

AGENDA INFORMATION

- ☐ Council Workshop
- ☐ Finance & Audit
- ☐ Advisory Oversight
- ☐ Other:

Date: _____
Date: _____
Date: _____
Date: _____



The District of North Vancouver REPORT TO COMMITTEE

November 27, 2023
File: 6155598

AUTHOR: Monica Woods Marshall, Section Manager, Urban Forestry and Natural Areas

SUBJECT: Forest Resilience Plan Implementation

RECOMMENDATION:

THAT the Committee of the Whole recommend to Council:

THAT the Forest Resilience Implementation Program detailed in the November 27, 2023 report of the Section Manager, Urban Forestry and Natural Areas entitled Forest Resilience Plan Implementation is approved.

REASON FOR REPORT:

To seek Council's support for staff to implement an operational forest resilience program based on the goals, actions and recommendations in the Forest Resilience Plan (FRP) prepared by B.A. Blackwell & Associates Ltd. (Blackwell, 2022), the Climate Change Adaptation Strategy (CCAS), the Parks and Open Space Strategic Plan (POSSP) and the Community Wildfire Protection Plan (CWPP). The work outlined in this report will advance specific actions to increase forest resilience, health, and structure as identified in these three Council approved plans and strategies.

SUMMARY:

This report provides an implementation program for advancing the highest priority actions recommended in the Forest Resilience Plan, prepared by Blackwell (2022), as well as deliverables from the Climate Change Adaptation Strategy (2017), the Parks and Open Space Strategic Plan (2012) and the Community Wildfire Protection Plan (2007 and updated 2019). The Forest Resilience Implementation Program has been developed in collaboration by staff in Parks, Environment, District of North Vancouver Fire & Rescue Services (DNVFRS), and Climate & Biodiversity and is based upon the following goals identified in the FRP:

Goal 1. *"Mitigate the District's wildfire hazard"*

Goal 2. *"Improve forest health and structure for all naturally forested areas"*

The FRP addresses the contiguous forest management area that builds upon the work conducted through the CWPP to provide an extended wildland urban interface (WUI) buffer and improve forest fire resilience through better forest health, structure, species composition and functional diversity. The supporting implementation program that has been developed by staff builds upon the goals of the FRP, as well as the related priority actions identified in the CCAS, and includes the following three key objectives:

- **OBJECTIVE 1:** Advance forest health restoration projects in priority areas through an ongoing operational program
- **OBJECTIVE 2:** Continue to develop and advance related plans, strategies and policies to align forest health initiatives
- **OBJECTIVE 3:** Enhance shared stewardship of District forests through partnerships, outreach and education

These objectives, and the supporting actions as outlined in the Forest Resilience Implementation Program, form the basis of a multi-year and ongoing work program that will be executed through the District's Parks Department relying upon a combination of staff resources, cross-departmental collaboration, inter-governmental coordination, volunteers and external contract and consulting support.

This report presents the first five years of program implementation, which includes the highest priority sites identified for forest health restoration through a strategic, risk-based approach. An initial cost of \$6.5 million is estimated to address these priority sites with an allocation of \$700 thousand included for the start-up year in the 2024 financial planning process.

BACKGROUND:

Council, staff, the public and experts have become increasingly concerned with the declining state of local forested areas. District forests are vulnerable to increasingly frequent and intense storms (e.g. bomb cyclone and polar vortex), extended periods of extreme drought conditions (e.g. heat dome), insect outbreaks (e.g. looper moth), and precipitation events where accumulation and intensity exceed historical norms (e.g. atmospheric river). These stressors, combined with historic logging practices, urban development, and recreation use trends have increased tree mortality and tree failures, resulting in potentially increased public safety and property damage risks. The most recent example of these impacts includes an intense windstorm in October 2023 that caused widespread tree failures across the District and over 100 Report-A-Problem reports received in an eight-hour period. In another recent example, this past summer there were multiple forest fires on the North Shore which required multi-jurisdictional response, significant resources and post fire restoration work.

In recognizing that District forests are critical natural assets that require proactive management to improve resilience, in 2007 the District retained B.A. Blackwell & Associates (Blackwell) to assist in the development of the CWPP that quantifies wildfire risk in the District and strategically identifies priority areas for fuel mitigation. The fuel treatment areas identified in 2007 have since been completed and the program was updated in 2019 with

new treatment sites. To date, the District has successfully completed 98 ha of operational fuel treatments with UBCM funding support. These fuel treatment areas, together with wildfire development permit area guidelines for new development, increase resiliency for the community and critical infrastructure within the WUI areas. The District has also significantly increased capacity to respond to wildfires through training and investment in equipment and increased public awareness of wildfire risk through Firesmart programs.

While CWPP fuel treatment work substantially reduces the risk of wildfire spread in the WUI areas, the scope for this work has been specific to fuel mitigation and has not included additional forest health restoration techniques that further enhance and support the long-term resilience and ecosystem function of these areas. In addition, the scope of the CWPP focuses only on the WUI area and does not extend to other high value forested areas throughout the District that are also in significant decline and require management and restoration.

To address this gap, in 2019, staff retained Blackwell to provide recommendations on increasing forest resilience, health and structure in alignment to the related priority goals and actions identified in the CWPP, CCAS and POSSP. On May 30, 2022, staff presented the draft Forest Resilience Plan at a Council workshop and in November 2022 staff received the Final FRP. Subsequently, staff have developed a corresponding implementation plan, as further detailed in this report.

In 2023, the District had an opportunity to pilot the more comprehensive scope of forest resilience work in Mountain View Park. The District removed approximately 55 hazard trees, completed fuel treatment maintenance as prioritized in the CWPP and, with the support of community volunteers, restored the area with 500 native trees to promote the regeneration of a resilient forest. This work was implemented in conjunction with Metro Vancouver Parks who similarly removed hazard trees and completed restoration works in adjacent Lynn Headwaters Regional Park. **Attachment 1** provides an example of the temporary informational signage, project webpage, and photos of the Mountain View Park project.

EXISTING POLICY:

The FRP and the corresponding Implementation Program are supported by the following existing District policies:

- **Official Community Plan** (2011) – direction to protect District forests and old growth trees and enhance the health of trees and soils.
- **Parks and Open Space Strategic Plan** (2012) – direction to proactively manage parkland forests, ecosystems and habitats.
- **Community Wildfire Protection Plan** (2019) - management of natural area forests that directly border urban areas, and how to prepare for, respond to, and recover from wildfires.
- **Climate Change Adaptation Strategy** (2017) - direction to proactively manage all District-owned forested areas to increase forest resilience, health, and structure and reduce other natural hazards.

- **Nature and Biodiversity Strategy** (in development) - will be an overarching plan to protect, enhance, and restore biodiversity and natural systems in the District, including forested and natural areas.
- **Natural Areas Trails Strategy** (in development) – will guide the planning and management of recreation trails across natural forested areas.
- **Invasive Plant Management Strategy** (2015) – direction to mitigate the spread of invasive plants on private and public lands.
- **Tree Protection Bylaw 7671** - regulates the protection, preservation and conservation of trees in the District.
- **Tree Work in the District Policy** (2012) - procedures to conduct work on both hazardous and non-hazardous trees within the District.

ANALYSIS:**Implementation Program:**

The Forest Resilience Implementation Program provides three objectives and a series of supporting actions to improve forest health and resiliency in priority areas. Each overarching objective is described in the sections below with a list of priority actions to guide implementation.

OBJECTIVE 1: Advance forest health restoration projects in priority areas through an ongoing operational program

Due to the current declining state of a large area of District forests, advancing forest health restoration projects is critical to manage risk and improve the long-term resiliency and sustainability of the District's forested areas. To achieve this objective, the following priority actions will be undertaken through program implementation.

PRIORITY ACTIONS

- a. Identify and prioritize forest health treatment project areas based on a benefits and risk analysis that includes:
 - Public Safety
 - Risk of property damage
 - Known environmental/biological stressors (including looper moth damage, root and stem rot, dwarf mistletoe, invasive species, susceptibility to windstorms, and wildfire risk)
 - Ecosystem sensitivity
 - Community health/recreation values
 - Budgetary and other constraints
- b. Develop and implement site-specific treatment and restoration plans, applying silviculture BMPs, for each priority area (**Attachment 2**)
- c. Monitor and evaluate treated areas to assess progress over time and adapt to lessons learned (see example in **Attachment 3**)

OBJECTIVE 2: Continue to develop and advance related plans, strategies and policies to align forest health initiatives

The Forest Resilience Implementation Program will work in coordination with a number of other plans, strategies and policies. Staff will continue to prioritize the review and update of existing documents, as well as the future development of an overarching Urban Forest Management Plan to align all of the District's forest health initiatives on public and private land.

PRIORITY ACTIONS

- a. Integrate forest resilience principles into development, implementation and updates of the following strategies and plans:
 - Natural Areas Trails Strategy (in development)
 - Nature and Biodiversity Strategy (in development)
 - Tree Work in the District Policy
 - New and existing Area Trail Plans (Fromme, Lynn Canyon and Seymour)
 - Invasive Plant Management Strategy
 - Parks and Open Spaces Strategic Plan
 - Community Wildfire Protection Plan

OBJECTIVE 3: Enhance shared stewardship of District forests through partnerships, outreach and education

The District is committed to fostering a culture of shared stewardship and increasing public knowledge and awareness on the importance of healthy forest ecosystems. This also includes continuing to build relationships and work collaboratively with neighbouring municipalities, regional and provincial governments, and First Nations governments.

PRIORITY ACTIONS

- a. Develop and implement programs and opportunities for the community to participate in forest health restoration initiatives (see example in **Attachment 4**)
- b. Update and develop communications materials to inform the public about forest health restoration principles and projects (see example in **Attachment 1**)

Timing/Approval Process:

After receiving Council approval, the Forest Resilience Implementation Program will be formalized as an operational program under the Parks mandate. An operating budget request has been submitted for 2024 to initiate the program and the program will be regularly reviewed and updated as progress is made.

Concurrence:

The Forest Resilience Implementation Program was developed in collaboration with an interdepartmental Forest Working Group including staff expertise from the following departments: Parks, Climate & Biodiversity, Environment, and Fire and Rescue Services.

Financial Impacts:

The Forest Resilience Implementation Program will be achieved through a combination of staff, consultants, contractors and volunteers with an estimated cost of \$6.5 million for program implementation over the first five years. An allocation of \$700 thousand is included in the financial planning process to support program start-up in year 2024 and staff will subsequently report back on program progress through the Financial Plan update in Fall 2024, which will help inform budget allocation for years 2025-2028.

The balance of program costs will be incorporated into the annual capital and operating budget planning process for Council's consideration as the program progresses. Following the first five years of implementation additional restoration sites will be prioritised based upon the risk and benefits analysis identified in this report, and this information will be brought forward for Council's future consideration.

As the District's forests are natural assets, this work will also be integrated into the annual Asset Management Planning process, along with other natural assets, over the next few years. The initial inventory, condition assessment and valuation of our forests will form an important baseline for reassessing the level of investment required to achieve the long-term objectives of the Forest Resilience Plan.

Liability/Risk:

The effects of climate change are unpredictable, making it challenging to foresee what disease outbreak, insect infestation or major weather event could impact the District's stressed forests in a given season. There is a risk that even with this program implementation, the District could still experience significant loss of forested areas due to a natural hazard such as forest fire. Strategic management of forested parkland will help to minimize the District's exposure to risks such as wildfires, flooding, debris flow, slope instabilities, and infrastructure damage from tree failures. The work that is proposed for years 1-5 includes priority locations that cover a small percentage of the District's forested areas and new projects will be scoped and prioritized for future years.

Social Policy Implications:

The projects are planned and prioritized to be geographically diverse and represent different forest types, ecosystems and levels of public access.

Environmental Impact:

Strategic management of our forests will build resilience and help minimize the District's exposure to related risks. Healthy forests align with many community values around environmental protection, climate mitigation and adaptation, public health and wellness benefits, biodiversity, and natural asset management.

Committee Input:

At the April 26, 2023 Parks and Natural Environment Committee (PNEAC) meeting, District staff delivered a presentation and collected feedback from the committee members on the proposed implementation program. The Committee members expressed support for the draft objectives and highlighted the need to prioritize environmentally sensitive areas, ensure project locations benefit a variety of neighbourhoods, and increase public education and partnerships.

Feedback and support were also received through interagency collaboration with the Metro Vancouver Regional Parks Advisory Committee and the North Shore Parks Coordination Committee. Through interagency collaboration, a strong interest in partnership and collaboration with adjacent land managers was expressed by all agency representatives, which will be further explored through program implementation.

Conclusion:

The objectives and supporting actions outlined in the Forest Resilience Implementation Program form the basis of an ongoing work program that, with Council's support, will be executed through the District's Parks Department, in collaboration with staff in Environment, DNVFRS, and Climate & Biodiversity. Implementation will rely upon a combination of staff resources supported by consultant and contractor experts as well as the support of community volunteers and District partners. This report presents the first five years of program implementation, which includes the highest priority sites based on risk of property damage, public safety, environmental/biological stressors, ecosystem sensitivity and community health/recreation values. The implementation program prioritizes improving the functional integrity of our forested areas over the long term, advancing related plans and strategies and enhancing shared stewardship of the District's forests.

Options:

1. THAT the Committee of the Whole recommend to Council:

THAT the Forest Resilience Implementation Program detailed in the November 27, 2023 report of the Section Manager, Urban Forestry and Natural Areas entitled Forest Resilience Plan Implementation is approved **(Staff recommendation)**.

OR

2. THAT no further action is taken.

Respectfully submitted,

Monica Woods Marshall
Section Manager, Urban Forestry and Natural Areas

Attachment 1: Forest Health Restoration Projects – Signage and Photos

Attachment 2: Proposed Forest Health Restoration Projects

Attachment 3: Forest Resiliency Evaluation Tool – Example

Attachment 4: Princess Park Forest Health Restoration Project – Photos

REVIEWED WITH:			
<input type="checkbox"/> Business and Economic	_____	<input type="checkbox"/> Finance	✓ <u>BH</u>
<input type="checkbox"/> Bylaw Services	_____	<input checked="" type="checkbox"/> Fire Services	<u>BH</u>
<input type="checkbox"/> Clerk's Office	_____	<input type="checkbox"/> GIS	_____
<input checked="" type="checkbox"/> Climate and Biodiversity	<u>§.</u>	<input type="checkbox"/> Human Resources	_____
<input checked="" type="checkbox"/> Communications	<u>cg</u>	<input type="checkbox"/> IPG	<u>VGS</u>
<input type="checkbox"/> Community Planning	_____	<input type="checkbox"/> Parks	_____
<input type="checkbox"/> Development Engineering	_____	<input type="checkbox"/> Real Estate	_____
<input type="checkbox"/> Development Planning	_____	<input type="checkbox"/> Review and Compliance	_____
<input type="checkbox"/> Engineering Operations	_____	<input type="checkbox"/> Solicitor	_____
<input checked="" type="checkbox"/> Environment	GE	<input type="checkbox"/> Utilities	_____
<input type="checkbox"/> Facilities	_____		

External Agencies:	
<input type="checkbox"/> Library Board	_____
<input type="checkbox"/> Museum and Archives	_____
<input type="checkbox"/> NSEM	_____
<input type="checkbox"/> NS Health	_____
<input type="checkbox"/> NVRC	_____
<input type="checkbox"/> RCMP	_____
<input checked="" type="checkbox"/> Other: Natural Hazards Mgmt	<u>FD</u>

Attachment 1

Mountain View Park Forest Health Restoration Project – Signage and Photos



Figure 1. Temporary information signage for the Mountain View Park forest restoration work.

Hazard tree removal at Mountain View Park

Wednesday, Jan 25, 2023

We are working to improve the health and resiliency of our forests.

Starting the week of February 1, 2023, crews will be in Mountain View Park to remove approximately 55 trees impacted by the recent hemlock looper moth infestation and increasingly dry, hot summers (see map below).

The work is expected to take about one week to complete.

Our restoration plan for this area includes replanting three native tree species for every tree removed. We will plant various trees and shrubs species that will be resilient to changing climate conditions.

Please obey all signage in the area and avoid Mountain View Park during this work.



Lynn Headwaters hazard tree removal

We are working collaboratively with Metro Vancouver Parks, which is now removing significantly damaged trees in adjacent Lynn Headwaters Regional Park.

[Learn more about hazard tree removal at Lynn Headwaters at Metro Vancouver's website](#) 

Volunteer opportunity

We have a volunteer event on Saturday, November 4 at 9am and we will be planting 500 trees in Mountain View Park.

[Get details about upcoming volunteer events](#) 

Figure 2. District project webpage for Mountain View Park hazard tree removal and forest restoration.



Photo 1. Mountain View Park forest restoration site, hazard tree removals in progress (February, 2023). The District removed approximately 55 trees impacted by the recent hemlock looper moth infestation and increasingly dry, hot summers.



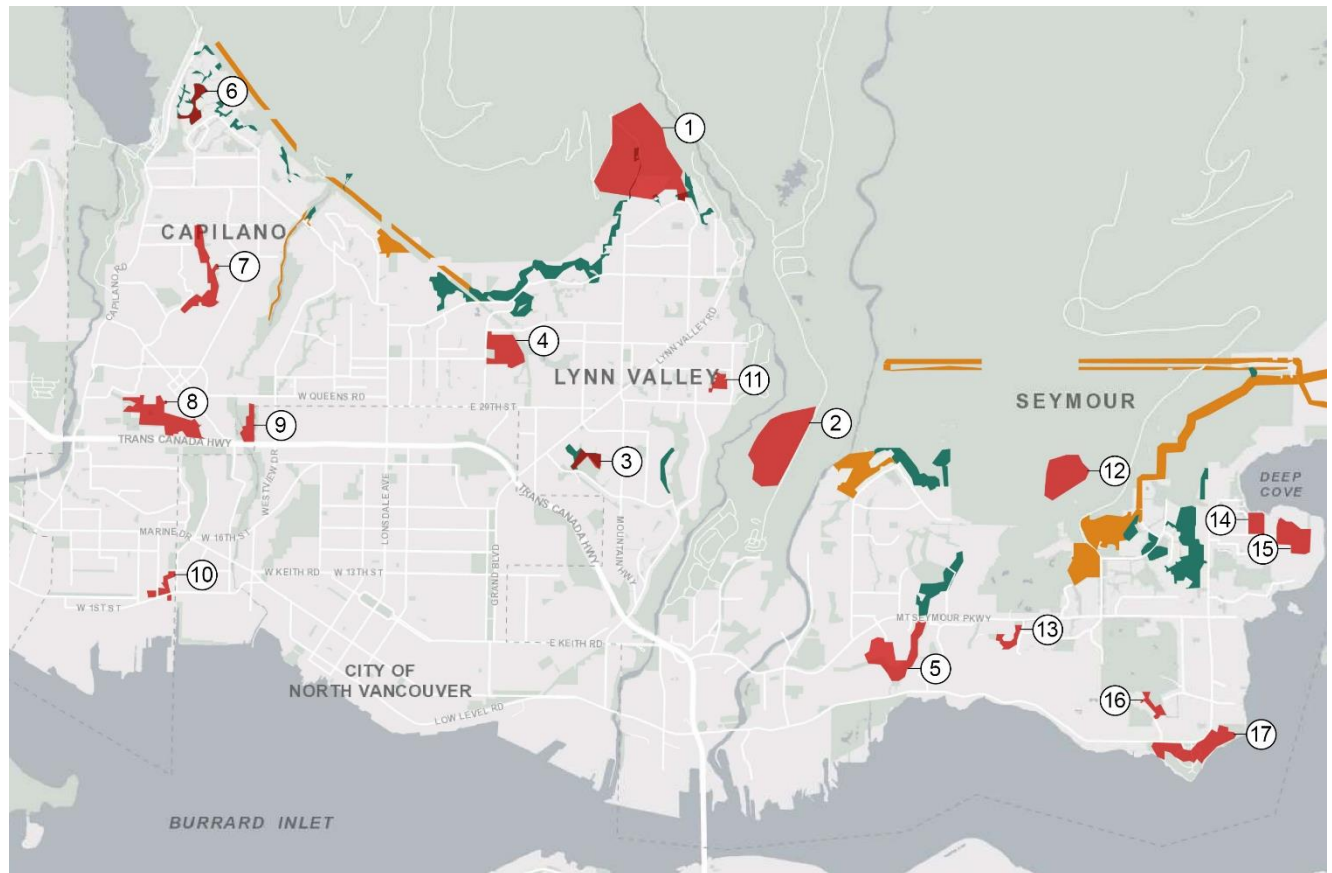
Photo 2. Mountain View Park forest restoration site, hazard tree removals complete (April 2023).



Photo 3. Mountain View Park forest restoration site, 8 months after tree removal. Natural forest regeneration underway with many native shrubs establishing the disturbed area and minimal invasive plants (August 2023).

Attachment 2

Proposed Forest Health Restoration Projects



Legend

- | | | | |
|--------------------------------|---|--|--|
| ① Lower Fromme
30 hectares | ⑤ Windridge Park
7 hectares | ⑨ William Griffin Park
3 hectares | ⑬ Strathaven Park
1 hectare |
| ② East Lynn
15 hectares | ⑥ Grousewoods Park
2 hectares | ⑩ Lower Mackay Creek
1 hectare | ⑭ Deep Cove Park
3 hectares |
| ③ Kirkstone Park
2 hectares | ⑦ Upper Mackay Creek Park
7 hectares | ⑪ Draycott/Westover Park
2 hectares | ⑮ Wickenden Park
5 hectares |
| ④ Princess Park
7 hectares | ⑧ Murdo Frazer Park
7 hectares | ⑫ Central Seymour
10 hectares | ⑯ Roche Point Park
2 hectares |
| | | | ⑰ Cates Park/Whey-ah-Wichen
13 hectares |

- Forest health restoration projects prioritized in years 1-5
- Community Wildfire Protection Plan treatment projects planned in 1-10 years
- Community Wildfire Protection Plan treatment projects completed

Figure 3. This map includes 17 forest health restoration project locations prioritized for the next 1-5 years, CWPP fuel treatment areas completed and CWPP future projects.

Attachment 3

Forest Resiliency Evaluation Tool – Example

Forest Resiliency Matrix

Name: _____ Dept: _____

Latitude:	Longitude:
Site Name:	Size of Plot:
Closest Access:	DPA's:
Primary or secondary woodland?	Has this site been treated before?

Forest Type: _____

Dominant Vegetation: _____

Please note that the variables listed below should be measured relative to the forest type and dominant vegetation. Multiple assessments must be conducted when there is variation in habitat within the plot.

How many assessments are being conducted on this plot? _____

Variables to Monitor

Healthy = 1 Point, Weakened = 2 Points, Unhealthy = 3 Points

General Tree Health

Healthy	Trees are healthy and free of disease with normal growth form respective to the species.
Weakened	Tree health is adequate but there are signs of decline, and/or disease, and/or poor growth.
Unhealthy	Trees are stressed and in decline due to poor growth and/or disease, and/or insect pests, and/or drought.



Comments:

Stand Structure

Healthy	The forest contains trees of various sizes and ages, as well as multiple vertical layers and canopy gaps allowing for light exposure.
Weakened	The forest contains some trees of variable size and age, but the overstory is dense and contains infrequent canopy gaps with reduced light exposure.
Unhealthy	The forest contains a majority of even aged, secondary growth trees, creating dense closed canopy conditions preventing light exposure.



Regeneration

Healthy	Tree seedlings and/or saplings are present in the understory; the species mix is desirable for achieving management goals.
Weakened	Tree seedlings and/or saplings are present but infrequent in the understory and are competing with undesired species.
Unhealthy	Tree seedlings and/or saplings are absent in the understory or are dominated by undesired species.



Biodiversity

Healthy	The forest is comprised of tree/plant species of varying size and age without a single species being overly dominant.
Weakened	The forest includes some variation in the age, and/or size, and/or species of tree/plant present.
Unhealthy	The forest has low species diversity, either in the canopy or throughout the forest. One or few tree species are dominant.



Invasives

Healthy	Invasive plants are absent or are confined to a small area.
Weakened	Invasive plants are present in some areas but are not dominant throughout the forest.
Unhealthy	Invasive plants are common in the forest and may impede natural regeneration.

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Comments:

Wildlife

Healthy	Many sightings and sounds of wildlife (birds, mammals, insects, etc.) in forest area relative to the season.
Weakened	Few signs of wildlife in forest area relative to the season.
Unhealthy	No evidence of wildlife in forest area relative to the season.

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Soils

Healthy	Forest soils have a sufficient amount of depth, and/or cover, and/or moisture retention adequate for growth.
Weakened	Forest soils express signs of erosion, and/or poor cover, and/or inadequate drainage, which are negatively affecting growth.
Unhealthy	Forest soils are eroded, and/or compact, and/or do not have an appropriate amount of moisture for growth.

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Wildfire Management

Healthy	There are no signs of wildfire components that need to be assessed.
Unhealthy	There are signs of wildfire components that need to be assessed.

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Total Points	Priority Rating	Actions to take	Select One
≤ 12	Priority 3	Forest treatment is a low priority, and scheduling treatment can be attended to as the annual budget and workload allows.	<input type="checkbox"/>
13 - 18	Priority 2	Forest treatment is a moderate priority, and scheduling treatment is recommended within 3 years . The inspector should conduct another assessment in 6 months – 1 year (or the next available season) .	<input type="checkbox"/>
19 ≥	Priority 1	Forest treatment is a high priority, and the inspector should send the required work immediately to management for mitigation.	<input type="checkbox"/>

Final Comments:

Signature: _____

Date: _____

Please make sure all assessments on this plot remain together

Attachment 4

Princess Park Forest Health Restoration Project – Photos



Photos 4 – 9. Princess Park forest restoration planting event held on November 18, 2023. 60 volunteers joined District staff to plant over 1,000 native plants to restore a sensitive and degraded portion of the forest area in Princess Park. The project also includes new fencing, hazard tree removal, trail improvements and informational signage. This event is an example of opportunities for the community to participate in forest health restoration initiatives.