yiyχmɛštəm qʷaqʷtəm

Willow Creek Stewardship

Aupe Crescent Culvert Replacement

Prepared for χʷɛmaɬkʷu
Prepared by Land Forest People Consultants Ltd.
Funded by the British Columbia Community Emergency Preparedness Fund, Disaster Risk Reduction-Climate Adaptation Program

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1.0 INTRODUCTION

This report summarizes the replacement of the Aupe Crescent culvert.

The water crossing at Aupe Crescent has previously flooded during high rain-fall events, causing water to flow towards houses on the southern end of the road. This flooding has caused property damage and forced emergency evacuation of community members in the past. In addition to the risk of stream bank overflow, the tributary creek downstream and Willow Creek were vulnerable to failure of the culvert at Aupe Crescent crossing, resulting in debris flows, bank erosion, and habitat loss.

In order to protect χʷɛmaɬkʷu homes, businesses, cultural places, and cultural and ecological values, the project to replace the Aupe Crescent water crossing with a higher-capacity culvert was identified by the community as high-priority.

This project sits within the broader yiyχmɛštəm qʷaqʷtəm Willow Creek Stewardship Project, whereby χʷɛmaɬkʷu is undertaking stream and wetland restoration on our lands at Campbell River for climate adaptation and resilience. In recognition of the fact that changing patterns of rain, snow accumulation, and snow melt result in unpredictable water flows and yield patterns, and the resulting increased risk of flooding in the community, the yiyχmɛštəm qʷaqʷtəm project addresses restoration of our waterways to reduce risks and protect cultural and ecological resources.

2.0 ACTIVITIES AND TIMELINE

The original Aupe Crescent culvert was too small for the waterflows that were coming through, and was often blocked by woody debris, contributing to overland flow.

Figure 1: Woody debris filling the waterway at the old Aupe Culvert

Figure 2: Old culvert

The following activities took place between over the summer and fall of 2025 to complete the Aupe Crescent culvert replacement.

- June – Fish isolation work began. Biologists were on site to live-trap fry and relocate them to good habitat downstream, in preparation for culvert replacement construction work.
- July – ground penetrating radar was used to locate utilities (such as water lines, sewer, power, and communication systems) in the roadway prior to digging.
- July – test pits upstream and downstream of the culvert, to confirm the nature of soils in preparation for culvert construction. The first test pit was dug upstream of the culvert.

Figure 3: Upstream test pit digging

Figure 4: Downstream test pit digging

- August – Demolition of the old culvert began, and culvert and earthworks installation began.

Figure 5: Excavation on one side of the road prior to installing concrete culvert

Figure 6: Culvert constructio

Figure 7: Channel work in progress

Figure 8: Work beginning on opposite side of the road

- September – Culvert installation continued, including backfill and channel work. Next, roadwork and re-paving began.

Figure 9: New culvert with channel work

- October – The site was reseeded and packed with straw to protect it from surface erosion in the coming winter rains.

Figure 10: Site reseeded and packed with straw for erosion protection

- February 2026 – RWE visited the new Aupe culvert, and observed Coho parr (baby fish) and mallard duck in the wetland pool just upstream of the culvert, demonstrating a good indicator that habitat for fish and wildlife has been improved and expanded in Willow Creek. It also is a good indicator of the potential habitat value of further stream restoration.

Thank you to all community members for your patience while we completed this important work for Willow Creek!

Figure 11: Coho parr in upstream pool

3.0 COLLABORATORS

Collaborators on this project included:

- Rewilding Water and Earth Inc.
- Northwest Hydraulic Consultants Ltd.
- Black Creek Industries
- Land Forest People Consultants Ltd.
- χʷɛmaɬkʷu Guardians