

National Park Service  
U.S. Department of the Interior  
Olympic National Park



# Enchanted Valley Chalet National Historic Preservation Act Section 106 Consultation

Public Informational Session  
November 15, 2021

# Introductions



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Archeologist & 106 Advisor



Christina Miller,  
OLYM Planning &  
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# Agenda

- Logistics
- Current project status
- Explain selection of preferred alternative
- Discuss the undertaking
- Status of NHPA Section 106 process
- Next Steps
- Q&A



# Current Project Status



- Public review of EA was July-August 2020
- 2,163 correspondences received, analyzed
- Concern responses drafted for decision document
- Going forward with preferred alternative
- Completing NHPA Section 106 consultation



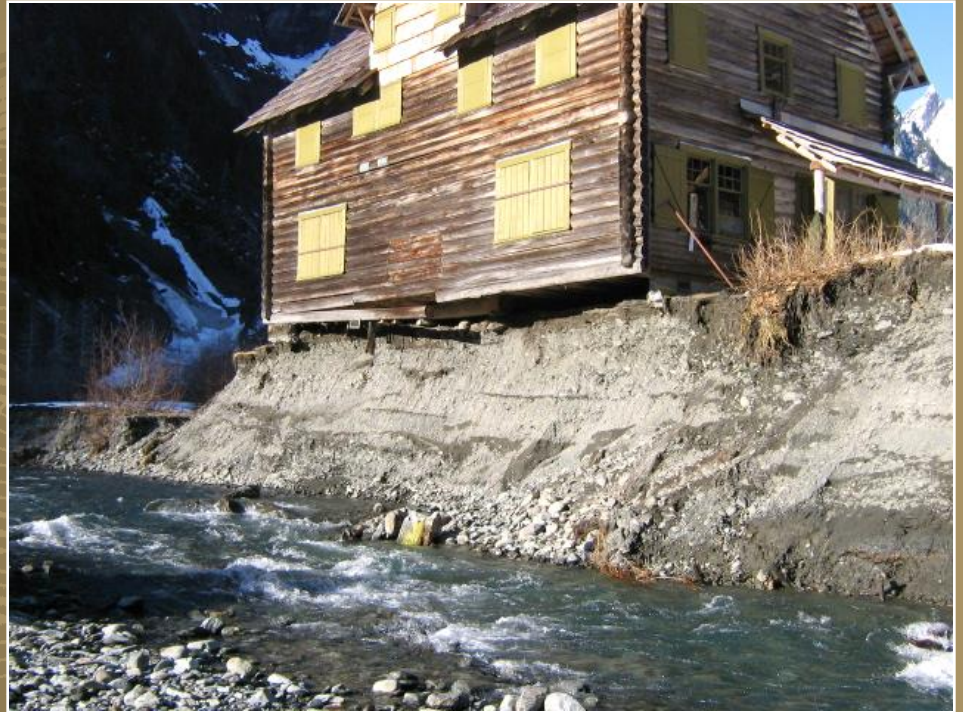
# Why alternative B was selected





# Site Flood Hazard Survey and Report

- Overview
  - Study area
  - Brief history of flooding
- Hazard Discussion
  - Bank erosion rates
  - Hydrology
  - Sediment bulges
  - Terrace hazards
- Conclusions



# Site Flood Hazard Survey and Report



**Hazard analysis area  
(potential move sites)**



# Site Flood Hazard Survey and Report



Enchanted Valley  
Year 2002

0 100 200 300 400 Feet

Scale 1:3,000



Above Image: 2004

Left Image: 2002



# Site Flood Hazard Survey and Report



Between 1990 and 2006, the river moved over 350 feet, threatening the chalet for the 1<sup>st</sup> time.

# Site Flood Hazard Survey and Report



In 2013, the river was on the move again, undermining the chalet in early 2014.



# Site Flood Hazard Survey and Report



# Site Flood Hazard Survey and Report



The chalet was moved to its present location Sept. 2014.



# Site Flood Hazard Survey and Report

## Historic Riverbank Erosion Rates

(a) Chalet cross section:

Photo interval	Channel change (feet)	Annual rate (feet/year)
1990-2006	350.0	21.9
2006-2013	11.2	1.6
2013-2015	16.2	8.1
2015-2016	20.5	21.0

Average annual bank erosion was 15.3 feet/year (4.7 meters) from 1990 to 2016.

(b) Area near chalet:

Photo interval	Annual rate (feet/year)
1990-2006	21.8
2006-2013	3.8
2013-2015	18.4
2015-2016	21.4

Average channel widening was a similar 16.68 feet/year (5.1 meters).

# Site Flood Hazard Survey and Report

## River Flow Regimes

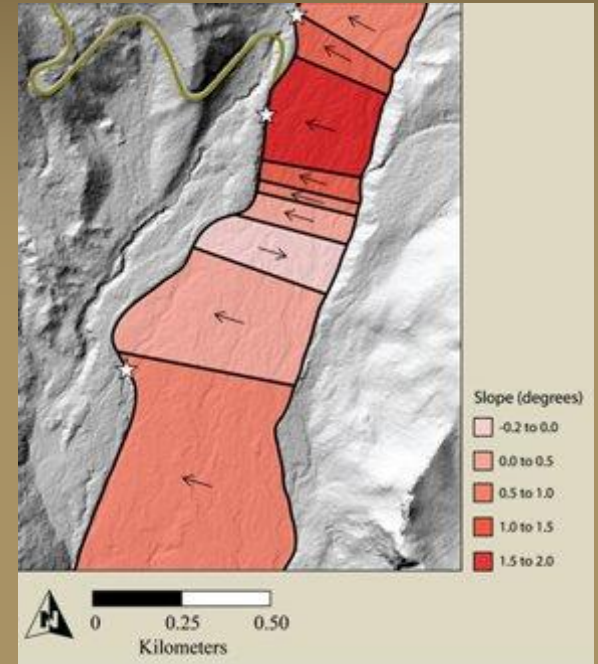
- Previous 100-year flood, now every 70 years

## River Channel Gradients

- Cross channel gradients exceed downstream gradients

## Vertical Changes of the River Channel Beds

- Riverbed elevations controlled by:  
(1) wood-mediated fluctuations; and transient zones of sediment accumulation.
- Wood-caused usually ~2 meters
- Up to 10 meters in one-year at OLYM
- Assumed ~ constant over time





# Site Flood Hazard Survey and Report

## Riverbank Heights and Erodibility

- Bank heights from 1.6-9.3 ft (0.49-2.83 m);
  - higher bank heights near the chalet;
- Average bank height was 4.5 ft (1.35 m).

Bank survey and stratigraphic columns showed:

- materials mostly gravels (range fine sands to boulders)
- very little vegetation and 'apparent cohesion' from roots (root strength)



# Site Flood Hazard Survey and Report

## Radiocarbon Dating Results



- Despite precautions, sample #189, tested as a recent tree.
- Sample #203 represents a max terrace age of  $\sim 1,500$  AD;
- Conventional radiocarbon age of sample #203 is  $320 \pm 30$  before present (BP), which corresponds to the age range of 1482 AD to 1594 AD years old (calibrated dates, 95% probability)



# Site Flood Hazard Survey and Report

## Sediment Bulges



Image 1

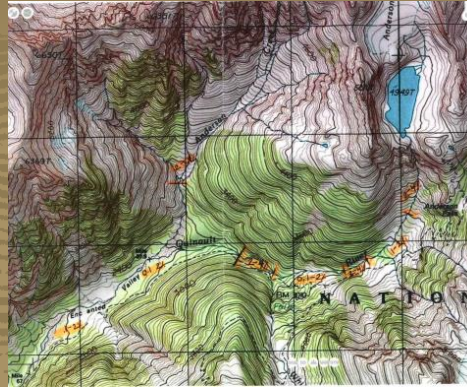


Image 2



Image 3



Image 4



Image 5



# Site Flood Hazard Survey and Report

Figure 19. Mature (incised) 1<sup>st</sup> order bulge.



1st  
Order

## Sediment Bulges (continued)

Figure 21. 3<sup>rd</sup> order bulge



3rd  
Order

Figure 18. Bulge associated trail damage (a, b)

(a) Stream pushed valley left (looking downstream). Note valley wall erosion (arrow).



(b) Associated trail damage (higher up, valley left).



2nd Order



# Site Flood Hazard Survey and Report

## Terrace Hazard Determination

Terrace Hazard Components	Relative Importance	Partial Terrace Persistence (years)
Bank erosion rates	very high	~25-30 years
Bulges	high	~20 years
River flow changes	medium-high	<20 years
Cross valley gradients	medium	<20 years
Bank erodibility	medium	<20 years
Bank heights	medium-low	<20 years
Wood-caused bed changes	medium-low	<20 years
Radiocarbon dating	low	--

# Site Flood Hazard Survey and Report

## Principal Conclusions

- The chalet terrace is at high risk of erosion and flooding within 20 years;
- The erosion and flooding may occur earlier, due to:
  - Large sediment loads from upstream, within 10 years;
  - Large floods are increasing in size and frequency.





# Site Flood Hazard Survey and Report

## Principal conclusions (continued)

- If the Chalet is moved, the recommended location is to the easternmost terrace edge;
  - Short-term solution, at best;
  - Tree damage (fallen and standing) should be minimized;
- Area experiencing historically unprecedented river conditions, increasing hazard estimate uncertainty.



# The Section 106 Process

- Section 106 of the NHPA says we must identify and consider the effects to historic properties from any action we take.
- For this action, the chalet is the historic property that will be affected.
- No matter what decision we make – removal (by NPS or the river) or moving - the chalet will be adversely affected.
- Now have to work with our Section 106 consulting parties to determine how to address that effect.



# Overview of the Consulting Party Process

## What is Section 106 Consultation?

- Consultation is the heart of the Section 106 process.
- We work primarily with State Historic Preservation Officers (SHPOs) and Tribal Historic Preservation Officers (THPOs).
- Other individuals and organizations with a legal or economic interest in the project may also be consulting parties
- Consulting parties for this project include the SHPO, tribes, and interested parties who were invited or whose requests were accepted



# Status of Section 106 Process

- Starting consultation with consulting parties on mitigation measures
- Mitigation measures will be documented in a Memorandum of Agreement (MOA)
- Final signed MOA will be completion of Section 106 process
- Relationship to NEPA – EA awaiting completion of Section 106 before signing of decision document





# Status of Section 106 Process

Mitigation measures already addressed from the 2014 MOA:

- Photographs and Written History Completed (HABS)
- Important pieces of historic fabric removed and saved

Potential mitigations for this project may include:

- Historic preservation on other structures
- Funding toward park cultural resource staffing needs





## Next Steps for Overall Project

- Consulting Party meetings
- Develop the MOA
- Finalize FONSI





# Thank You!

The presentation and slide deck will be posted on the project webpage after the meeting. We will be starting consulting party meetings in January; we welcome any thoughts and ideas about mitigation that you would like to share with us by December 31, so that we can bring them to our consulting party meetings.

Provide your ideas for NHPA mitigation on the project website at <https://parkplanning.nps.gov/EVCEA2NHPA> or hand-deliver or mail them to:

Olympic National Park  
Attn: Superintendent Sarah Creachbaum  
EVC NHPA Ideas  
600 E. Park Avenue  
Port Angeles, WA 98362

For further information visit:  
<https://parkplanning.nps.gov/EVCEA2>

# Overview of the Consulting Party Process

## What is the role of a consulting party?

- Share your views, receive and review pertinent information, offer ideas, and consider possible solutions
- It is up to you to decide how actively you want to participate in consultation.





# Overview of the Consulting Party Process

## How are consulting parties identified?

- Parties with a demonstrated interest in the undertaking, with either an economic or legal relation to the project, or affected properties, or concerned with the undertaking's effect on historic properties;
- Recommendations from SHPO;
- Those who have been invited;

## Who are the consulting parties for this project?

- SHPO, tribes, and interested parties who have accepted invitations or whose requests have been accepted to date.

# Overview of the Consulting Party Process

## How you can request to become a Consulting Party

Consulting Party request letters should be addressed, and hand-delivered or postmarked by December 18, 2021, to:

Olympic National Park  
Attn: Superintendent Sarah Creachbaum  
EVC Consulting Party Request  
600 E. Park Avenue  
Port Angeles, WA 98362



- When composing the request, explain why your expertise and involvement is beneficial.
- In your letter please be sure to include an email address where follow-up information can be sent, to include information for upcoming meetings.



# Next Steps for Consultation



## What are the next steps for consultation?

- Work with consulting parties to craft mitigation measures and agreement document.
- Agreement document will be available for public review before signature.

*Protecting Historic Properties*

ADVISORY COUNCIL ON HISTORIC PRESERVATION

*Protecting Historic Properties:*

A CITIZEN'S GUIDE TO  
SECTION 106 REVIEW



[WWW.ACHP.GOV](http://WWW.ACHP.GOV)



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