional Street, the Louise Bridge is load restricted to 36.5 tonnes Gross Vehicle Weight (below the maximum legal truck GVW of 63.5 tonnes), and height restricted to 3.76 m (below the maximum legal truck height of 4.15 m). Bridge closures are required annually for reactive repairs.

2.0 Eastern Corridor Study and Winnipeg Transit Master Plan

On March 23, 2015 Council approved a first charge of $2,500,000 on the 2016 Capital Budget to commence Rapid Transit Planning and Design for the Eastern Rapid Transit Corridor. In 2019, Transit began work on the Winnipeg Transit Master Plan (WTMP).

Based on the initial findings of the Eastern Corridor Study, the WTMP defined the Eastern Corridor (Rose Line) route along portions of Main Street, Sutherland Avenue, crossing the Red River in the vicinity of the Louise Bridge, and then east on Nairn Avenue and Regent Avenue.

The WTMP proposed a phased expansion of rapid transit infrastructure, generally starting with improvements to the downtown and expanding outwards. Thus, the Eastern Corridor was divided into three priority segments as described in Table 1 and shown in Figure 1.

Table 1: WTMP priority sequence of the Eastern Corridor segments

WTMP Priority*	Eastern Corridor (Rose Line)		WTMP Program
	Segment	**Proposed Treatment**	
Priority 1	Main Street from Downtown to vicinity Higgins Avenue underpass	Elevated transitway from Harkness Station through Union Station to Westbrook Street, and fully-separated at-grade transitway from Westbrook Street through Portage & Main Station to Higgins Avenue	Program 1
Priority 2	Main Street at Sutherland to Louise Bridge	Transit Boulevard along Sutherland Avenue	Program 2A
Louise Bridge – to be determined			
Priority 4	Nairn Avenue at Louise Bridge to Regent Avenue at Plessis	Fully separated transitways on Nairn Avenue and Regent Avenue to Kildonan Place, with transit-priority infrastructure on Regent Avenue from Kildonan Place to Plessis Road.	Program 4A

** note, there are no Priority 3 works associated with the Eastern Corridor*

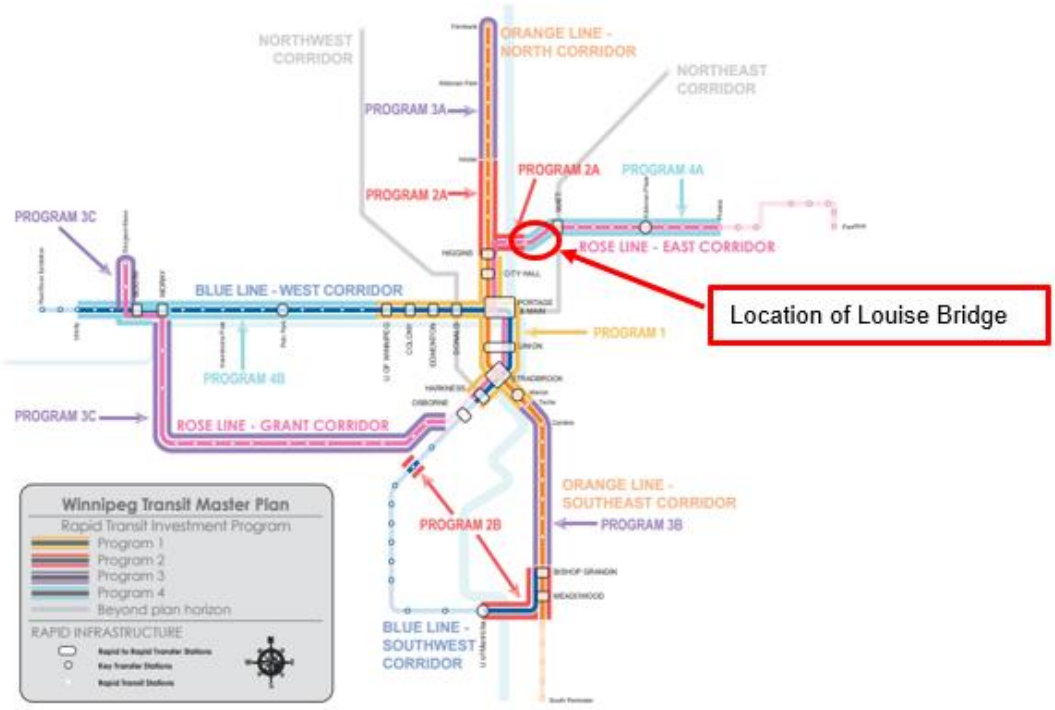


Figure 1: Rapid Transit Investment Program, excerpt from the WTMP

On April 29, 2021, Council adopted the WTMP, approving the recommended final future alignment and priority sequence of the Eastern Corridor. Though the route was selected, the exact river crossing location and bridge configuration was not determined. Additionally, the priority level for the river crossing itself (located at the interface between Priority 2 and Priority 4 works) was not defined.

3.0 Eastern Corridor River Crossing Design Refinement

With approval of the route, the Eastern Corridor Study proceeded to refine the design of the Eastern Corridor and river crossing to a functional design level. Alternatives, as further compared in Table 2 included:

- Alternative 1: Rehabilitate Existing Bridge (no accommodation of rapid transit)
- Alternative 2: Replace with New 4-lane bridge (having two possible configurations) and
- Alternative 3: Replace with New 6-lane bridge.

Table 2: Comparison of bridge alternatives

Factor	Alternative 1: Rehabilitate Existing Bridge	Replace with	
		Alternative 2: New 4-Lane Bridge	Alternative 3: New 6-Lane Bridge
Class 4 Cost Estimate	$40M	$142M	$179M
Assumed Schedule	*PD: 2024 *DD: 2028 Construction: 2029/30	PD: 2024 DD: 2028 Construction: 2029/30	PD: 2024 DD: 2028 Construction: 2029/30

Life extension	~30 years	75 – 100 years	75 – 100 years
Implication for Eastern Corridor river crossing	Deferred to 2050 – 2060	Optional; could include two car lanes and two transit-only lanes, or four car lanes	Transit-only lanes included
Impact on traffic flow during construction	Major: bridge closed for ~12 months	Minor: new bridge built while traffic operates on existing	Minor: new bridge built while traffic operates on existing
Impact on traffic capacity after construction	Possible improvement by reconfiguration of the intersection at the north end of the existing bridge	Variable improvement depending on option selected for bridge and intersection	Significant improvement
**Property impacts	No major impacts	Major impacts: Ernie O' Dowda Park and at least 2 private properties	Major impacts: Ernie O' Dowda Park and at least 2 private properties
Next Steps Required	Preliminary Design Study	Preliminary Design Study	Preliminary Design Study

* *"Preliminary Design" and "Detailed Design"*

** *There are additional property impacts for Priority 4 related to the transit-only lanes on Nairn Avenue.*

4.0 Timing of Future Bridge Replacement

Traffic analysis indicates the bridge's estimated traffic capacity is 1,200 vehicles per lane per hour. Despite the 2023 morning rush hour count exceeding the estimated capacity, a 10 percent decrease in traffic since 2019 (pre-pandemic) levels, and a modest projected 0.2 percent annual traffic growth suggest the existing 2-lane bridge will provide adequate capacity for vehicular traffic until around 2050.

Even if rehabilitated, the existing structure cannot accommodate additional vehicular lanes or transit-only lanes. Thus, future extension of the Eastern Corridor across the Red River will require replacement of the existing bridge.

Based on the findings of the WTMP, the "Priority 4" portions of the Eastern Corridor were planned to be implemented in the final phase of the 25-year implementation plan. Thus, it is recommended that the bridge is rehabilitated, in order to extend its useful life to 2060, such that it will provide ongoing service until it is replaced as part of future Eastern Corridor works.

Assuming construction of any of the alternatives is completed by 2030, the Class 4 cost estimate ranges from $40 million for the rehabilitation to $142 million and $179 million for new replacement 4-lane and 6-lane bridge alternatives respectively. A bridge rehabilitation extends the service life of the bridge by at least 30 years while a new bridge has a minimum expected service life of 75 years.

Conceptual plans of replacement bridge alternatives are attached. The plans identify vehicular traffic lanes in grey, transit only lanes in red and active transportation in green.
The new 4-lane bridge alternative has two sub-options. Option 1 provides 4-lanes of mixed-use traffic, and Option 2 provides two transit-only lanes and two regular lanes. Both would be expandable to 6 lanes in the future, as may be necessary to accommodate traffic and dedicated transit lanes for the Easter Corridor.

Note that extension of the Eastern Corridor along Nairn Avenue from Louise Bridge to Archibald Street and beyond would require significant property acquisition along the north side of Nairn Avenue. Refer to the attached conceptual sketch.

5.0 Project Funding

Table 3: Summary of Project Funding/Capital Budgets

Louise Bridge (Red River) - Project # 1805001414		
	2014 Budget	2,081,000
	2016 Budget	500,000
	Total approved	2,581,000
	Rebudgeted in 2024	(1,500,000)
	Amended budget	1,081,000
	Expenditures incurred to date	(976,194)
	Available Balance	104,806
Louise Bridge Rehabilitation - Project #1805001424		
	2024 Budget	1,500,000

The 2014 and 2016 Capital Budgets identify a combined $2,581,000 for the preliminary design of rehabilitation or reconstruction of the Louise Bridge (i.e. – the original project). Functional design of bridge options was undertaken in conjunction with the Eastern Corridor Study, which is near completion.

In the 2024 Multi-year budget process, $1,500,000 of funding from the original project was re-budgeted in the 2024 Capital Budget, leaving an Amended Budget of $1,081,000 (Project # 1805001414). As at the date of this report, the original project has incurred expenditures totaling $976,194, leaving an Available Balance of $104,806. This project is nearing conclusion and resulted in the three bridge alternatives that have been identified in this report.

The 2024 Capital Budget adopted on March 20, 2024 includes $1,500,000 for Louise Bridge Rehabilitation project. For clarity, the 2024 Capital Project was ‘rebudgeted’ by transferring $1,500,000 from the original project to the newly created project in the 2024 Capital Budget.

Approval of this report will result in the Public Service proceeding with planning and design of a rehabilitation of the existing Louise Bridge, to be constructed no later than 2030.

FINANCIAL IMPACT

Financial Impact Statement

Date: April 3, 2024

Project Name:
Louise Bridge Rehabilitation

First Year of Program **2024**

	2024	2025	2026	2027	2028
Capital					
Capital Expenditures Required	$ 1,500,000	$ -	$ -	$ -	$ -
Less: Existing Budgeted Costs	1,500,000	-	-	-	-
Additional Capital Budget Required	$ -	$ -	$ -	$ -	$ -
Funding Sources:					
Debt - Internal	$ -	$ -	$ -	$ -	$ -
Debt - External	-	-	-	-	-
Grants (Enter Description Here)	-	-	-	-	-
Reserves, Equity, Surplus	-	-	-	-	-
Other - Enter Description Here	-	-	-	-	-
Total Funding	$ -	$ -	$ -	$ -	$ -
Total Additional Capital Budget Required	$ -				
Total Additional Debt Required	$ -				
Current Expenditures/Revenues					
Direct Costs	$ -	$ -	$ -	$ -	$ -
Less: Incremental Revenue/Recovery	75,000	-	-	-	-
Net Cost/(Benefit)	$ (75,000)	$ -	$ -	$ -	$ -
Less: Existing Budget Amounts	(75,000)	-	-	-	-
Net Budget Adjustment Required	$ -	$ -	$ -	$ -	$ -

Additional Comments: The total estimated cost of $1,500,000 will be funded by the Public Works Louise Bridge Rehabilitation project #(#1805001424). Incremental Revenue / Recovery represents the estimated Departmental Overheads.

J. Ruby, 2024-04-04
J. Ruby CPA, CA
Manager of Finance and Administration

CONSULTATION

This Report has been prepared in consultation with:

- Winnipeg Transit

OURWINNIPEG POLICY ALIGNMENT

OurWinnipeg 2045 Policy 6.1 Sustainable Urban Growth. *The City must accommodate physical development that reflects this Plan's goals, and achieves a continuum of complete and connected communities over the lifecycle of the Plan.* Rehabilitation of the Louise Bridge will maintain connected communities and align the bridge's lifecycle with future infrastructure investments in a financially sustainable manner.

WINNIPEG CLIMATE ACTION PLAN ALIGNMENT

Consideration was given as to whether this report connects to the Winnipeg Climate Action Plan (CAP), and it was determined that the CAP is not applicable to this specific report.

WINNIPEG POVERTY REDUCTION STRATEGY ALIGNMENT

The project is located within a Higher Poverty Neighbourhood, as identified by the Winnipeg Poverty Reduction Strategy. Rehabilitation of the Louise Bridge will allow it to continue to support the mobility needs of the community.

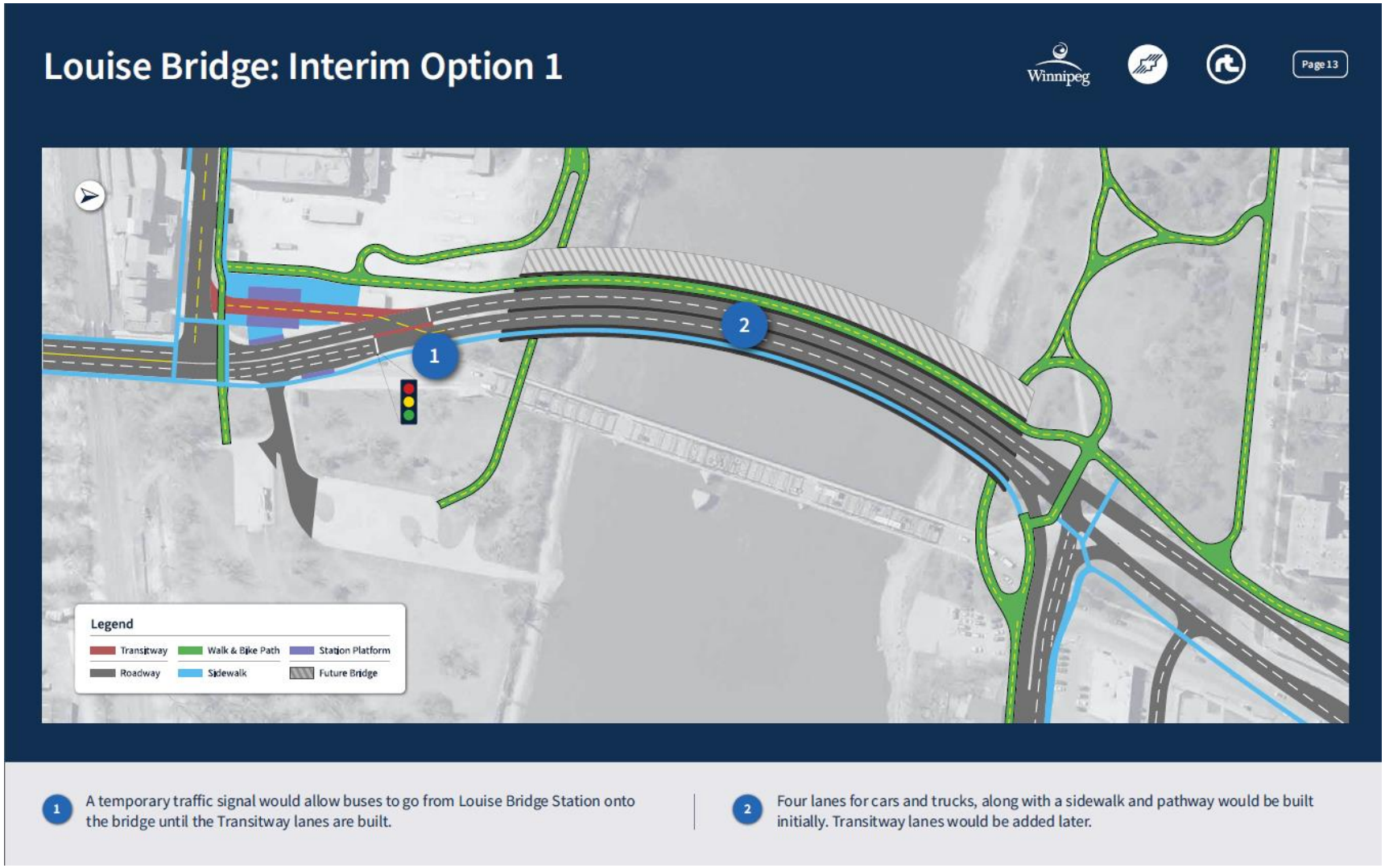
SUBMITTED BY

Department: Public Works
Division: Engineering
Prepared by: Cameron Ward
Date: April 8, 2024

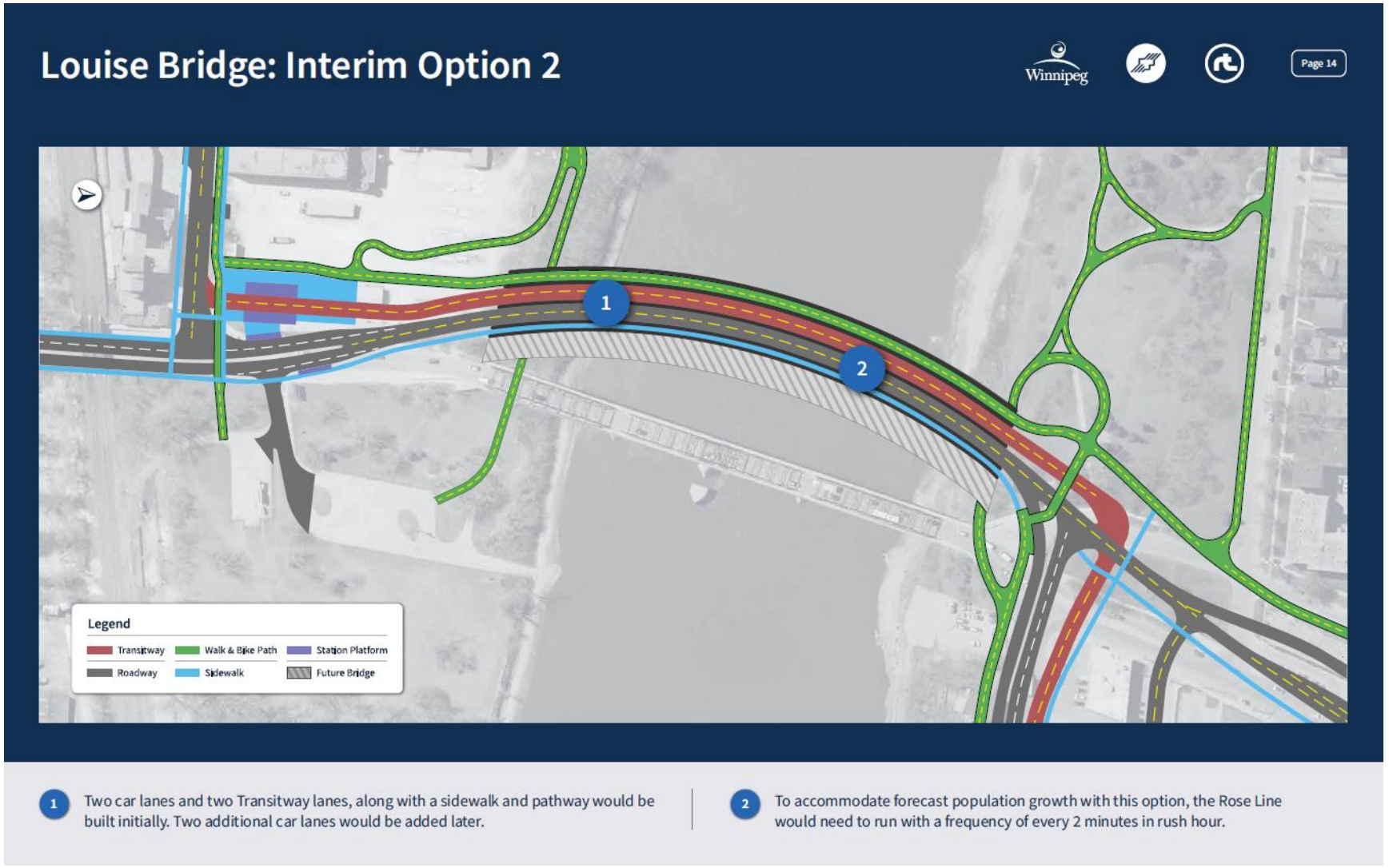
Attachments:
Conceptual plans of bridge replacement options:

- Option 1 – New 4-Lane Bridge (interim configuration) - mixed use traffic
- Option 2 – New 4-Lane Bridge (interim configuration) - 2 dedicated transit lanes
- Option 3 – New 6-Lane Bridge (ultimate configuration)
- Future corridor concept along Nairn Avenue

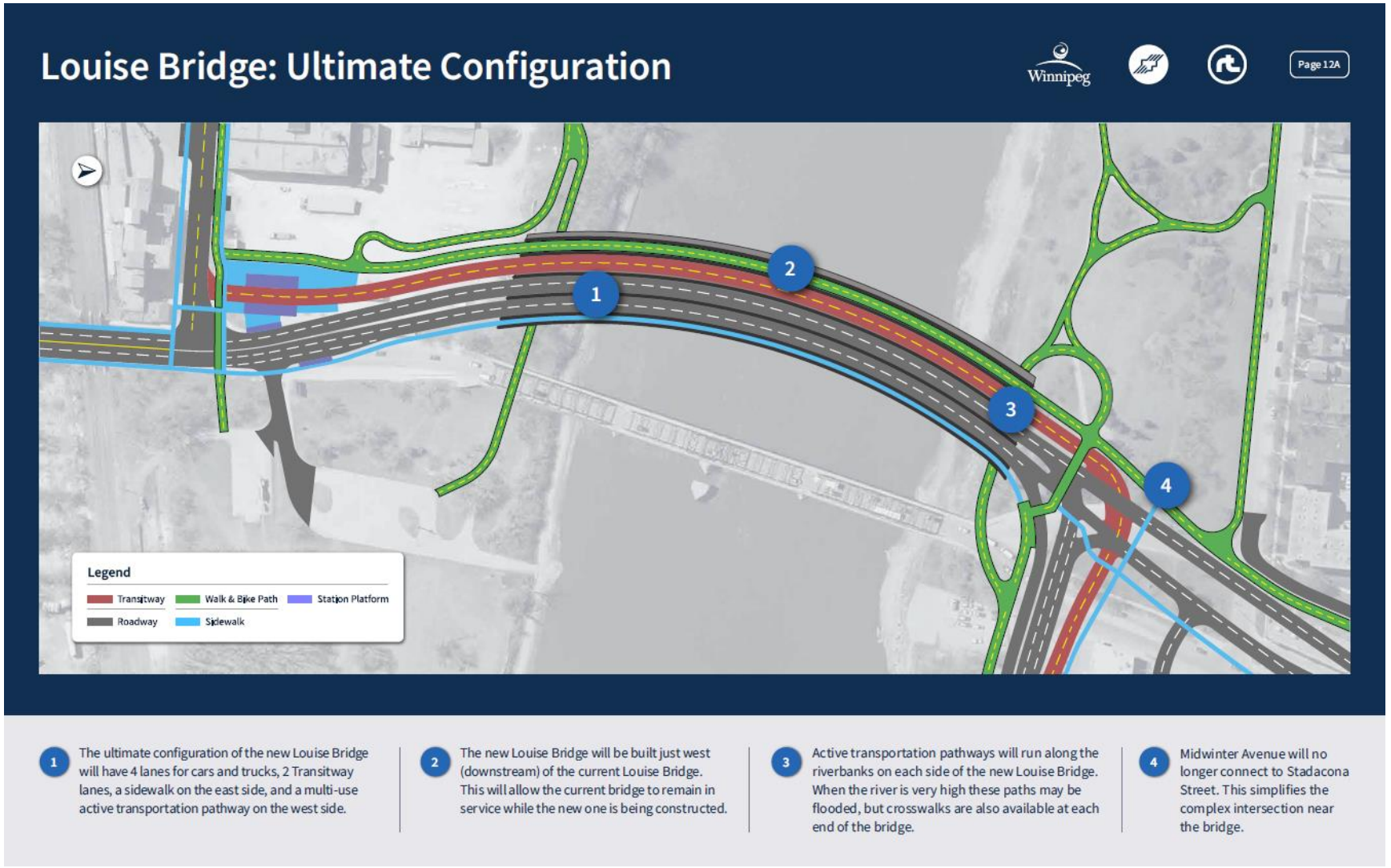
Alternative 2 Option 1 – New 4-Lane Bridge (interim configuration) - mixed use traffic



Alternative 2 Option 2 – New 4-Lane Bridge (interim configuration) - 2 dedicated transit lanes



Alternative 3 – New 6-Lane Bridge (ultimate configuration)



Future corridor concept along Nairn Avenue

