



Report Date: October 2, 2024

VanRIMS No.: 08-3000-30

[Submit comments to the Board](#)

TO: Park Board Chair and Commissioners
FROM: Director, Park Operations
SUBJECT: Stanley Park Hemlock Looper Response and Mitigation Plan

RECOMMENDATIONS

- A. THAT the Board receives this report for information and approve staff advancing planned Phase 2 (October 2024 – April 2025) risk mitigation and restoration work, which will address health and safety risks in highly visited areas of Stanley Park as outlined in this report.
- B. THAT the Board direct staff to advance a competitive procurement process for contracted services to support the final Phase 3 (Q4 2025 – Q1 2027) risk mitigation and restoration of the remaining untreated forest areas (64% of the forest area) with a report back to the Board for approval of the extent of treatment prior to implementation.

PURPOSE AND SUMMARY

This report provides an update on completed and planned risk mitigation efforts related to the hemlock looper outbreak that affected Stanley Park from 2019-2023. The report published January 24, 2024, titled [Stanley Park Hemlock Looper Impact and Wildfire Risk Assessment](#) describes the extent of damage from the native insect that killed and defoliated over 32% of the trees in the park.

Staff are seeking the Board's approval to proceed with phase 2 work, and to proceed the procurement to support phase 3 risk mitigation and reforestation work within Stanley Park planned for Q4 2025 – Q1 2027.

BOARD AUTHORITY / PREVIOUS DECISIONS

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

The Board shall have the custody, care and management to the extent prescribed by Council of such other areas belonging to or held by the City as Council may from time to time determine.

[Biodiversity Strategy](#) (2016): Increase the amount and ecological quality of Vancouver's natural areas to support biodiversity and enhance access to nature.

[Rewilding Vancouver Action Plan](#) (2014): Improves and enhances experiences of nature, and to increase understanding and awareness of nature in the city.

[Urban Forest Strategy](#) (2014): Policy and operational guidelines to enhance the urban forest on private lands, streets, and parks.

On October 15, 2012, the Park Board unanimously approved a [motion to develop an Urban Forest Action Plan](#), which resulted in the [Urban Forest Strategy](#) presented to Council and the Park Board in April 2014. In December 2015, the Board received an [Urban Forest Strategy Update](#) that included Action Items and Next Steps. In April 2018, the Board received a [staff report](#) outlining the [Urban Forest Strategy - 2018 Update](#), which expanded and refined the 2014 and 2015 strategy presentations.

Previous Board updates on hemlock looper impacts, completed mitigation efforts and planned future phases in Stanley Park are as follows:

- **November 19, 2022:** Stanley Park Board briefing tour in which Urban Forestry staff pointed out hemlock looper impacts while at Prospect Point and notified Commissioners that B.A. Blackwell and Associates (Blackwell) were commissioned to undertake an assessment of looper impacts with a focus on associated public safety and wildfire risks.
- **January 16, 2023:** Board Committee Meeting presentation for information on [Urban Forestry Projects - Stanley Park Update](#).
- **July 10, 2023:** [Board directed staff](#) to develop an updated risk mitigation plan, including measures to address and/or remove dead trees and other materials that might constitute a wildfire fuel risk
- **October 20, 2023:** Board Briefing Memo titled [Stanley Park Hemlock Looper Update](#) outlining mitigation efforts-to-date and plans for removal of hazard trees in high use areas of Stanley Park including the Causeway.
- **February 8, 2024:** Board Briefing Memo titled [Hemlock Looper Impact and Wildfire Risk Assessment – Final Report](#) in which the recently published *Stanley Park Hemlock Looper Impact and Wildfire Risk Assessment* was shared for information.
- **March 19, 2024:** Board Briefing Memo titled [Stanley Park Hemlock Looper & Wildfire Risk Mitigation Update](#) providing a progress update on completed risk mitigation efforts, tree planting plans and the next phase.
- **March 21, 2024:** Urban Forestry staff toured the Board through the Prospect Point and Causeway treatment areas with a focus on risk mitigation and next steps.
- **April 17, 2024:** Board Briefing Memo titled [Stanley Park Hemlock Looper & Wildfire Risk Mitigation Update](#) providing a summary of areas treated, trees removed, revenue generated, volume of cedar and fir to be shared with MST and planting of 25,000 trees.
- **May 27, 2024:** In-Camera update to the Board outlining work-to-date and the ongoing detailed work program, funding strategy and procurement plan for mitigation and restoration in future years.

CONTEXT AND BACKGROUND

Stanley Park is a 418-hectare (ha) park located in the City of Vancouver. The park has been a culturally significant place since time immemorial for the local First Nations, the Musqueam, Squamish and Tsleil-Waututh (MST). Approximately 263ha (63%) of the park is forested with species associated with the Coastal Western Hemlock bio-geoclimatic zone including a mix of western hemlock, Douglas-fir, western red cedar, red alder, and big leaf maple.

The park has been leased from the Federal Government since 1908 with care and stewardship obligations falling under the jurisdiction of the Park Board.

Stanley Park has approximately 18 million visitors to the park annually and according to Ministry of Transportation and Infrastructure data, approximately 50,000 vehicles pass along the Stanley Park Causeway and over the Lion's Gate Bridge daily.

The looper moth is an endemic insect that experiences outbreaks on a 15-year cycle – these typically last for up to two years before collapsing from cold winters and natural predators. The recent outbreak started on the North Shore in 2019 and due to drought stressed trees and warmer winter and spring conditions, it impacted Stanley Park until 2023. There is no practical treatment for the insect and pesticides such as *Bacillus Thuringiensis (Bt)* also impact all other moths, butterflies, and other non-target insect species.

Urban Forestry identified the looper moth infestation in Stanley Park in 2020 and monitored tree and forest conditions for tree-related risks associated with public safety and wildfire. In 2022, when the looper outbreak had not ceased and significant tree mortality was observed, professional forestry consultant B.A. Blackwell & Associates were engaged through a competitive procurement process. Their team consists of Registered Professional Foresters; Ecologists; Registered Professional Biologists; Landscape Architects; and ISA Certified Arborists with Tree Risk Assessor Qualification (TRAQ). Blackwell have extensive experience working on looper-response projects and prior to being engaged, they addressed risk mitigation work in high-use areas within and adjacent to Lynn Headwaters Regional Park in North Vancouver.

Blackwell's analysis of impacts based on field work in the first half of 2023 identified immediate public safety risks that needed to be mitigated in late 2023. In consultation with the City of Vancouver Risk Management Department and due to time constraints driven by imminent public safety risks, Blackwell were selected for this first stage of mitigation work through a sole-source contract on an emergency basis to complete the removal of high-risk dead trees. This work was completed in Q4 2023 and Q1 2024 to address imminent risks in 67ha (25%) of the impacted forest areas including the Stanley Park Causeway and other high-use areas such as Prospect Point, the Train precinct, Pipeline Road, and sections along Stanley Park Drive. The work culminated with the planting of 25,000 native trees to restore the forest ecosystem in spring 2024.

Mitigation work to date has been advanced between September and March each year in respect of bird nesting season, wildlife habitat considerations and peak tourism season. Park Board archaeologists have also supported strategic planning to prevent impacts to above and below-ground cultural resources. In addition, the work has also been implemented with the support and collaboration of Parks Canada, local First Nations (MST), the Ministry of Transportation and Infrastructure, the Ministry of Forests, Office of the Chief Forester, UBC Faculty of Forestry, and internal/external stakeholders including Stanley Park Ecology Society.

Implementation Timeline:

- Phase 1 – Completed from Q4 2023 – Q1 2024: mitigation and restoration of 25% of the forest area of Stanley Park
- Phase 2 - Planned for Q4 2024 – Q1 2025: mitigation and restoration of 11.4% of the forest area of Stanley Park (pending approval sought in this report)
- Phase 3 – Target Q4 2025 – Q1 2027: mitigation and restoration of the remaining 63.6% of the forest area of Stanley Park (pending approval sought in this report, which is to include a report back to the Board on the extent of treatment prior to implementing)

DISCUSSION

The hemlock looper outbreak in Stanley Park presents a unique urban forest management challenge. Unlike the 2006 windstorm in Stanley Park that had a sudden impact and garnered immediate attention and calls to action, the looper outbreak caused incremental and significant tree mortality over the course of four years. Via social media, web and numerous media interviews dating back to July 2021, staff have explained the origins of the insect outbreak, the forest impacts and progress on addressing the forest management challenges.

An outbreak of this magnitude in a rural landscape in remote areas of British Columbia would not necessitate mitigation actions and the forest could recover through natural successional processes. However, in an urban environment where forests need to co-exist with humans, property and infrastructure, risk mitigation and proactive forest management is critical. Because dead trees eventually breakdown structurally and fall, the likelihood of impacts to human safety and/or damage to infrastructure and property increases significantly. In addition, as trees fail, the fuel load of ignitable material builds up on the forest floor increasing the risk of wildfires.

Urban Forestry has historically managed tree risks in Stanley Park by removing dead trees that interface with high use areas, however the extent of tree mortality from this hemlock looper outbreak significantly exceeds staff capacity. In addition, human-caused fires in Stanley Park pose a real threat – records suggest the Park Rangers addressed 68 fires in the park from May 2023 to September 2023.

With this backdrop, risk mitigation measures will continue to be advanced. Although over 160,000 trees have been killed in Stanley Park, only a fraction of that many trees will need to be removed to mitigate significant risks to public safety. In the first phase of work that treated 25% of the forest areas, less than 8,000 trees were removed, half of which were over 20cm in diameter. Only 20,000 of the total trees killed in Stanley Park are over 20cm in diameter and where these trees are in close proximity to high-use areas, they pose the most acute safety risks. The remaining smaller diameter hemlocks that exist in the understorey and in scattered dense thickets pose more of a wildfire risk than public safety risk and these will need to be addressed incrementally through ongoing fuel management, thinning and forest restoration efforts over the course of decades.

For now, large diameter trees that interface with the highest use areas of the park are being targeted for treatment and subsequent restoration efforts anticipate nearly 100,000 native trees will be planted in Stanley Park by the time all forecasted hemlock looper risk mitigation has been completed.

In spring of 2024, Blackwell were selected through a competitive procurement process to advance the second phase of risk mitigation and restoration (“Phase 2”) of an additional 30ha (11.4%) of forested area and plan to advance this work between October 2024 and April 2025. Treatment will focus on high-use areas including the Aquarium, Brockton Point and Chickadee Trail.

Staff continue to advance the course of action recommended in this report to mitigate tree-related public safety risks so that Stanley Park will remain fully accessible to the public, while also ensuring future generations benefit from the natural beauty of Stanley Park’s forest. Ongoing forest management in the park will be underpinned with ecological principles of succession and habitat preservation with a reforestation approach that utilizes a diversity of native species. To eliminate any confusion, the priority in the short-term is the removal of dead trees that are more likely to fail and pose risks to public safety. If left untreated, not only will these trees impact public safety, fuel loads composed of fallen branches and tree-tops will build up and significantly increase the risk of a devastating fire that would not only affect Stanley Park, but potentially the region.

Not advancing Phase 2 work will necessitate closures of forest areas and their adjacencies currently scheduled for treatment including Brockton Point, the Aquarium, the Northwest Seawall, and sections of Chickadee Trail. Delays in treatment of Phase 3 areas will also necessitate closures of areas of the park.

Delaying treatment of these areas not only puts public safety at risk, but also puts workers at risk. The longer that risk mitigation work is delayed, the higher the risk for contracted forestry workers and internal Operations staff tasked with working in the affected forest areas.

FINANCIAL CONSIDERATIONS

As previously shared, the total forecasted costs of the remediation and restoration work is expected to be **\$17.9 million**. This includes **\$1.9 million** operating budget surplus that was spent in Q4 of 2023, the Council-approved **\$4.9 million** on January 24, 2024, to support immediate work required in Q1 and Q4 of 2024 and the Council-approved funding request to support the remaining work from Q1 2025 to Q1 2027.

Council does not have jurisdiction over the decisions impacting Stanley Park, however, funding approvals and budget reallocations of this size are within Council’s jurisdiction. Council’s direction is limited purely to supporting the funding request.

All consultant and contractor contracts related to this work have been in accordance with the City of Vancouver’s Procurement Policy ADMIN-008 which is led by Finance, Risk and Supply Chain Management and Legal Services and applies to Park Board,

City and Park Board staff are actively seeking various opportunities to offset these costs and have recently been in conversations with an outside donor that may be able to donate 75,000 seedlings to support restoration efforts following risk mitigation work.

RISK & LEGAL CONSIDERATIONS

Per the British Columbia Professional Governance Act, the [Forest Professionals Regulation \(gov.bc.ca\)](https://www.gov.bc.ca) defines the practice and jurisdiction of professional forestry in the Province.

Per the International Society of Arboriculture [Ethics-Code-of-Ethics.pdf \(isa-arbor.com\)](https://isa-arbor.com), Certified Arborists have a responsibility to public safety.

The details of the hemlock looper outbreak in Stanley Park were presented to the City of Vancouver Risk Management Committee on November 7, 2023. Three options were presented in which two of the options included the need to potentially close sections of the park to public access, potentially impacting businesses and revenue generating permits.

Per the Vancouver Board of Parks and Recreation *Tree Inspection Policy* (1993):

Park trees in high usage areas (e.g. facilities, trails, roads) are inspected annually for signs of defects which could result in their failure. Trees that are evaluated as hazardous are prioritized and scheduled for corrective action.

In accordance with the Tree Inspection Policy (1993), the Park Board is obligated to inspect and evaluate trees in order to identify hazardous trees and minimize impacts to public safety.

Not advancing ongoing risk mitigation efforts planned in Stanley Park will necessitate closing areas of Stanley Park to public access as tree risk levels advance over time from high to extreme and exceed the City of Vancouver and Park Board's risk tolerance.

Closing off a significant percentage of the Stanley Park forest to public access presents key considerations/risks:

- **Public Dissatisfaction:** Loss of recreational opportunities and education may decrease public engagement and conservation backing.
- **Economic Impact:** Potential reduction to tourism, trail use, and local business activity may negatively impact revenue to local economies.
- **Higher Maintenance Costs:** Limited staff access will delay infrastructure upkeep to fire hydrant infrastructure, service roads, increasing costs and risks of vandalism or deterioration.
- **Environmental Issues:** Restricted access could lead to overgrown ecosystems, increased fire risk, or unauthorized use, damaging habitats.
- **Negative Public Perception:** Community may have concerns if the closure is not managed or communicated effectively.

COMMUNICATION CONSIDERATIONS

Staff will be providing regular updates to the public at key milestones of the ongoing risk mitigation work using a variety of channels including web, social media, and media. In particular, staff will use the Park Board's social channels and signage on-site to alert users of Stanley Park of closures related to the work. Staff will also use every opportunity to communicate progress, particularly throughout the various replanting efforts.

CONCLUSION AND NEXT STEPS

In the short-term, staff with the support of Blackwell are currently planning to commence Phase 2 risk mitigation work by mid October 2024 – treatment work involves short term and temporary impacts to trails and Stanley Park Drive as well as complex helicopter work above the seawall. Work may extend into early 2025 with subsequent restoration of the 30ha treatment area taking place in March 2025. A competitive procurement process for Phase 3 of work will be advanced in late 2024 or early 2025. Staff will present the outcome of the procurement process and extent of planned treatment for decision.

Should the Board not approve staff's recommendation related to Phase 2 work, staff would halt planned operations and report back to the Board, on an expedited timeline, on planned closures and impacts (financial and operational).