



City of Richmond

Report to Committee

To: Parks, Recreation and Cultural Services
Committee

From: Serena Lusk
General Manager, Community Services

Re: Moorage at Steveston Harbour

Date: February 6, 2018

File: 06-2345-20-ILAN1/Vol
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Staff Recommendation

That the staff report titled "Moorage at Steveston Harbour", dated February 6, 2018, from the General Manager, Community Services, be received for information.

Serena Lusk
General Manager, Community Services
(604-233-3344)

Att. 5

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

Staff Report

Origin

At the November 28, 2017, Parks, Recreation and Cultural Services (PRCS) Committee meeting, staff discussion occurred regarding moorage at Steveston Harbour as follows:

(i) *Moorage at Steveston Harbour*

The Chair distributed various renderings of piers along the Steveston waterfront (attached to and forming part of these Minutes as Schedule 1) and referenced the discussion that took place at the October 2017 Parks, Recreation and Cultural Services Committee meeting regarding a 300-foot floating dock along the Steveston waterfront.

As a result, staff received the following referral:

That:

- (1) staff examine costs for sheet piling beside the Imperial Landing Pier;*
- (2) staff examine costs for replacing the Gillnet Pier, including piles for a 300-foot float at Phoenix Gillnet Loft; and*
- (3) staff examine costs for piles for a 300-foot at Phoenix Gillnet Loft; and report back.*

The purpose of this report is in response to the above referrals, and to present the scope of work required and estimated costs of each for Council's consideration.

This report supports Council's 2014-2018 Term Goal #2 A Vibrant, Active and Connected City:

Continue the development and implementation of an excellent and accessible system of programs, services, and public spaces that reflect Richmond's demographics, rich heritage, diverse needs, and unique opportunities, and that facilitate active, caring, and connected communities.

2.3. Outstanding places, programs and services that support active living, wellness and a sense of belonging.

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.*
- 6.2. Infrastructure is reflective of and keeping pace with community need.*

This report is responsive to Council's adopted Steveston Waterfront Strategy vision of:

A world-class, internationally recognized maritime waterfront that respects the past and lives the future. The Steveston Waterfront area, with its working fishing harbor, historic village centre, active street life, festivals, and beautiful riverfront setting, will be a unique and popular place to live, work, and play and a key visitor destination for the region.

Analysis

Background

Since 2002, there have been numerous referrals and proposals to investigate potential opportunities at Imperial Landing, Britannia Heritage Shipyards, and the City-owned water covered Lot H, located outside the dike at Imperial Landing. Many of these proposals were considered to be unfeasible due to high costs, environmental issues, permit challenges, legal implications, and logistical considerations.

Future Floating Dock at Garry Point Park

At the November 14, 2017, Council meeting, Council approved the following:

"That Option 1: New 600 foot Breakwater Floating Dock as described in the staff report titled "2017 Garry Point Park Legacy Pier and Floating Dock," dated October 4, 2017, from the Interim Director, Parks and Recreation, be selected to provide staff direction regarding future advanced planning, detailed design and Capital submissions and that the installation of a 300-foot permanent float on the City-owned waterlot portion, a 300-foot temporary float on the provincial waterlot portion and a removable section in between the permanent and temporary floats be included within the Option 1 concept."

A capital submission for this project is expected in 2019. The reference in the referral for a 300-foot temporary float to be removable suggests the potential to relocate this structure to another location, when required. This report presents concepts on how a future temporary 300-foot float from Garry Point could be utilized for special events, on a seasonal basis at the Britannia Shipyards, or as an extension to the Gillnet Pier.

Further consideration of the logistics involved with transporting these floats between Garry Point and the Phoenix Cannery or Britannia Shipyards waterfront would be required. The most recent transportation and set up costs during the "King of the Sea" – Kaiwo Maru event from May 3 to 8, 2017, were approximately \$80,000. This included dismantling and reconnecting the gangways, electrical, water, and approach floats, as well as the contract for the crane barge, pilot and tug boats required for each move. If the intention is to move the floats on an annual basis, the transportation and set up costs would need to be considered as part of the City's ongoing operational budget.

Referral Response

1. Sheet Piling Beside the Imperial Landing Pier

Sheet pile wall conceptual estimate: \$1.5M – \$2M

Construction of a sheet pile wall along a portion of the north property line of the City-owned water covered Lot H could provide the potential for additional moorage space, provided the City receives approval from the Ministry for the use of their water lot to construct additional floating docks. Prior to 2002, as part of the former B.C. Packer's waterfront infrastructure, there were two floating docks (approximately 5m wide x 60m long) located along this stretch of Imperial Landing, supporting the moorage of fishing vessels for the canneries. These two finger docks were situated parallel to a concrete pier along the west side of the water lot (Attachment 1).

Through the years, both the age and decay of the timber structures, the erosion of the foreshore, and the sedimentation carried down the Fraser River took its toll on these structures. The floating docks and piles had to be removed, and concrete rip-rap was placed along this stretch of dike to minimize further erosion. Consequently, sediment has now accumulated to the point that moorage is no longer possible in this area, unless significant dredging is completed.

Based on comments from the November 27, 2017, PRCS Committee meeting, to recreate a moorage opportunity similar to what previously existed, a sheet pile wall constructed along a portion of Lot H (approximately 125 lineal metres) could provide the necessary stabilization of the foreshore (Attachment 2). This would allow dredging to be done as close to the dike as possible, with depths as deep as the secondary navigational channel, which is approximately -3.5 to -4.0 metres.

The recent sheet pile wall construction occurring at the Steveston Harbour Authority's operations serves as a guide to the estimated costs for the sheet pile wall, along with conceptual estimates provided by a Marine Engineering Consultant in 2012. The estimated costs range from \$10,000 to \$15,000 per lineal metre of sheet pile wall, depending on the size, material, and structural engineering of the wall required. Additional geotechnical, environmental, and marine structural engineering investigation would be required to confirm the size, layout, and type of wall for this location.

Should Council wish to consider reinstating what previously existed as shown in Attachment 1, this will require the reconstruction of the "finger docks," the piles to secure them, and dredging of the subject area.

Costs associated with the reconstruction of the finger docks and dredging operations are not included in this report. A comprehensive engineering, environmental, and permitting investigation are required to determine an order of magnitude costs for these items.

2. Replacing the Gillnet Pier, including piles for a 300-foot float at Phoenix Gillnet Loft

Conceptual estimates for a new pier \$1M – \$1.5M

Conceptual estimates for piles to secure the future 300'-0 temporary float \$150K

Estimated costs for the transport of the future floating dock would be \$80,000 per round trip.

Estimates for a new approach access structure to the pier is to be determined (i.e., as part of the Phoenix Net Loft building reconstruction or as a separate piled foundation structure).

The Gillnet Pier previously connected the old Can Loft Cannery buildings to the Gillnet Loft, now known as the Phoenix Net Loft, accommodated a series of fishing vessels along the stretch of timber piers and docks (Attachment 3). The Can Loft Cannery buildings and piers no longer exist, only the decaying remnants of the Gillnet Pier's piled foundation and frame remain at the site.

The Gillnet Pier was previously accessed from the Phoenix Net Loft. In 2010, the building's apron collapsed into the river, the Gillnet Pier footprint is no longer accessible from any building, or land access.

In order to reconstruct the Gillnet Pier and to accommodate the future 300'-0 temporary float from Garry Point, the scope of work would involve the following (Attachment 4):

- Construction of a new piled foundation pier, approximately 160'-0 in length x 16'-0 in width;
- The installation of six new piles to secure the 300'-0 temporary float; and
- Construction of a new approach to access the Gillnet Pier, for example, a pier structure or a new building apron connected to the Phoenix Net Loft.

Estimates to reconstruct a new pier along the old foot print range from \$400 per square foot to over \$700 per square foot, depending on the type of materials, size, and the architectural features desired for the structure. Steel piles are recommended for the piers' foundation and deck frame as it would typically last much longer than timber materials, however, it could cost twice as much as timber piles.

3. Cost for piles for a future 300'-0 float at Phoenix Gillnet Loft

Conceptual estimate to install new piles to secure the future 300-0 temporary float \$150K

Estimated costs for the transport of the future floating dock would be \$80,000 per round trip.

Should Council wish to see the installation of new piles for a future 300'-0 float at Phoenix Net Loft to host special events and to increase moorage capacity at Britannia Heritage Shipyards, it is recommended to place the future float as an extension to the existing 600'-0 floats already

available on site (Attachment 5). This would expand the moorage opportunities for the annual Maritime events at Britannia on a temporary basis, when the floats are not located at Garry Point.

To have a separate stand-alone float directly connected to the Phoenix Net loft, a new approach access would be required, similar to the concepts above available for the Gillnet Pier connections.

The following table summarizes the three costs explored in this report:

Table 1

	Description	Cost
1	Sheet Piling Beside the Imperial Landing Pier.	\$1.5M to \$2M
2	Replacing the Gillnet Pier, including piles for a 300-foot float at Phoenix Gillnet Loft. Cost for piles for a future 300'-0 float. Cost for transporting the future 300'-0 float.	\$1M to \$1.5M \$150K +\$80,000 per round trip
3	Cost for piles for a future 300'-0 float at Phoenix Gillnet Loft. Cost for transporting the future 300'-0 float.	\$150K + \$80,000 per round trip

Next Steps

Further environmental, structural, logistical, and marine engineering investigation are required for all three concepts presented in this report. A detailed design, along with permit applications, would need to be submitted for review by Provincial and Federal agencies.

The Ministry of Forests, Lands, and Natural Resources Operations (FLNRO) review and evaluation process will likely take well over a year for any proposed works on the water. This estimate is based on the current timeline for approval of the Steveston Channel Dredging Phase 2, and the Hollybridge Pier construction applications.

Financial Impact

None.

Conclusion

This staff report is in response to a referral from the November 28, 2017, PRCS to investigate opportunities for additional moorage in Steveston Harbour. Three concepts have been presented based on the referral. The first focuses on Imperial Landing and the potential to recreate useable moorage space by installing a sheet pile wall along a portion of the foreshore. The other two concepts provide options for recreating the Gillnet Pier, and the potential to relocate the future 300'-0 temporary float from Garry Point into Steveston Harbour for extended moorage space.

Depending on Council's intention regarding the scheduling and the number of times the future 300'-0 long temporary float is to be moved from Garry Point into Steveston Harbour, an ongoing

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operational budget impact of \$80,000 to transport the floating dock would also need to be considered.

Should Council wish to proceed with any of the concepts, further engineering, permits, and environmental investigation would be required for a detailed design estimate for future construction and consideration, as part of the Capital budget process.

In addition, community need and operational considerations would need to be reviewed in detail.



Marcus Liu
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- Att. 1: Imperial Landing Aerial Photo 1999
- 2: Proposed sheet piling beside the Imperial Landing Pier
- 3: PRCS Referral - Schedule 1 Attachment (Drawing dated July 21, 2001)
- 4: Replacing the Gillnet Pier, including piles for a 300-foot float at Phoenix Gillnet Loft
- 5: New Piles for a future 300'-0 long floating dock

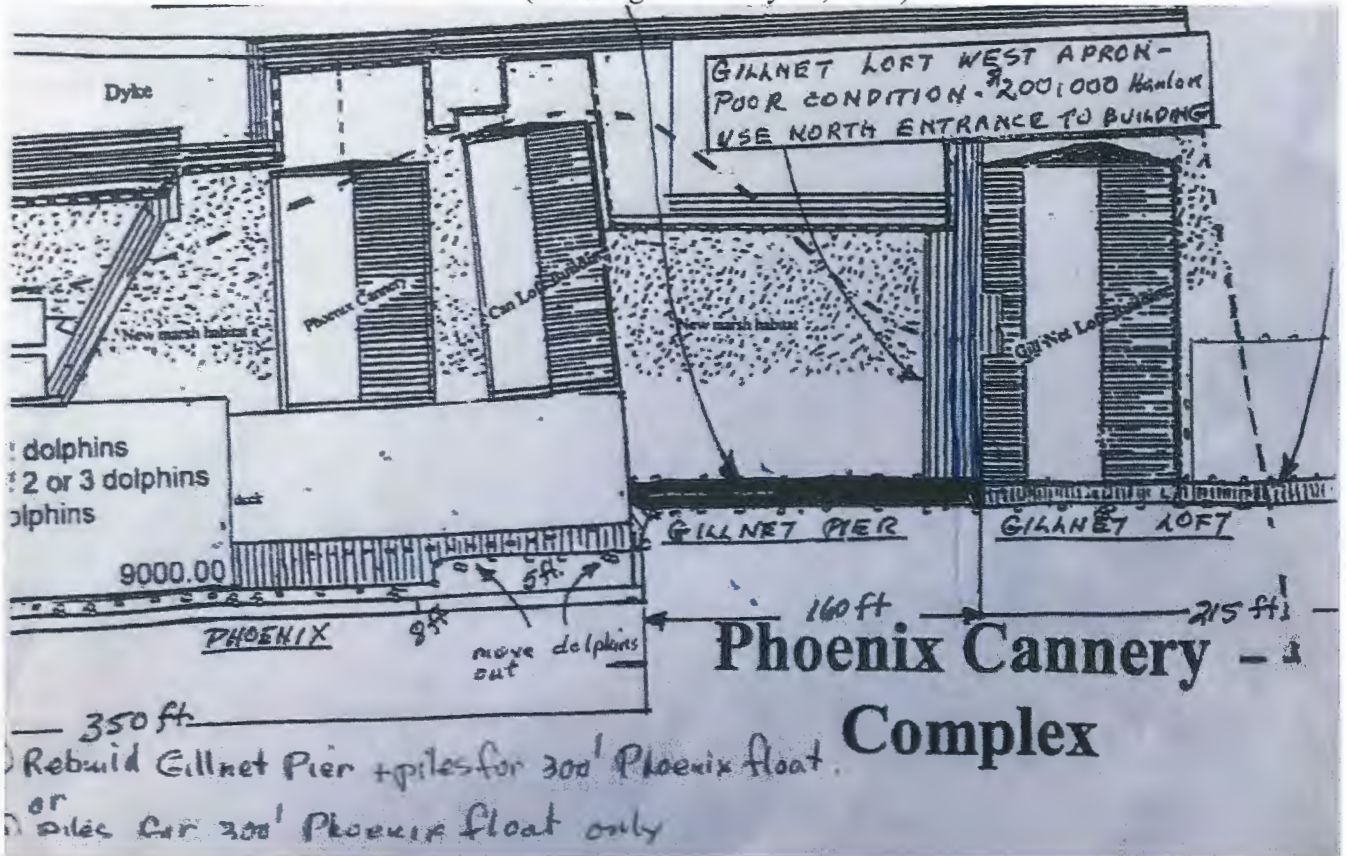
Imperial Landing Aerial Photo 1999



Proposed sheet piling beside the Imperial Landing Pier



PRCS Referral - Schedule 1 Attachment (Drawing dated July 21, 2001)



Gillnet Pier (2013 Photo)



Replacing the Gillnet Pier, including piles for a 300-foot float at Phoenix Gillnet Loft



2016 Aerial Photo

New Piles for a future 300'-0 long floating dock

