Rail Relocation versus Grade Separation Feasibility Study – January 2021 Update

ISSUE

Phase 1 of the Rail Relocation versus Grade Separation Feasibility Study was completed in February 2018. Phase 2 of the study concluded in September 2020. This report fulfills the City Council resolution to report back after completing Phase 2 on the specifics of grade separation options.

BACKGROUND

At its meeting held on May 23, 2017, City Council awarded a contract to HDR Corporation (HDR) for the completion of the engineering study "Rail Relocation versus Grade Separation Feasibility Study" with the intent of examining options for reducing rail delays throughout the city.

The study was separated into two phases. Phase 1, which was completed in February 2018, included a detailed economic evaluation of either relocating the existing Canadian Pacific Railway (CP) line outside of the city limits or constructing grade separations at some or all of the nine priority at-grade rail crossings.

At its Regular Business Meeting held on March 26, 2018, City Council resolved, in part:

> "2. That the Administration report back for a further discussion of individual grade separation options following the completion of the Phase 2 study."

At the Standing Policy Committee on Transportation meeting held on June 1, 2020, the final report for Phase 2 was received as information.

At the Standing Policy Committee on Transportation meeting held on September 8, 2020, responses from CP and Canadian National Rail (CN) on Phase 2 of the study were received as information.

CURRENT STATUS

Shared Rail Corridor

A conceptual design to provide a shared corridor for CN and CP rail operations adjacent to and through the City of Saskatoon has been completed. Responses were received from both CN and CP and neither railway expressed interest in pursuing the shared corridor concept further.

DISCUSSION/ANALYSIS

During Phase 1, preliminary design concepts for nine grade separations were developed. The final project report included with the Phase 1 report to the Standing Policy Committee on Transportation (March 2018) included functional designs for each grade separation. A summary of each solution is provided below along with estimated

total costs and benefits (in 2017 dollars), cost-benefit ratio, and cost-benefit ratio (over the life of the project):

Location	CN[1] / CP[2]	Type of Grade Separation	Estimated Total Costs	Estimated Total Benefits	Cost-Benefit Ratio	Cost-Benefit Ratio (10% discount rate)
22nd Street West	CP	Road underpass	$48.0M	$46.5M	0.97	0.20
Idylwyld Drive / 25th Street West	CP	Road underpass	$61.1M	$48.4M	0.79	0.13
3rd Avenue North / 33rd St West	CP	Road overpass (interchange)	$68.9M	$21.1M	0.29	0.07
Preston Avenue	CP	Road overpass	$26.5M	$23.3M	0.88	0.18
Central Avenue	CP	Road overpass	$29.1M	$14.9M	0.51	0.07
33rd Street West	CN	Rail overpass	$44.7M	$14.0M	0.32	0.07
Marquis Drive	CN	Road overpass	$23.1M	$13.7M	0.59	0.07
11th Street West	CN	Road overpass	$43.7M	$19.9M	0.46	0.09
51st Street West	CN	Road overpass	$29.4M	$16.8M	0.57	0.13

Notes: [1] The CN line is the Warman Sub
[2] The CP line is the Main Line

Grade separations would provide the benefits of savings to travel time, improved safety, avoided emissions, and reduced vehicle operating costs. However, many locations examined have significant private property impacts and create other issues including:

- Permanent loss of access to and/or from the arterial street.
- Significant business disruption during a minimum of two years construction.
- Underpasses present significant concerns for storm water management and crime prevention through environmental design (CPTED).
- Both underpasses and overpasses introduce vertical concrete walls up to seven metres in height. For overpasses, these structures would physically separate neighbourhoods, be visually unpleasant, and may be taller than adjacent properties.

Overpasses treat vehicular traffic with priority at the expense of pedestrians and cycling. Overpasses and underpasses also present significant barriers to accessibility and mobility for non-motorized road users from the long uninterrupted grades at relatively steep slopes.

FINANCIAL IMPLICATIONS

The financial implications of individual grade separations were identified in Phase 1 of the project as per the table above.

OTHER IMPLICATIONS

There are no privacy, legal, or social implications identified as a result of this report. Environmental implications were quantified in Phase 1 of the project.

NEXT STEPS

The Administration will place three of the road grade separations on the Saskatoon Transportation Strategy Infrastructure List and prioritize for further planning through that process:

- Preston Avenue – There are no major concerns with road connectivity or impacts on adjacent sites. However, potential connectivity to the proposed 33rd Street West river crossing would become more complex and future development in the University of Saskatchewan Sector along this section of Preston Avenue may be impacted by the proposed structure.
- 11th Street West– There are no major concerns with road connectivity or impacts on adjacent sites. The proposed reconfiguration of the interchange with Circle Drive would be coordinated with the long-term recommendations of the Circle Drive and 22nd Street West functional planning study currently underway.
- Marquis Drive – There are no major concerns with road connectivity or impacts on adjacent sites.

The remaining crossings have the greatest impacts on adjacent private property and development and are not recommended for further development.

Report Approval

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