Colliery Dams Update

2014-SEP-15

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Acting General Manager
Community Development & Protective Services

Colliery Dams Review

- Is mitigation required?
- Technical Committee (TC)
- TC Objectives
- Seismic Analysis
- Flood Analysis
- Hydraulic Study
- Council Reports:
- Options
- Summary
- Next Steps

Is Mitigation Required?

- Fatalities
- Injury
- Property damage
- Environmental damage
- Asset management
- Recreation amenities
- SFN approval
- DSS approval
- Permitting
- Signage removal

Technical Committee Composition

Representatives from:

- Snuneymuxw First Nation
- Colliery Dam Park Preservation Society
- City of Nanaimo
- Golder Associates engineering firm
- Facilitator

Technical Committee Objectives

Development of an environmentally minimally invasive, cost- and time-effective solution while satisfying required safety standards:

- The safety of downstream residents and workers;
- Dam Safety Section requirements;
- The respective objectives of the City, Snuneymuxw First Nation, the Colliery Dam Park Preservation Society and the community;
- Environmental concerns, including fisheries habitat and ecology;
- Cost-effectiveness; and
- Having a timely permanent solution in place in 2014 if possible, but no later than 2015, with shorter-term mitigation in place if required in 2014.

Lower Dam

Lower Dam Embankment

Winter Conditions


KEEP OUT
OF SPILLWAY

Hydraulic Study

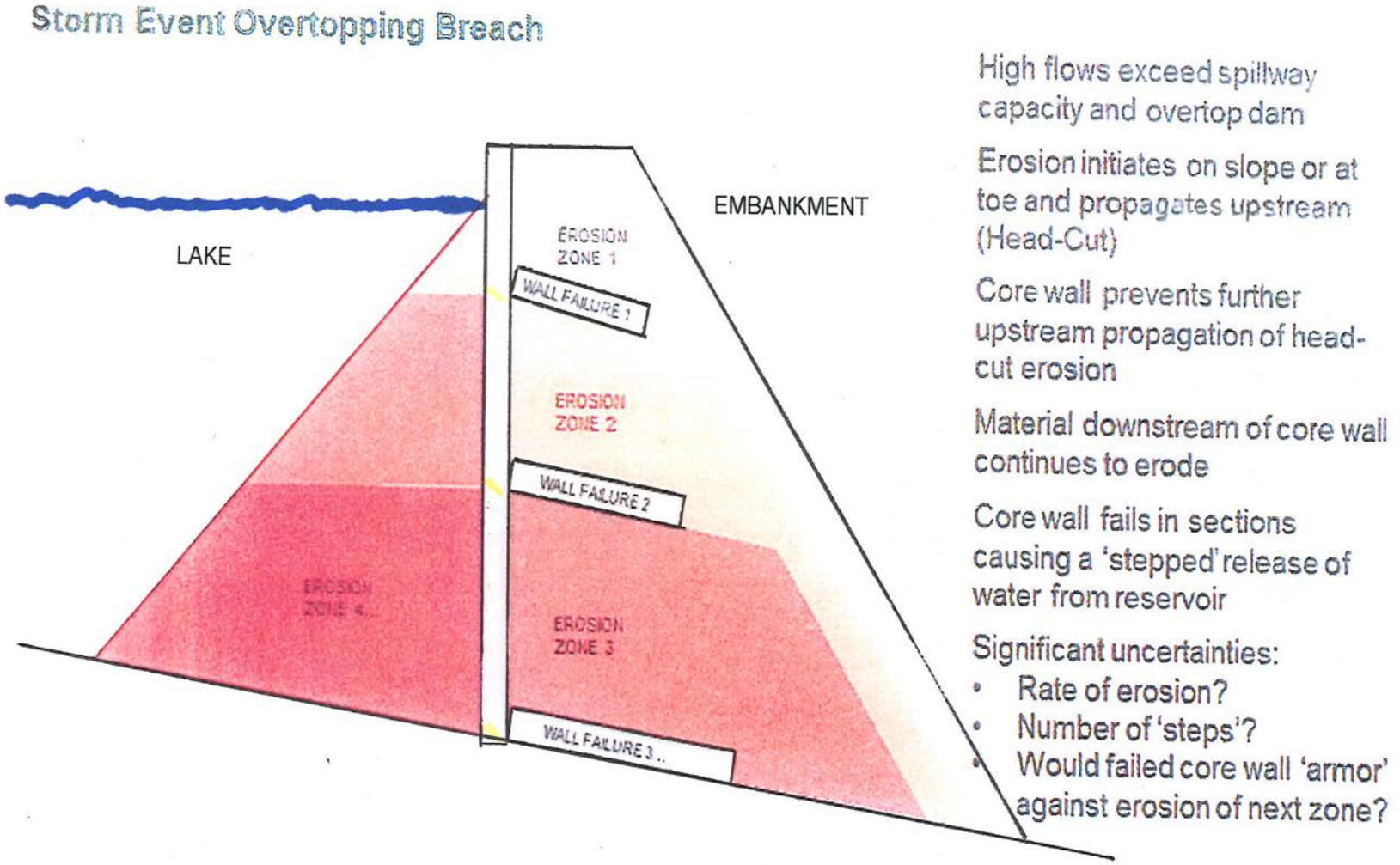

Figure 10: Overtopping Breach Stepped Progression Illustration

Modeling Dam Failure

Staff Reports

- Council 2014-JUL-14
- Council 2014-AUG-11
- Council 2014-SEP-08
- Council 2014-SEP-15

Remediation Options

	OPTION	INITIAL COST	TIMELINE	BUILDING COST	OUTCOME
1.	Hydraulic Study	$150,000 - $250,000	4 months	Study will not determine building cost	Study will test both current dam stability and embank-ment stabilization options that may be used in remediation options
2.	RFQ/RFP	$200,000 - $400,000	4 months	To be determined by contractors	Design/build contractors will prepare proposal and costs to complete remediation
3.	Sole source to GSI (upon qualifying and approval of stabilization proposal)	$100,000 - 200,000	3 months	$3.0± million (estimated)	GSI will submit qualifications for review and prepare proposal and costs to complete remediation, based on specifications (including peer and Dam Safety Section review)
4.	Design/Tender – spillway labyrinth	0	6 months	$8.2 million (estimated)	Remediation completed

Summary

- Is there a problem with the dams?
- How can the dams be remediated?
- Why is remediation needed now?
- Who is liable:
  - If the dams fail?
  - If the engineered solution is not successful?
- What will be the final outcome after the dams are remediated?

Next Steps

- Council direction – RFQ / RFP
- Final option determined by Feb, 2015
- Design/Tender/Permitting Feb - Jun, 2015
- Construction July-Sep, 2015