City of Richmond

Report to Committee

To:	Public Works and Transportation Committee	**Date:**	November 1, 2016
From:	John Irving, P.Eng. MPA Director, Engineering	**File:**	10-6340-20- P.15305/Vol 01
Re:	**Horseshoe Slough Pump Station**		

Staff Recommendation

That the design concept for the Horseshoe Slough Drainage Pump Station Upgrade as detailed in Attachment 1 of the staff report titled, "Horseshoe Slough Pump Station", be approved.

John Irving, P.Eng. MPA
Director, Engineering
(604-276-4140)

Att. 1

REPORT CONCURRENCE	
CONCURRENCE OF GENERAL MANAGER	
REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE	INITIALS: CJ
APPROVED BY CAO for	

Staff Report

Origin

The Horseshoe Slough Drainage Pump Station was constructed in the late 1970's. Council approved an upgrade to this drainage pump station as part of the 2016 Capital Program. Staff have advanced the design to the point whereby the general layout and architectural features have been identified.

The purpose of this report is to provide Council information regarding the intended pump station layout, including potential architectural and artistic features.

This report supports Council's 2014-2018 Term Goal #6 Quality Infrastructure Networks:

> *Continue diligence towards the development of infrastructure networks that are safe, sustainable, and address the challenges associated with aging systems, population growth, and environmental impact.*

Analysis

The City's extensive flood protection and drainage system includes 49 kilometres of dikes, a series of ditches/canals, underground pipe and 41 drainage pump stations. The drainage system is designed to prevent the City from flooding during up to a 1:10 year rainfall event.

The existing Horseshoe Slough Drainage Pump Station services areas adjacent to No. 5 Road, roughly bounded by the south dike, Blundell Road and Shell Road. This station was constructed in the late 1970's, contains old, antiquated equipment and is in need of a pumping capacity increase to adequately meet current flood protection standards.

Design of the upgraded Horseshoe Slough Drainage Pump Station commenced earlier in 2016 and has advanced to a point whereby the general layout and architectural features have been identified (Attachment 1).

In general, the architectural character is responding to the utilitarian aspects of the building functions and the backdrops of the adjacent green space of Woodwards Landing and surrounding trails on Dyke Road, while the architectural expression is designed to respond to the various scales and views. The conceptual design allows for low maintenance in response to potential vandalism and additionally takes advantage of the opportunity to be perceived as an amenity for local recreational users in the area.

Artistic elements of this pump station will celebrate the history of dikes and drainage within the City of Richmond using old infrastructure as display items and informational murals on the side of the building. The murals provide an opportunity for education and graphical symbolism to be integrated within the infrastructure, along with an opportunity to tie into the upcoming Canada 150 celebrations. As the detailed design progresses, these features will continue to be refined and integrated into the overall project.

This station is also incorporated into the dike trail system along the south dike. Accordingly, the pump station maintenance accesses will be appealing and complimentary to the existing trails while at the same time providing the necessary means for pump station operations and maintenance activities. It is also proposed that short sections of the adjacent dike be raised to 4.7 metres geodetic, which is consistent with the City's Long Term Flood Management Strategy to address sea level rise. The current elevation of the dike is approximately 3.3 metres geodetic.

It is anticipated that design will be completed by Spring 2017, with construction to follow immediately thereafter. It is anticipated that construction will take place over a period of approximately six months.

Financial Impact

Funding to complete the Horseshoe Slough Drainage Pump Station upgrades has been approved by Council as part of the 2016 Capital Program.

Conclusion

The Horseshoe Slough Drainage Pump Station has been approved in the 2016 Capital Program. Design has progressed to the point where the general layout and architectural features/opportunities have been identified. Subject to Council's support, work will continue on advancing the design concept to a full detailed design.

Peter Brennert
Project Manager
(604-247-4925)

PB:pb

Att. 1: Horseshoe Slough Drainage Pump Station – Design Images

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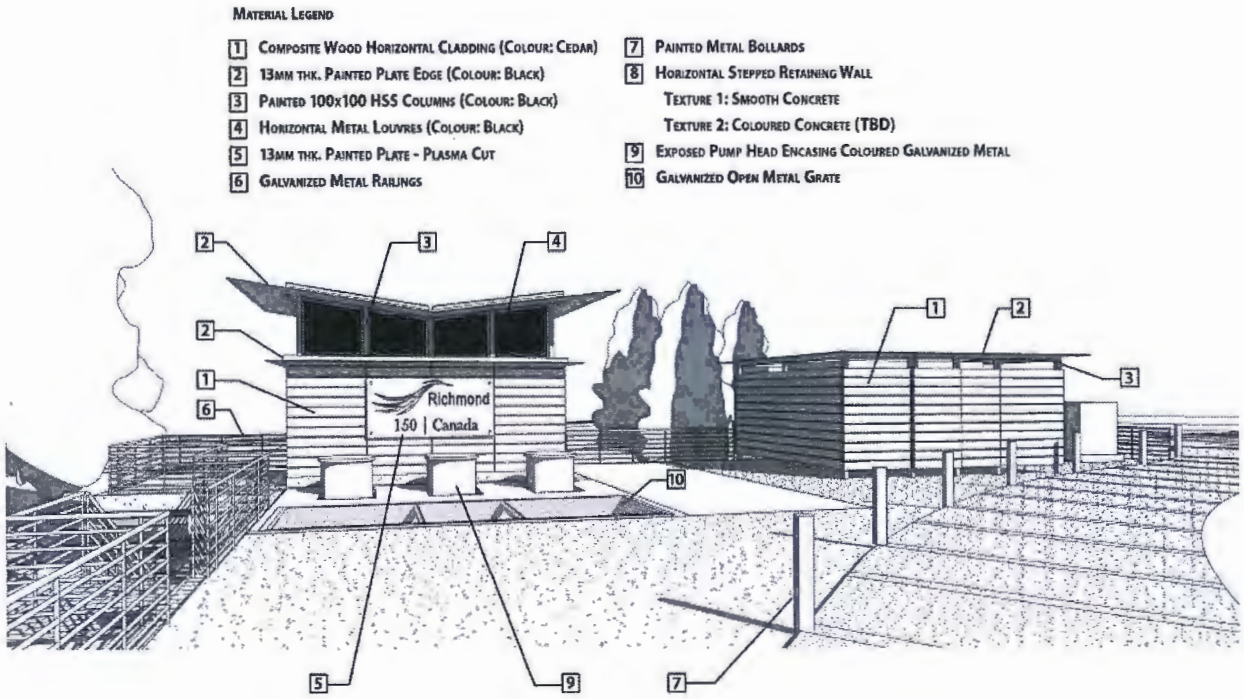
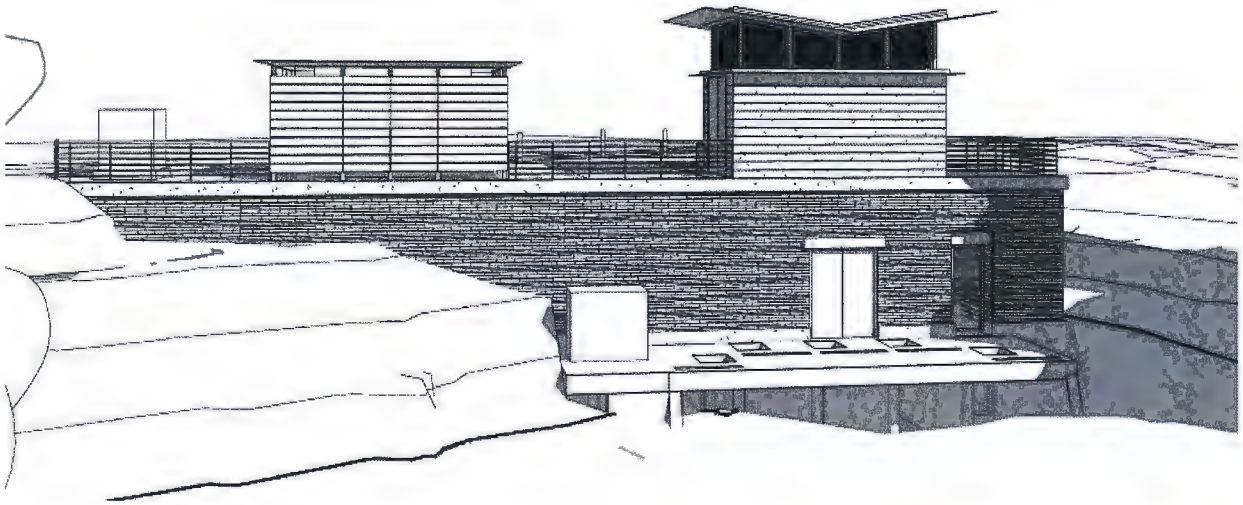
1. Street Level View

2. Dike View with Preliminary Material Choices



3. Slough View



4. Aerial View