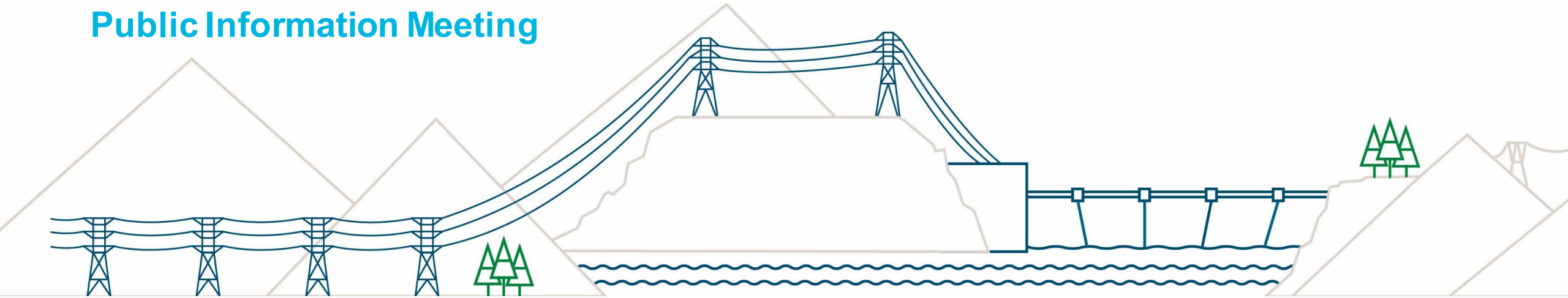
Alouette-Stave-Ruskin Water Use Plan Order Review

Public Information Meeting



September 14, 2021

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Objectives and Agenda

- Objectives
  - Provide an overview of the Alouette-Stave-Ruskin Water Use Plan Order Review (WUPOR) process
  - Discuss preliminary priority issues for the WUPOR
  - Identify next steps in the WUPOR process

- Agenda
  - Welcome & Introductions
  - WUPOR Context and Overview
  - Preliminary Priority Issues List
  - Next Steps and Q&A

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Virtual Meeting Etiquette

- Use the ‘raise your hand’ button or the chat box for comments/questions
- Use your camera, particularly when speaking
- Mute your microphone when not speaking
- Please don’t use a virtual background with video to save bandwidth
- Share air space so that everyone can participate
- Challenge ideas, not people
- We aren’t recording this session, and kindly ask that others do not record

WUPOR Context and Overview

History of Water Use Planning

Water Use Planning at Alouette and Stave-Ruskin was a condition of the Stave Falls Powerplant Replacement Energy Project Certificate

Alouette

- First Water Use Plan developed in 1996
- Second plan developed from 2005 to 2008, in accordance with Guidelines
- Current Order issued in 2009 replacing the 1996 Order
- *Fisheries Act* Authorization issued in 2010

Stave Ruskin

- Water Use Plan submitted in 1999, revised and re-submitted in 2003
- Order issued in 2004
- *Fisheries Act* Authorization issued in 2010

Water Use Planning Objectives

The WUPs sought to balance power production with other water uses

Alouette

- Power
- Fish
- Aquatic Ecosystem
- Cultural Resources
- Recreation
- Flooding

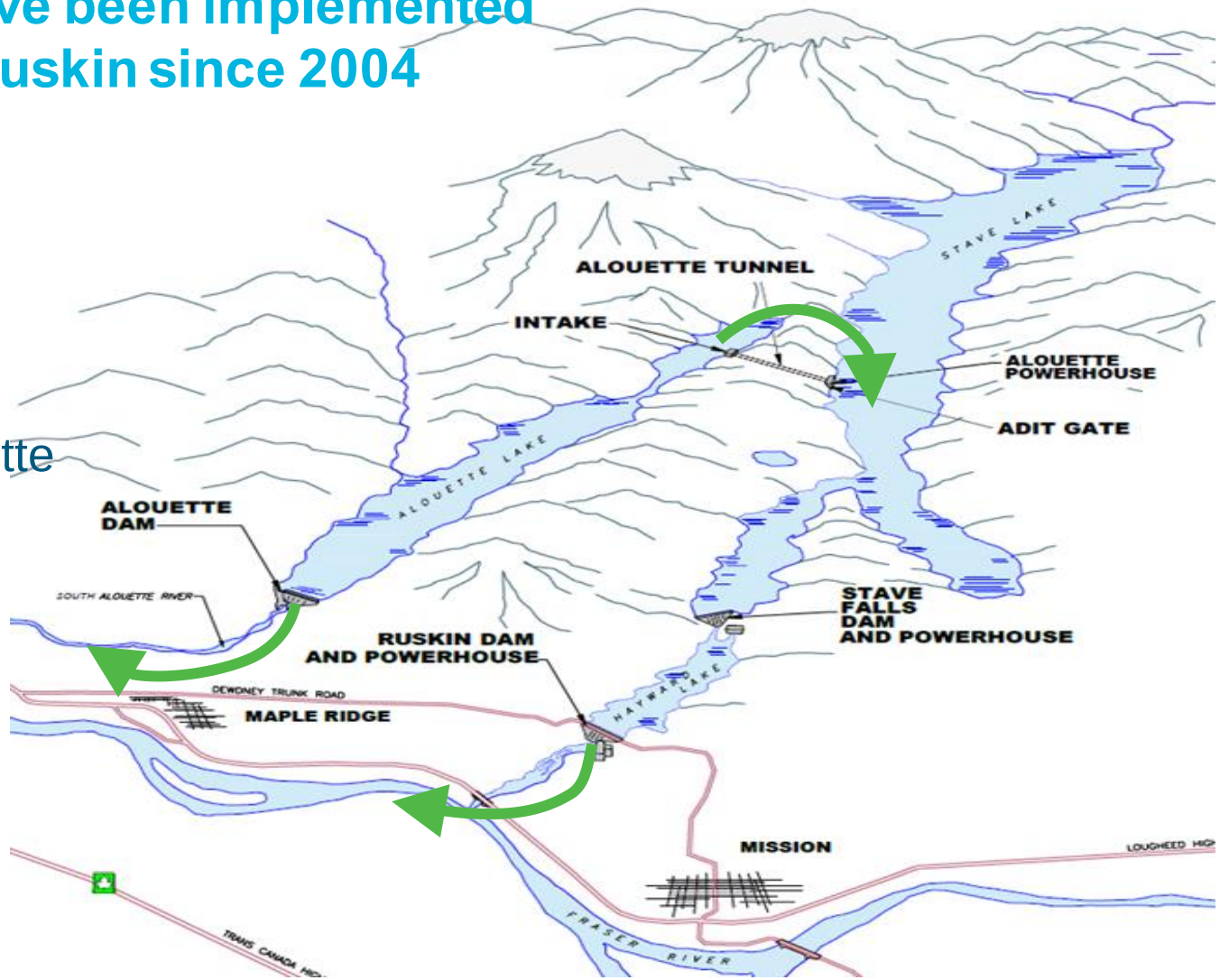
Stave-Ruskin

- Power
- Fish
- First Nations
- Recreation
- Wildlife

Implementing the WUPs

Ordered operating requirements have been implemented at Alouette since 1997, and Stave-Ruskin since 2004

- Reservoir elevation targets
- Downstream flow requirements
- Tailrace water elevations at Ruskin GS
- Spring surface water releases at Alouette



Monitoring Studies

Studies in the Alouette and Stave-Ruskin systems

Alouette System (2009 Order) - Seven studies

- 6 related to fish and fish habitat
  - five river and one reservoir
- 1 related to archeology

Stave-Ruskin System (2004 Order) - Ten studies

- 9 related to fish and fish habitat
  - 3 focussed on Stave Reservoir
  - 1 focussed on Hayward Reservoir
  - 5 focussed on the Lower Stave River
- 1 related to archaeology

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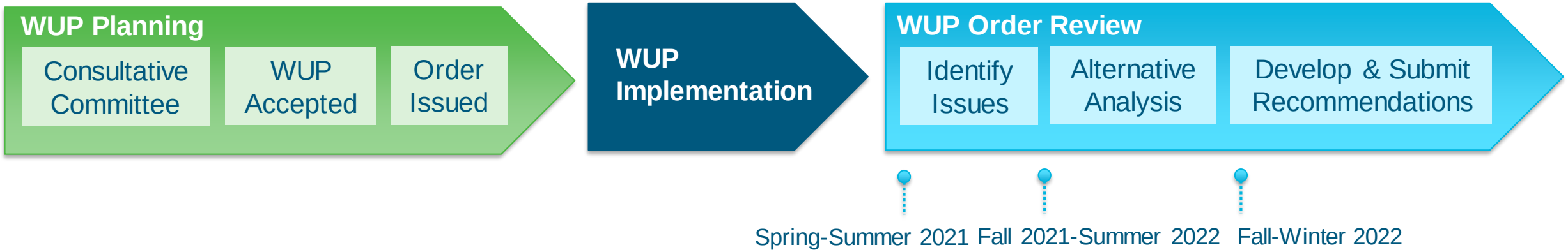
What is the Process for the WUPOR?

The Review has three phases

1. **Issues Identification:** Identify priority issues to focus on in the WUP Order Review
2. **Alternative Analysis:** Develop and evaluate alternative hydro operations along with other actions that could address those issues using Structured Decision Making (SDM) methods
3. **Recommendations:** Informed by the analysis of alternatives, develop and submit recommendations to the Water Comptroller on proposed combined Order for Alouette and Stave-Ruskin



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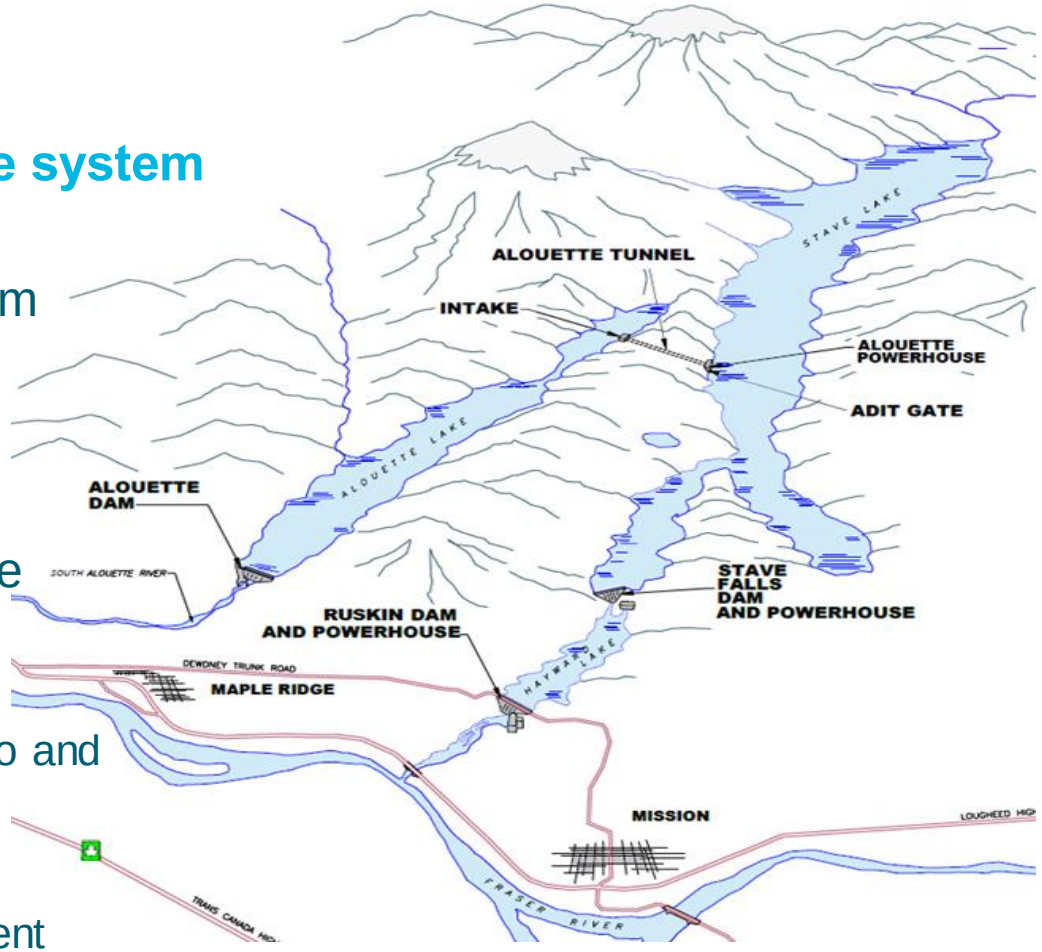
Combining the Orders

A combined Order will reflect how we currently operate the system

- Alouette and Stave-Ruskin are operated as an integrated system
  - Operations in one system affect the other
- The Order Review will examine the interactions and trade-offs between the systems in identifying potential changes that can be made to operations
  - Input from First Nations, regulators, key stakeholders, BC Hydro and other interested parties will be considered
  - Where there are competing interests, trade-offs between different ways of operating will be explored and discussed



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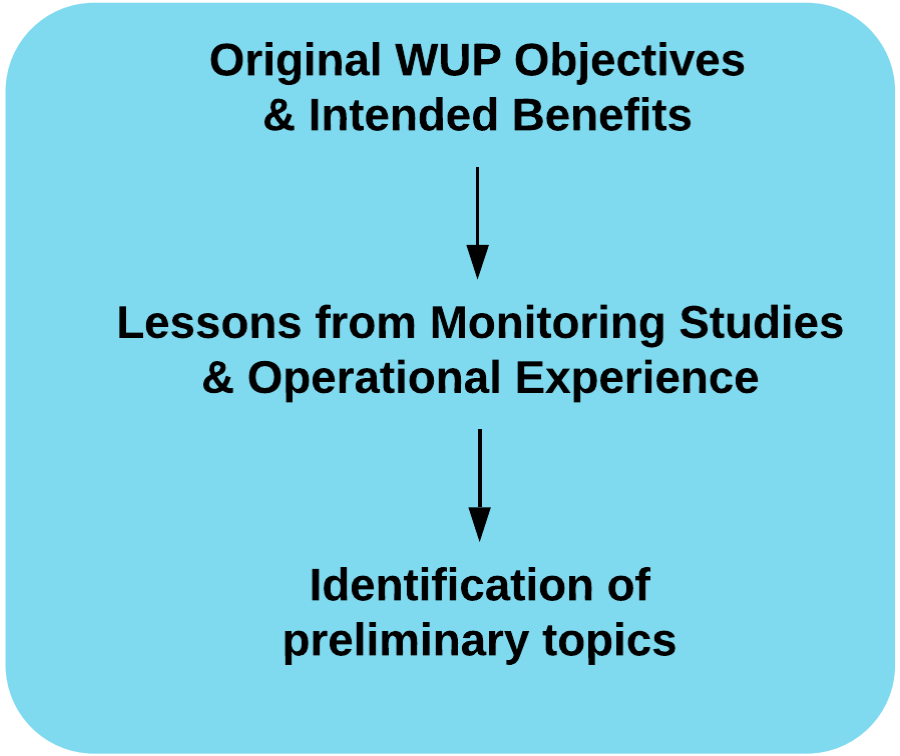
WUPOR Issues Identification

Identifying Issues

Issues are being identified in many ways

- Previous Consultative Committee Reports and Water Use Plans
- New information obtained since the Orders were issued:
    - Results of WUP monitoring studies
    - Operational experience
- Input from First Nations, regulators and stakeholders



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Preliminary priority issues

The WUPOR will focus on priority issues

- We've identified the following preliminary priority issues for discussion
  - Fish & Aquatic Habitat
  - Flooding
  - Archaeology
  - Recreation
  - Climate Change
  - Combined Order
- Different parts of the system have different priority issues

Key Discussion Questions

- Feedback?
- Need more information?

Alouette Reservoir

Preliminary Priority Issues	
Fish and Fish Habitat	• Fish entrainment concerns through the Alouette tunnel • Smolt outmigration from Alouette Lake Reservoir • Increasing surface flows from the reservoir for spring smolt outmigration
Archaeology	• Archaeological reservoir monitoring program ALUMON7 was completed, and more work was recommended to be undertaken as part of the Reservoir Archaeology Program (RAP)
Recreation	• Improve recreation quality and simplify operations of the Alouette Lake Reservoir, consider consistent reservoir levels throughout the summer recreation season

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South Alouette River

Preliminary Priority Issues	
Fish and Fish Habitat	• Smolt outmigration from Alouette Reservoir, WUP program has continued under FWCP • Increasing spring surface flows from the reservoir for smolt outmigration • Fish passage concerns, Sockeye trap and truck program ongoing • Increasing minimum/base flows
Flooding	• Minimize flood damage to people and property while incorporating any requested flow changes
Archaeology	• More archaeological work was recommended to be undertaken as part of the RAP
Recreation	• Minimize adverse impacts to recreation in the South Alouette River

Stave Reservoir

Preliminary Priority Issues	
Fish and Fish Habitat	• Studies indicated a delay in drawdown timing may increase littoral productivity
Recreation	• Potential to simplify recreation constraints if required
Archaeology	• Archaeological reservoir monitoring program SFLMON10 was completed, and more work was recommended to be undertaken as part of the RAP • Concerns with effects to heritage sites from reservoir fluctuation and erosion

Hayward Reservoir

Preliminary Priority Issues	
Fish and Fish Habitat	• Operational recommendation to refine elevation constraints, supported by fish stranding monitoring and local inflow management

Lower Stave River

Preliminary Priority Issues	
Fish and Fish Habitat	• Tailwater elevations and adaptability to climate change pressures • Spawning habitat - tailwater availability concerns
Archaeology	• Archaeological reservoir monitoring program SFLMON10 was completed, and more work was recommended to be undertaken as part of the RAP • Concerns with effects to heritage sites from erosion in the Stave River Delta

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System Wide

Preliminary Priority Issues	
Climate Change	• Climate change impacts to water conveyance issues and system operations • Incorporating adaptability into the Order e.g. low inflow years
Combined Order	• Opportunity to combine priorities across both watersheds • Potential trade-offs between systems related to water conveyance and timing
Indigenous Knowledge	• Interest in incorporating Indigenous Knowledge

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Next Steps

Next Steps

- Set up the Order Review Advisory Committee
- Ongoing public engagement
- Confirm and assess issues
- Prepare report for submission to the Comptroller of Water Rights
- Seek renewed *Fisheries Act* Authorization

Further Information and Contact

- Project information and updates will be available at: www.bchydro.com/alouette
- If you have any questions or comments related to the project or would like to discuss potential issues further, you can reach us at:
  - E-mail: Projects@bchydro.com
  - Phone: 1 866 647 3334

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