



September 5, 2023

TO: Park Board Chair and Commissioners
FROM: General Manager – Vancouver Board of Parks and Recreation
SUBJECT: Jericho Beach Park Pier - Next Steps

RECOMMENDATION

THAT the Vancouver Park Board direct staff to deconstruct Jericho Beach Park Pier while keeping in place and suitably reinforcing the breakwater so as to maintain protection of the Jericho Sailing Centre harbour.

REPORT SUMMARY

The purpose of this report is to share an update on the Jericho Beach Park Pier (“the pier”), to present considerations for next steps, and to summarize the rationale for the actions recommended by staff. Staff are seeking a Board decision so that staff can finalize an insurance claim and proceed with deconstructing the pier while keeping in place and suitably reinforcing the breakwater. Staff are making this recommendation based on the following:

- The pier is presently closed due to significant storm damage;
- Sufficient funding for construction of a new pier is not presently available;
- Deconstructing the pier would be a necessary first step of any future renewal effort;
- Deconstructing the pier now will mitigate existing safety risks and mitigate costs associated with future storm damage; and
- The existing breakwater component of the pier shelters the Jericho Sailing Centre harbour from oncoming waves.

BOARD AUTHORITY/ PREVIOUS DECISIONS

As per the [Vancouver Charter](#), the Park Board has exclusive jurisdiction and control over all areas designated as parks in the City of Vancouver. This includes structures, programs, activities, fees, and improvements that occur within those parks.

At the [November 6, 2017, Committee Meeting](#), the Board gave approval for a proposed concept design for the reconstruction of Jericho Beach Park Pier, and directed staff to finalize a collaborative Memorandum of Understanding with the Disabled Sailing Association of BC (now Adaptive Sailing Association of BC) and develop a fundraising plan.

BACKGROUND

The pier is located within Jericho Beach Park on lands that are archaeologically, culturally, and ecologically significant to the Host Nations. The pier is timber platform structure built on 80 year old piles. Originally a component of the Canadian Air Force base located at this site circa 1942, the pier underwent refurbishment in 1977 and has been maintained and operated by the

Vancouver Board of Parks and Recreation since that time. The pier is now at the end of its service life.



Fig. A: Photo of Jericho Pier and Jericho Sailing Centre

Service Uses and User Groups

When the pier was operational, residents and visitors would visit to enjoy the views of Vancouver's Burrard inlet. The end of the pier was a fishing and crabbing spot, and the connected concrete float was used by marine rescue vessels. The pier has a timber breakwater and rock mound embankment, visible in Fig C below, which shelter Jericho Sailing Centre (JSC) harbour from oncoming waves.

Repeated Storm Damage and Climate Change

Over the years, the pier has been repaired several times in response to storm damage. During recurring storm surge events, the pier deck has been fully inundated. Climate change is increasing the frequency of severe storm events, and sea level rise is expected to significantly impact this site, as shown in Appendix A.

Current Condition

In November 2021, the pier suffered moderate storm damage which prompted the closure of the pier. In January 2022, a combined storm surge and king tide event caused significant additional damage as the deck was flooded and impacted by log debris as shown in the images below. The pier remains closed to the present day.



Fig. B: Deck inundation during Jan 2022 storm



Fig. C: Log debris accumulated following January 2022 storm. Breakwater visible on near side of pier

Renewal Plans

A proposed concept was presented to the Board in November 2017 and received Board approval. This concept contained an order-of-magnitude construction cost estimate of \$16M in 2017 dollars. Accounting for inflation, cost escalations, contingencies, and ancillary costs, staff estimate the possible and approximate cost today could be \$21-25M.

The Adaptive Sailing Association of BC (ASABC) is an independent charity that provides people with physical disabilities opportunities to experience sailing. ASABC engaged with Park Board staff to pursue fundraising for the renewal plan. By the end of the fundraising effort, no donations or grants were obtained to support the project.

In 2020, staff investigated reducing or modifying the scope of the concept design with stakeholder input for cost effectiveness. This work was paused through 2021 and 2022 as funding was not available to advance the project and as staff needed to address other priority projects including repairs to the Stanley Park Seawall, Vanier Park Boat Launch Floats, and Kitsilano Park west waterfront walkway that were also damaged during 2021 and 2022 storm events.

DISCUSSION

Future Pier Renewal (2017 Concept) – Not viable at this time

There is not sufficient funding available to build the renewal concept envisioned in 2017 that is estimated to cost up to \$25M, and therefore it is not a viable option at this time. This information has been shared with the ASABC. Further, due to the conditions and timing requirements of the insurance arrangement, revisiting this concept plan to reduce scope is not feasible in the available timelines and is not discussed below as a viable option.

Key Considerations to Guide Actions

Staff recommend the Board consider the following factors when deciding on the next steps for Jericho Pier:

1. **Decolonization and Reconciliation:** Jericho Beach Park and the surrounding areas are particularly sensitive areas for local First Nations communities. Opportunities for collaborative restoration of naturalized areas need to be considered.
2. **Climate Change:** Increasingly frequent and severe coastal storms will continue to impact this site. The pier is located within the coastal floodplain and sea level rise will exacerbate the magnitude, frequency, and extent of coastal flooding at Jericho Beach Park. The future coastal floodplain at Jericho Beach Park is shown in Appendix A.
3. **Aging Infrastructure:** The 80 year old pier has reached end of service life. The funding required for the maintenance and renewal of Park Board's aging infrastructure far exceeds the funding available: some assets will need to be retired.
4. **Future Development:** The nearby Jericho Lands development project contributes to a future need for a Park Board to embark on a joint comprehensive planning study for Jericho Beach Park with the local First Nations. It will determine the best future plan for the park including the site of the pier.

Recommended Action: Deconstruct the Pier and Maintain the Breakwater

Having reviewed various options, staff recommend to deconstruct the pier, for the following reasons:

1. Deconstruction will mitigate existing safety hazards (unstable structure, falling debris).
2. Future storm damage repair costs will be reduced by virtue of retiring this vulnerable asset.
3. Removal of this colonial structure will demonstrate the Park Board's commitment to decolonization and reconciliation. Future changes at this site can be undertaken in collaboration with the Host Nations, with a key consideration being the linkage and needs arising from the redevelopment of the Jericho Lands.
4. The recommendation ensures critical areas along the shoreline, such as the JSC, remain protected by the maintained breakwater.
5. Climate Adaptation frameworks identify "*retreat*" as a viable option (moving vulnerable infrastructure away from climate change hazards, such as sea level rise and flooding).
6. Funding is available, as described in the financial section below, and limited future monitoring/maintenance costs would be required.
7. Any potential future rebuild of the pier would require deconstruction of the pier as the first step; we are able to take this step now and achieve the benefits listed above.

Staff engaged an engineering consultant to review deconstruction options and considerations. The consultant's report identifies four deconstruction approaches. The approaches and associated costs differ primarily in the degree of reinforcement of the existing timber piled breakwater, which in turn relates to the expected service life of the breakwater. Maintaining the breakwater while deconstructing the remainder of the pier is necessary to maintain protection of the JSC harbour from oncoming waves. Staff will work with the consultant to refine the details of the deconstruction approach and advance the option that best balances risks and costs.

Like-for-Like Repair of the Pier – Not Recommended

Staff also considered the option of conducting “like-for-like” repairs to the pier, as has been done on several occasions in the past. This would include replacing damaged decking, guardrails, beams, pile caps, piles, and selective repairs to the ramp and float.

This option would allow the pier to be reopened to its previous service level by 2025, however, the pier deck will remain below the extreme high tide elevation, and it will remain susceptible to yearly coastal storm damage requiring future closures and repairs. This vulnerability is forecast to increase in light of climate change effects (sea level rise and an increase in frequency of king tide and storm surge events). While this option would require significantly less capital funding, the expected ongoing costs of this approach is significant, and is likely to exceed the costs of the recommended option over time. As a result, staff do not see this as a responsible financial decision due to the expected ongoing costs. Further, the useful life of a like-for-like repair may very well be shortened by these continued storm events. Estimated monitoring, maintenance, and repair costs for the pier are provided in Table 1, which contemplates a range of costs from minimum annual maintenance to annual repair of severe storm damage.

Item	Cost Estimate
Annual routine condition assessment	\$25,000
Potential post-storm damage inspections	\$15,000 to \$30,000
Repair designs for routine maintenance and potential post-storm damage	\$10,000 to \$75,000
Consultant oversight of maintenance and repairs	\$5,000 to \$45,000
Park Board staff time	\$25,000 to \$175,000
Construction of routine maintenance and potential storm damage repairs	\$20,000 to \$2,000,000
Total Annual Maintenance & Repair Costs (2023 dollars, future escalation not included)	\$100,000 to \$2,350,000

Table 1: Estimated annual maintenance and repair costs

FINANCIAL / OTHER CONSIDERATIONS

Staff have submitted a loss claim report to initiate an insurance claim for the pier under the City’s all-risk property insurance policy. The insurance claim is still under review, and as a result the reimbursement amount from the insurance is yet to be confirmed. The insurance policy requires that the application for a claim and the remediation work both need to be completed within two years from the incident date; accordingly the current deadline is January, 2024. The City can request an extension to this deadline, but it is not guaranteed to be granted.

Deconstruction of the pier is estimated to cost between \$1.3M to \$3.6M. If the insurance claim is awarded, we may receive up to \$550k. We will also receive \$250k from the City’s Property Reserve Fund regardless of the insurance decision, for a potential total of \$800k. The remaining \$500k to \$2.8M will need to be funded by Park Board Capital. This analysis is tabulated in detail in Appendix B.

The work can be funded from a total of \$2.8M in eligible capital funding that is available to be allocated to the project, from the following capital programs:

- \$250k of remaining eligible funding from Jericho Pier (2019-2022 capital plan).
- \$1.0M from Renewal of Marine Structures (2023-2026 capital plan). This will use up the entirety of the \$1.0M allocated to marine structures in the 2023-2026 capital plan.
- \$1.6M from Maintenance/Repairs of Seawall or Shoreline (2023-2026 capital plan). \$1.7M will remain in this account for other seawall and shoreline repair projects.

Staff will also apply to the City's Emerging Climate Adaptation Priorities Fund which contains \$10M of debenture funding for addressing coastal flood hazard risks.

NEXT STEPS

Subject to the Board's decision on the recommendation outlined in this report, staff will assist the City's insurance officer to finalize the insurance claim, and engage the appropriate contractors to complete the deconstruction work. The expected timeline for the completion of this work is the end of 2024.

Staff will continue to work with the xʷməθkʷəy̓əm (Musqueam), Skwxwú7mesh (Squamish), and səliłwətaʔ / səliłwítulh (Tsleil-Waututh) Nations to explore the future of this shoreline, and will look to future capital plans to commit funding.

CONCLUSION

Staff seek a decision from the Board to deconstruct Jericho Beach Park Pier while keeping in place and suitably reinforcing the breakwater so as to maintain protection of the Jericho Sailing Centre harbour. The decision will not preclude future opportunities to redevelop the pier site if or when sufficient funding becomes available and if future plans for the site call for its replacement.

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Future Coastal Flood Plain: Year 2100, 1m Sea-Level-Rise, 1/500 Flood Event

Jericho Beach Park Pier is located within the current coastal floodplain. Sea level rise will exacerbate the floor hazard and extent.

The map below delineates the potential for coastal flooding in the year 2100 assuming a 1.0m sea level rise and a 500-year return period ocean event. A 500-year return period ocean event means that, on average, there is a one-in-500 chance that the flood level mapped could be equaled or exceeded in any one year (or that there is about a one-in-10 chance that the flood level mapped could be equaled or exceeded in a period of 50 years).

The figure shows much of Jericho Beach Park being flooded with 100 to 200 cm of water.



Initial capital funding analysis

Option	Estimated Cost	Expected Insurance reimbursement	CoV Property Reserve Fund	Capital Plan Funding Required	Eligible Capital Plan Funds Available
A. Deconstruct existing pier and maintain timber breakwater	\$1,300,000 to \$3,600,000 ¹	\$550,000	\$250,000	\$500,000 to \$2,800,000	Jericho Pier (2019-2022) \$250,000 Renewal of Marine Structures (2023-2026) \$1,000,000
B. Like-for-Like repairs to existing timber pier and breakwater	\$1,700,000 ²	\$1,350,000	\$250,000	\$100,000	Maintenance/ Repairs of Seawall or Shoreline (2023-2026) \$3,300,000 Total Available \$4,550,000

Notes:

- 2023 Order-of-magnitude estimate by VBPR retained consulting firm Advisian, including 30% contingency. Park Board staff time is included.
- 2022 Order-of-magnitude estimate by VBPR retained consulting firm Advisian, including 50% contingency, adjusted for inflation and escalation to 2023 costs. Park Board staff time is included.

All cost estimates are based on consultant's in-house experience and consultant obtaining budget price quotations from local contractors and suppliers for similar projects.

Although the initial capital funding required to perform a like-for-like repair is lower than the deconstruction scenario, significant future annual maintenance and storm damage repair costs are anticipated if the pier is not deconstructed, as detailed in the report.