

New Implementation Approach for the F.G. Gardiner Expressway Revised Strategic Rehabilitation Plan

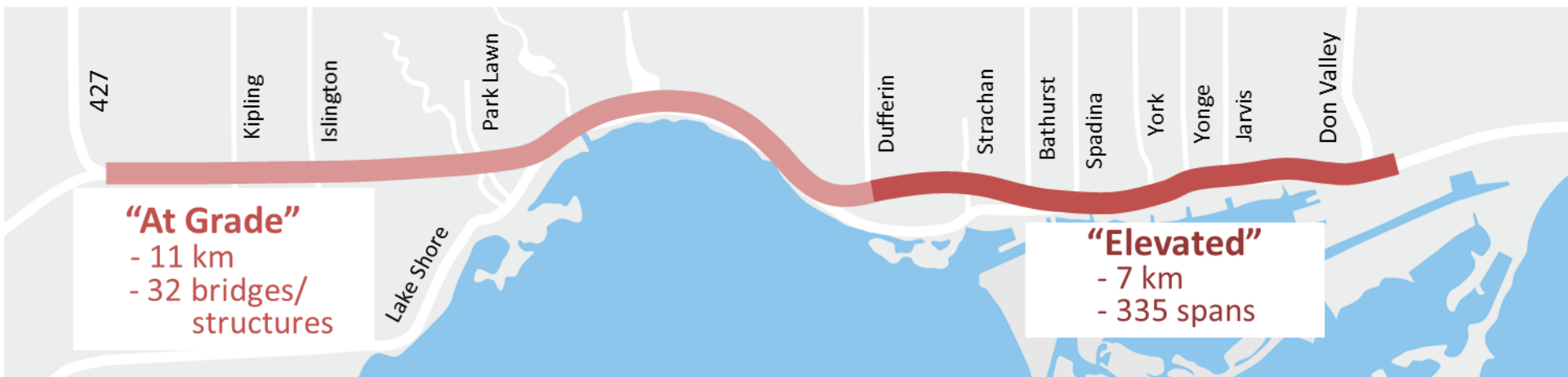
Presentation to
City Council

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Overview

- Gardiner Strategic Plan Background
- Original Approach
- Funding Update
- Cost Estimate Update
- New Implementation Approach
- Recommendations

Gardiner Strategic Plan Background

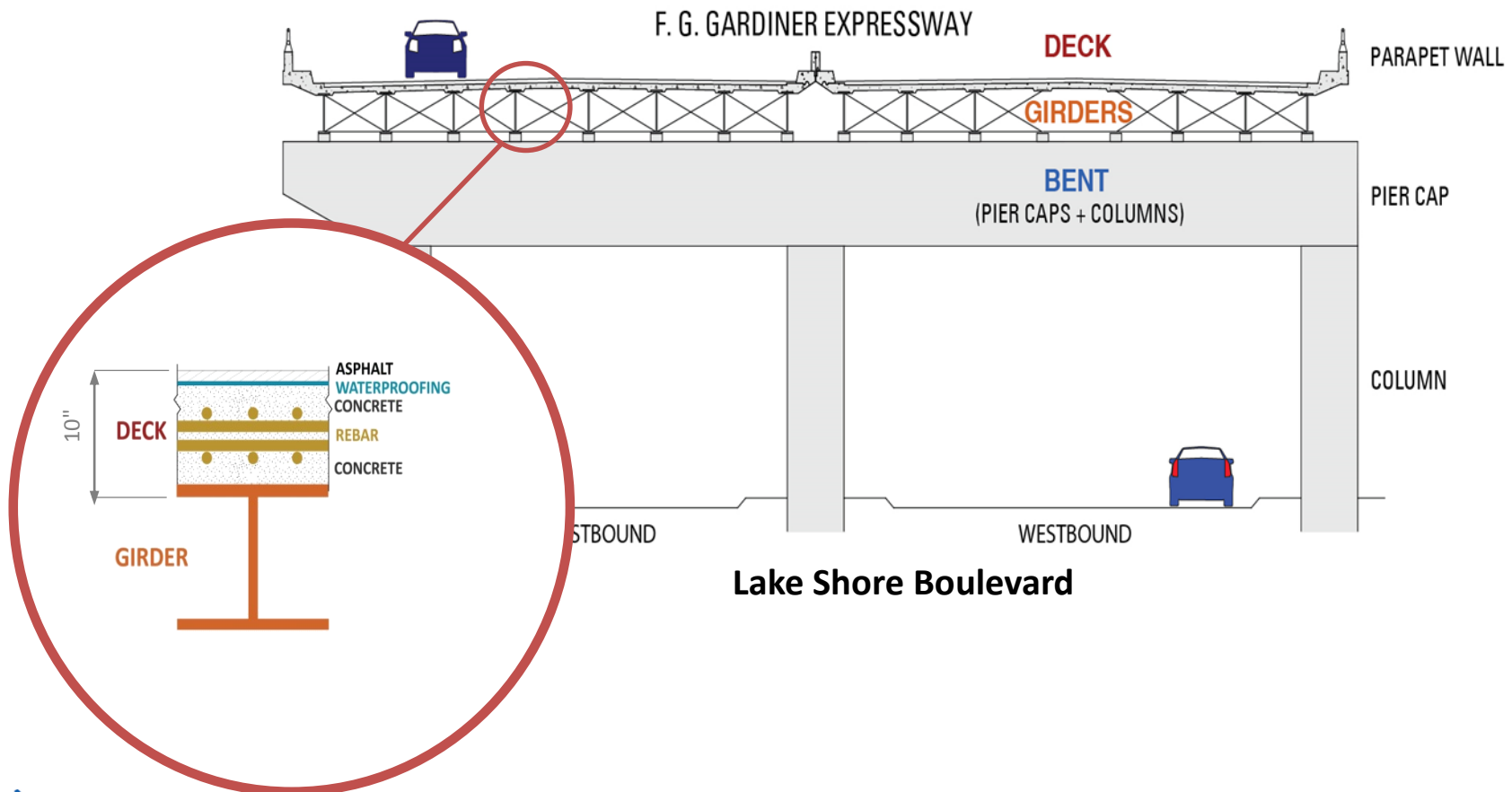


- “At-grade” section: Hwy. 427 to Dufferin Street (1955 to 1958)
- “Elevated” section: Dufferin Street to Logan Avenue (1959 to 1966)
- Strategic Rehabilitation Plan – prepared in 2014
 - Study area: Highway 427 to Logan Avenue (Don Valley Parkway)
 - Methodology: Based on condition assessments
 - Outcome: prioritization of works into immediate, short term and longer term rehabilitation requirements based on public safety and needs

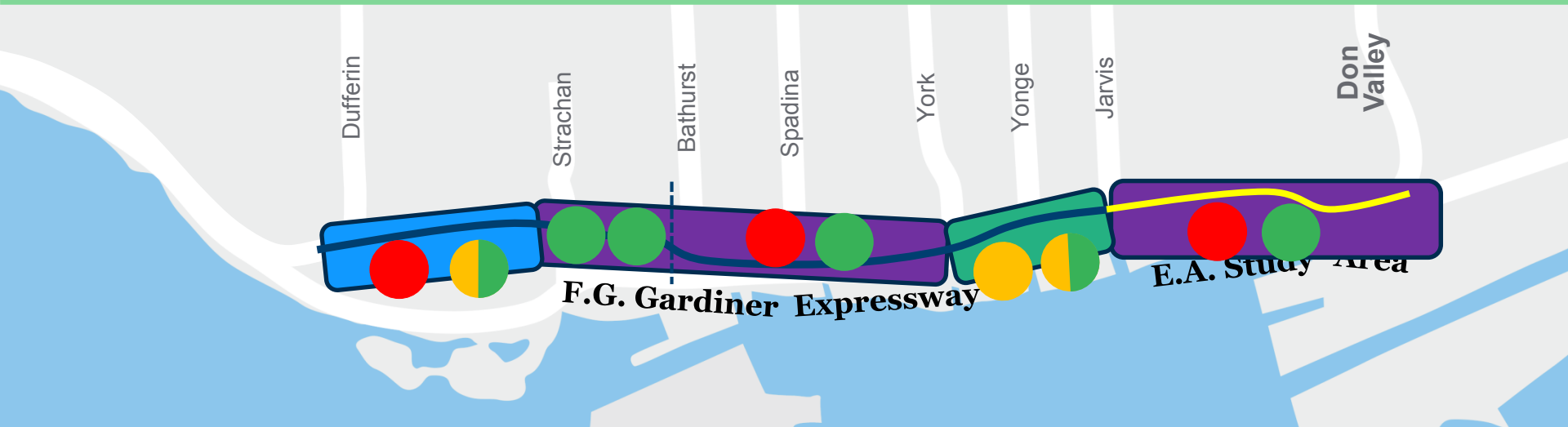
Gardiner Strategic Plan Background

— Cross Section

F.G. Gardiner Expressway



Condition Assessment of the Elevated Section



Condition Assessment

Deck & Barriers



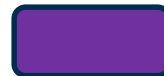
Girders



Section Type



Concrete T-Beam



Steel Girder



Concrete Box Girder

- Bents (substructure) - some require extensive work
- Bearings – good to poor
- Drainage System – functional issues

Gardiner Strategic Plan Background

- **Elevated Section:**
 - Concrete Deck and Barrier Walls are near the end of their service life
 - Bents require extensive concrete repair work
 - Better drainage needed to prevent “waterfall” onto Lake Shore Boulevard
 - Steel girders will need recoating - in 10 years
- **At Grade Section:**
 - Repairs required to all Overpass and Underpass Structures
 - Pavement reconstruction and resurfacing all 11 kilometres
 - Roadside safety improvements required throughout:
 - e.g., guard rail upgrades and shoulder widening to comply with current Ontario highway standards



Gardiner Strategic Plan Background

- **Interim Repairs:**
 - Extremely poor condition of the bridge deck of the Eastern section of the Expressway east of Jarvis
 - Temporary Solution: immediate, interim measures to keep the Expressway safe and serviceable for next 5 years
 - Approximately \$20 million spent since 2014



Original Approach for the Implementation of the Revised Strategic Rehabilitation Plan

At its meeting of September 30 – October 2, 2015, Council directed staff to:

- The Strategic Rehabilitation Plan was revised to incorporate the Gardiner East Hybrid Option for the elevated section of the Expressway east of Jarvis Street
- Proceed with a Public-Private-Partnership (P3) to implement the Rehabilitation Plan and make an application to PPP Canada, where the City could receive up to 1/3 of the capital costs (\$820 million)
 - P3 approach was subject to the receipt of the federal funding
- Re-iterate a request to the Province to provide matching 1/3 funding for the project
- Engage Infrastructure Ontario (IO) to assist with the P3 procurement

Funding Update

- City submitted applications for \$820 million to the federal government by the March 31, 2016 due date
- However:
 - PPP Canada funding program has been paused
 - To date, City has been unable to secure the federal funding
- Province has not provided any indication that it is prepared to fund the project

Cost Estimate Update

- Infrastructure Ontario (IO) revised their cost estimates:
 - The preferred alternative for the Gardiner East EA (Hybrid 3)
 - Additional scope for the Western section of the Gardiner (West of Jarvis) mainly resulting from the recommendations contained in a recently completed due diligence condition assessment report
- Based on the cost update by IO, if the project were to proceed as a P3 project:
 - The capital costs would increase by \$1 billion
 - Increase split approximately equally between the section west of Jarvis and the section east of Jarvis

	Original Cost Estimate as at September 2015 \$ millions (As spent dollars *)			Revised Cost Estimate as at August 2016 \$ millions (As spent dollars *)		
	East of Jarvis	West of Jarvis	Total	East of Jarvis	West of Jarvis	Total
Capital Cost	\$960	\$1,500	\$2,460	\$1,428	\$2,054	\$3,482
Professional Services	\$40	\$70	\$110	\$64	\$91	\$155
Total Capital Costs	\$1,000	\$1,570	\$2,570	\$1,492	\$2,145	\$3,637

New Implementation Approach

- New implementation approach is being proposed because:
 - Higher estimated project costs using P3 approach
 - Lack of federal funding
 - Other impending projects affecting construction in the eastern section of the Gardiner
 - > Rail Track Expansion / Unilever GO Station
 - > Port Lands Flood Protection Project
- Now recommending a new approach based on dividing the work on the Gardiner east and west of Cherry Street

New Implementation Approach

West of Cherry Street

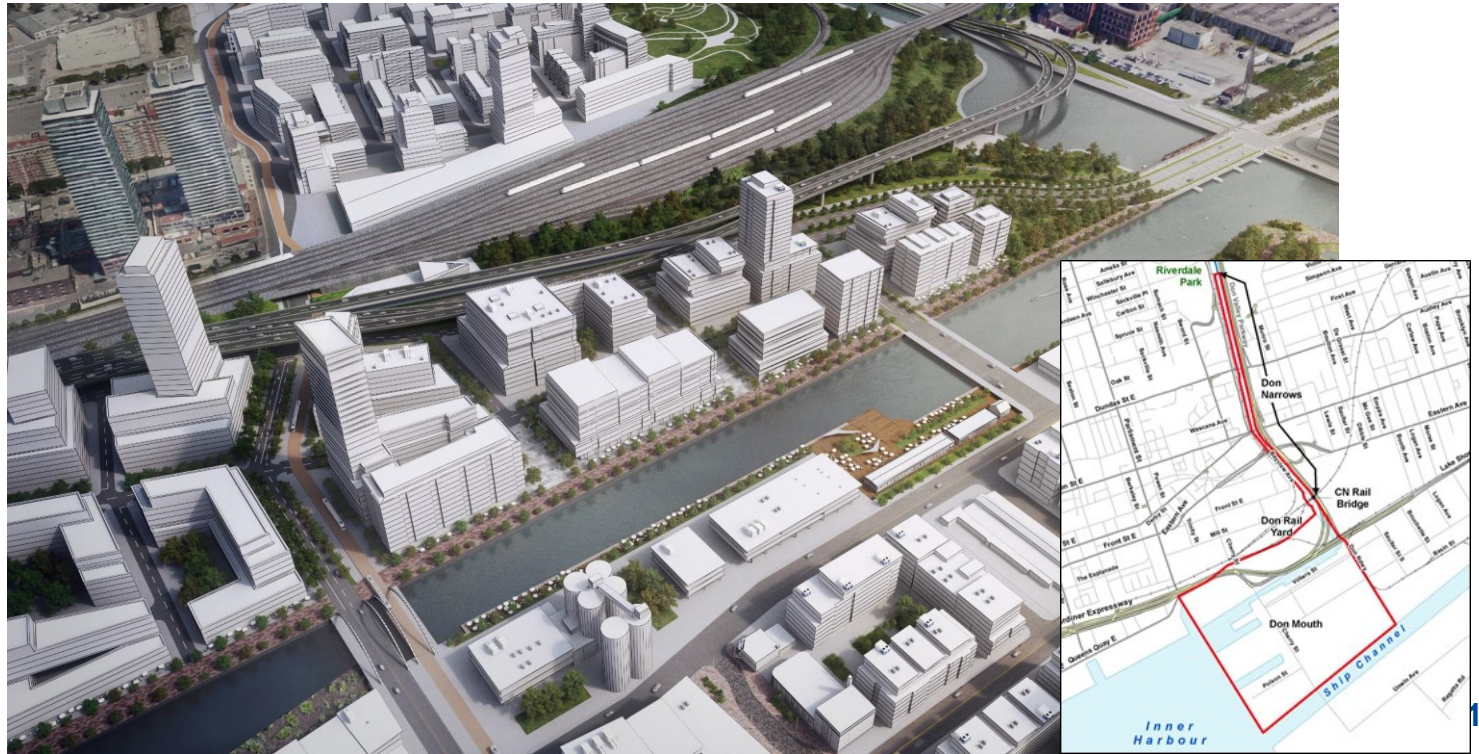
- Series of phased contracts utilizing the traditional design-bid-build approach



New Implementation Approach

East of Cherry Street

- Undertake preliminary engineering design (to 30%), of the Gardiner East Hybrid 3, where the project costs, schedule and risks would be fully assessed
- Incorporate components of the other large scale projects planned within the Gardiner East work zone, in consultation with Metrolinx, Waterfront Toronto, and TRCA
- Upon completion of the preliminary engineering design, a procurement options analysis will be undertaken to ascertain the preferred implementation approach



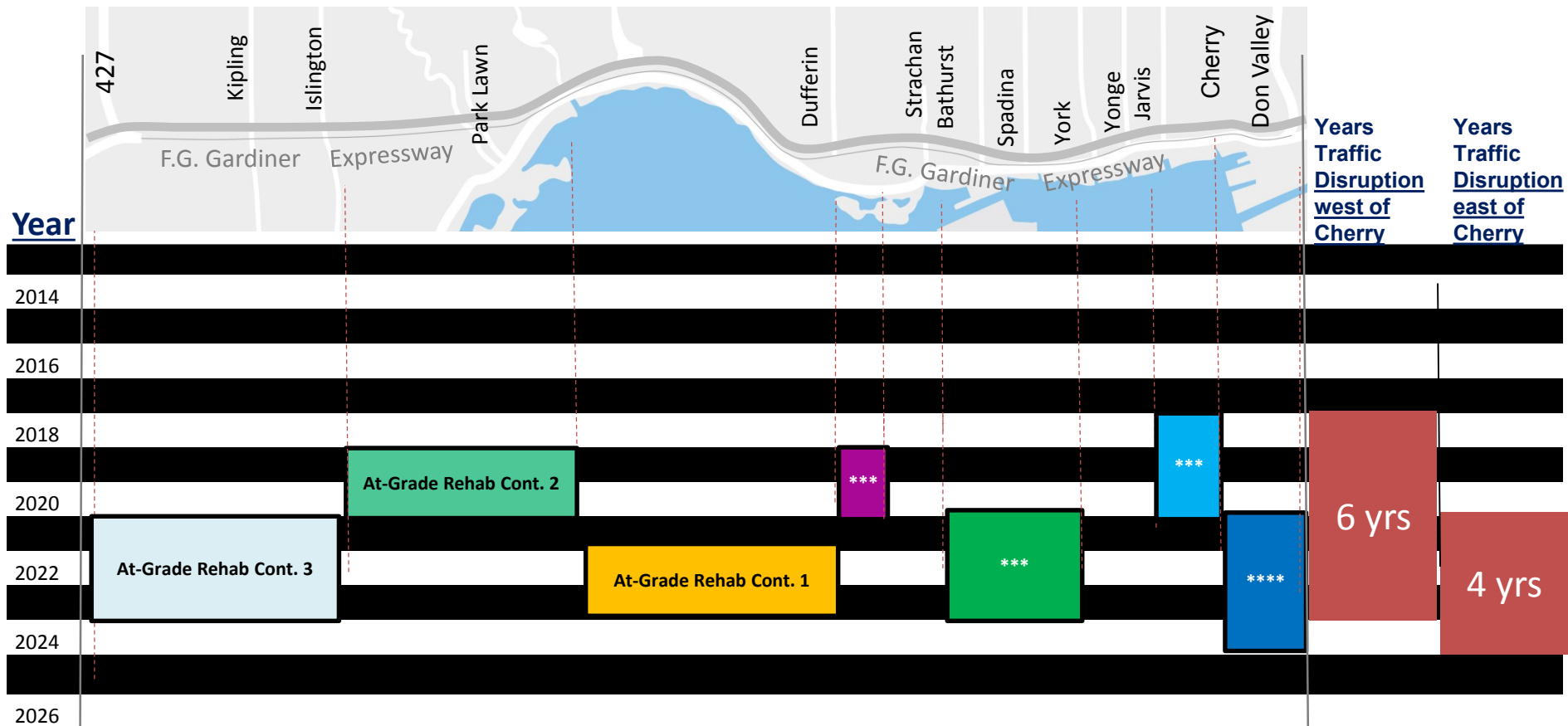
New Implementation Approach

Revised Cash Flow Requirements

- \$2.3 billion is already contained in Transportation Services' approved 10-year Capital Plan
 - Provides the necessary funding for most of the Gardiner rehabilitation needs from Hwy 427 to the Don Valley Parkway, including implementation of the Gardiner Hybrid 3

New Approach	2017	2018	2019	2020	2021	2022	2023	2024	2025	2025	10-Yr Total
New Approach Cash Flows	3	112	215	221	228	250	256	998	0	0	2,283
Transportation Services DRAFT Budget (2017 – 2026)	21	12	12	12	12	12	2,103	29	29	29	2,268
Difference	-18	100	204	209	217	239	1,846	969	-29	-29	15

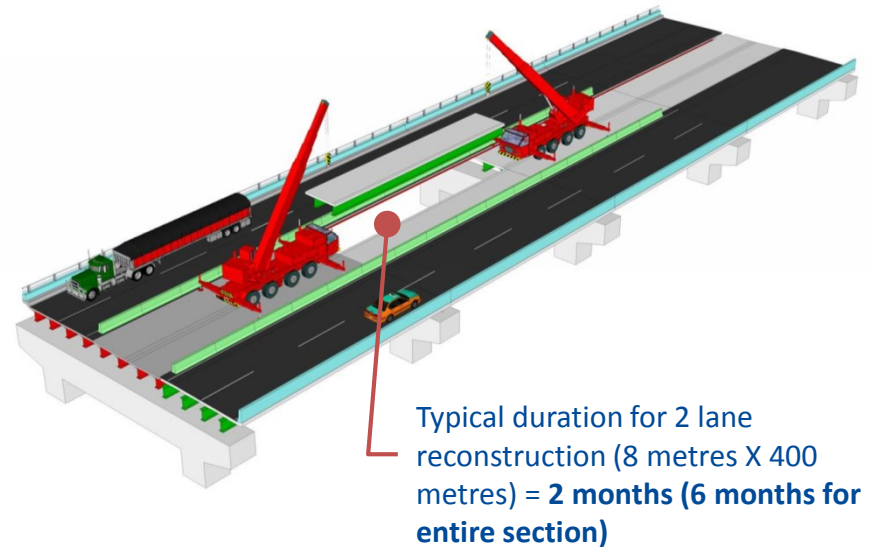
New Implementation Schedule (2018 to 2024)



Note:

- Rehabilitation of concrete box girder section York to Jarvis scheduled for 2035

New Implementation Approach



- Where site conditions permit, an Accelerated Bridge Construction method for the elevated section of the Gardiner
 - This construction method could reduce the implementation schedule by 15% to 40% in comparison to “build-in-place” bridge deck rehabilitation
- The New Implementation Approach will require 24/7 construction in certain areas
- Working with Legal Services, investigate terms and conditions that could be included in construction contracts to incentivize contractors to complete projects ahead of schedule, where feasible

New Implementation Approach

- Engineering & Construction Services has successfully completed several projects on the “at-grade” and “elevated” sections of the Gardiner Expressway within budget and schedule
- Most recently, an 800 metre section of the Gardiner West Deck was completed 27% ahead of schedule
 - This translated to road user cost savings of approximately \$200 million at a construction cost premium of only 8%



Recommendations

1. Authorize staff to proceed with new approach for the implementation of the Revised Strategic Rehabilitation Plan for F.G. Gardiner Expressway.
2. Submit proposed cash flows associated with the new approach for implementation within the Transportation Services 2017-2026 Capital Budget and Plan for Council's consideration.
3. Direct staff to report annually on the status of the implementation of the Revised Strategic Rehabilitation Plan for the F.G. Gardiner Expressway.