



City of Richmond

Report to Committee

To: General Purposes Committee

Date: October 5, 2017

From: John Irving, P.Eng. MPA
Director, Engineering

File: 10-6160-07-01/2017-
Vol 01

Re: Brazilian Elodea Management: Mariner's Village (11291 - 11491 7th Ave)

Staff Recommendation

That a letter be sent to the BC Ministry of Forests, Lands and Natural Resource Operations, to request their immediate involvement and the allocation of appropriate funding to manage Brazilian elodea infestations in Richmond.

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

REPORT CONCURRENCE		
ROUTED TO:	CONCURRENCE	CONCURRENCE OF GENERAL MANAGER
Parks Services Sewerage & Drainage Law	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	
REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE	INITIALS: 	APPROVED BY CAO

Staff Report

Origin

Staff have encountered challenges associated with the eradication of Brazilian elodea (elodea) from a water feature located on City property that is currently exclusively used by residents in Mariner's Village. This report is seeking Council's support to issue a letter to the Minister of Forest, Lands and Natural Resource Operations for their immediate action to manage Brazilian elodea infestations in Richmond.

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.

6.1. Safe and sustainable infrastructure.

Background

Mariner's Village is a private condominium development constructed in 1973, located between 11291 and 11491 7th Ave in Richmond and consisting of several single- and multi-family dwellings (Attachment 1). A pond feature associated with the development is located on City property and is situated between the site and the west dike.

The pond is approximately 500 metres (m) long by approximately 25 m wide and is a linear water feature that forms part of the City's drainage system in the area. There are two embayments where the pond is notably larger and two gated pedestrian bridges have been installed to provide access to the multi-use pathway along the dike from Mariner's Village (Attachment 2).

In 2014, staff were notified by the Strata of the presence of elodea in the pond, which was likely the result of the improper disposal of the contents of an aquarium. Elodea is a highly invasive aquatic plant that poses a significant risk to flooding infrastructure and the environment as it has the ability to plug drainage and inhibit native vegetation. Currently, there are only two locations in BC that elodea is known to exist (including this one). As such, elodea is one of the City's priority species under the *Invasive Species Action Plan* and is provincially-mandated under the *Early Detection Rapid Response Plan (EDRRP)*. The elodea infestation within the pond feature has the potential risk to spread to the adjacent Sturgeon Banks Wildlife Management Area. Although elodea is a freshwater plant, staff have been monitoring the Sturgeon Banks as there may be pockets of freshwater that are at risk of infestation.

The City currently has a limited role in addressing the elodea but carries the risk that the infestation could spread beyond the pond. Several City programs can assist the Province with the elodea infestation including:

- Sewerage and Drainage Program – the pond is not currently included as part of the City’s regular maintenance activities and City crews only undertake ‘as needed’ activities to control vegetation on weirs and displace nuisance beavers.
- Invasive Species Action Plan – the City adopted the *Invasive Species Action Plan* in January 2016 to mitigate the significant risks posed to our civil and ecological resources from the spread of invasive species.
- Ecological Network Management Strategy – the objectives set out within the strategy can be used to enhance the biological value of the property and maintain ecological connectivity to the surrounding lands through naturalization of the pond rather than a constructed water feature.
- Dike Master Planning – the west side of the pond is bounded by the west dike, which will be raised approximately 1.5 m over the next 25 to 75 years to accommodate climate change induced sea level rise. As a result of the raising efforts, the west dike will be approximately 10 m wider than it is today and some (or all) of the space required to widen the dike may come from the City’s property currently occupied by the pond.
- Parks Open Space Strategy – Currently Parks does not provide any pond maintenance support to the strata. Future activities could include supporting a more desirable open and accessible public space.

Provincial Early Detection Rapid Response Plan

The Province is the lead agency for resourcing the elodea treatment efforts under the EDRRP, but benefits from coordination and engagement from all levels of government and land owners. The program is a proactive approach to managing new invasive species to BC that prevents establishment and subsequent impacts through targeted species risk assessment, verification, containment and eradication. Activities are guided by the EDRRP, which provides detailed direction on the decisions and actions required to address new incursions anywhere in BC. The Provincial government, through the Inter-Ministry Invasive Species Working Group, leads implementation of BC's EDRRP in partnership with federal agencies, with cooperation of key land managers and stakeholders throughout B.C. and adjacent jurisdictions.

As such, City staff have been working closely with the Province to determine a suitable management plan for the elodea since 2015, and have supported a remedial trial with City resources in 2016. The trial was ineffective and for this reason, the City and Province continued to explore alternative solutions. It was determined that alternative solutions come at a significantly higher cost and for this reason, the Province has not been able to commit the necessary resources to address the issue to date. In October 2017, City staff coordinated a meeting onsite with the Province to determine immediate action efforts and are presently waiting for further support.

Given the current situation, a recommendation is included in this report to send a letter to the Minister of Forests, Lands and Natural Resource Operations, requesting the immediate deployment of appropriate resources.

October 5, 2017

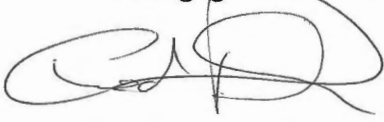
- 4 -

Financial Impact

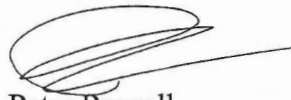
None at this time. The City does not currently have operating or capital budgets allocated for managing the elodea but intend on developing a scope of work in partnership with the Province as needed.

Conclusion

There is a need to address the risks associated with the spread of elodea to protect the City's broader drainage system and natural environment but the Province has the primary responsibility to address the infestation. To ensure that an effective, long term management plan for the pond is prioritized it is recommended that staff proceed with issuing a letter to the Province and continue to engage their senior officials for action.



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CP:th

- Att. 1: Site location
- 2: Site photographs



GP - 16

- POND BOUNDARY
- FOUNTAIN
- PHOTO KEY



MAP DRAWING INFORMATION:
 DATA PROVIDED BY CITY OF RICHMOND
 MAP CREATED BY: JLC
 MAP CHECKED BY: JAW
 MAP PROJECTION: NAD 1983 UTM Zone 15N



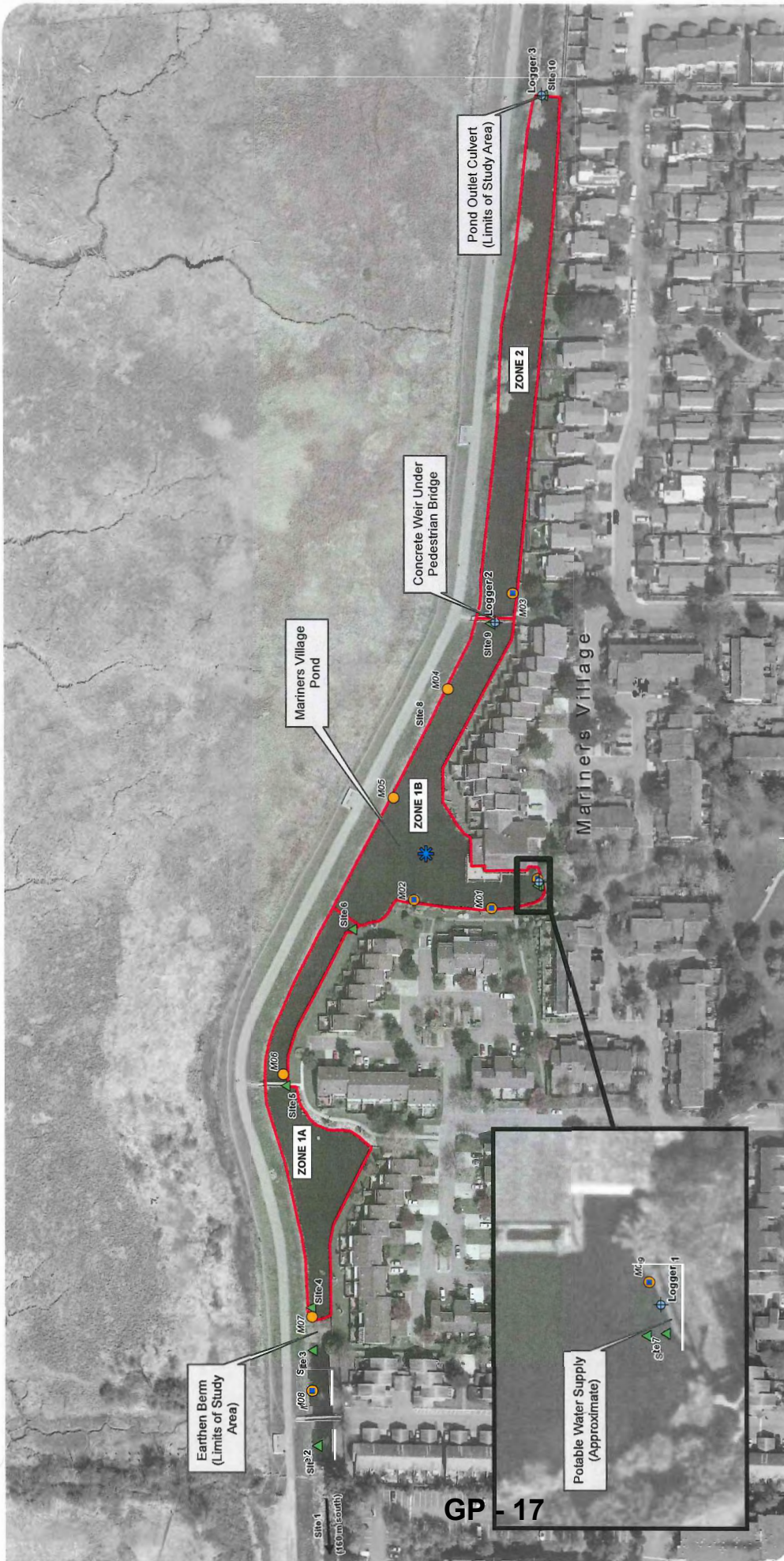
0 10 20 40 Meters
 SCALE 1:1,500

FILE LOCATION: G:\GIS\152109\FIGURE 1 - SITE PLAN.MXD
 PROJECT: 15-2108 STATUS: FINAL DATE: 06/22/2015

CITY OF RICHMOND
 MARINERS VILLAGE
 POND ASSESSMENT

SITE LOCATION PLAN
 FIGURE 1



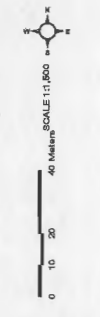


CITY OF RICHMOND
 MARINERS VILLAGE
 POND ASSESSMENT
**WATER QUALITY AND
 DATA LOGGER LOCATIONS**
 FIGURE 2



CHLORINE SAMPLING LOCATION
 MINNOW TRAP LOCATION
 WATER QUALITY MEASUREMENT LOCATION
 DATA LOGGER LOCATION
 POND BOUNDARY
 FOUNTAIN

MAP DRAWING INFORMATION:
 DATA PROVIDED BY CITY OF RICHMOND
 MAP CREATED BY LKD
 MAP PROJECTION: NAD 1983 UTM Zone 10N



FILE LOCATION: G:\GIS\151108\FIGURE 2 - SAMPLING LOCATIONS (2)MXD
 PROJECT: 15-2105
 DATE: 06/22/2015
 STATUS: FINAL