

BC Hydro La Joie Dam Improvement Project  
Access & Accommodation Study

# Report Highlights

January 2025

**KGS**  
GROUP





# What is the study about?

**BC Hydro is making upgrades and improvements to the La Joie Dam.**

La Joie Dam is at the top of the Bridge River System near the town of Gold Bridge roughly 100 km west of Lillooet, in St'át'imc Traditional Territory. The dam impounds the Bridge River to form Downton Reservoir.

The La Joie Dam Improvement Project will address risks related to aging and seismic vulnerabilities. Construction will require temporary drawdowns of the reservoir (lowering the water level) so crews can access the lower parts of the dam and intake tower. Drawdowns happen in

winter when the reservoir is already low, creating tight construction windows to get the work done. Reliable access to this remote site and dependable worker accommodation is important to ensure construction stays on schedule. Even short delays could have big impacts on the overall schedule.

Once complete, the improvements to the dam will increase the ability for operations to buffer large inflows into the La Joie basin, which affects flows throughout the Bridge system, benefiting fish and fish habitat.



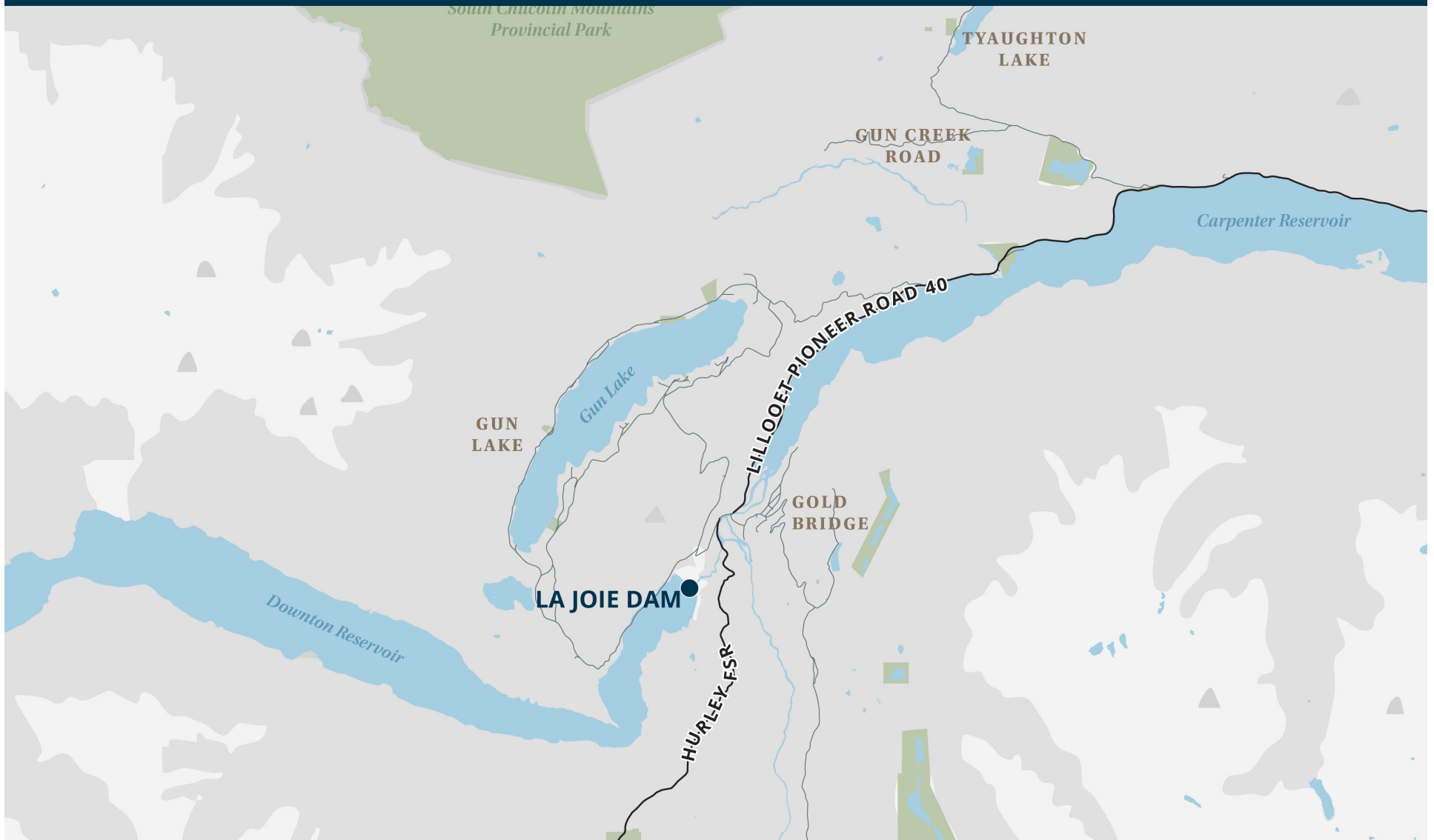
## Did you know?

The La Joie Dam is a rockfill dam built in 1951 for the purpose of providing storage for the Bridge River generating stations downstream.



This document provides an overview of the Access and Accommodation Study. To view the full report, please go to [bchydro.com/lajoie](https://bchydro.com/lajoie).

## Project Location



## Why a study was needed

To do these upgrades, BC Hydro will need to bring additional workers into the area (see graph below) who will need to stay relatively close to their work sites. Although there are lodging options in the area, there is not enough room for all the workers. Plus, these places are already being used by tourists and temporary workers from other industries. Without proper study, more workers in the region could result in undue strain on services in the area (e.g., healthcare, recreation, policing, etc.).

At the same time, these projects will increase traffic on the roads in the region, roads that can already prove challenging due to hazards such as rockfalls and avalanches. Public feedback also showed concern for adding more vehicles on the roads. The recent wildfires have also added more risk due to changes to the soil, plants and trees, waterways, and other natural features.

## What are the big questions we considered in this study?

We studied access options in the region and locations for a temporary work camp. The final report, called the La Joie Access and Accommodation Study, considered the following questions:

### How will workers, materials, and equipment access the region?

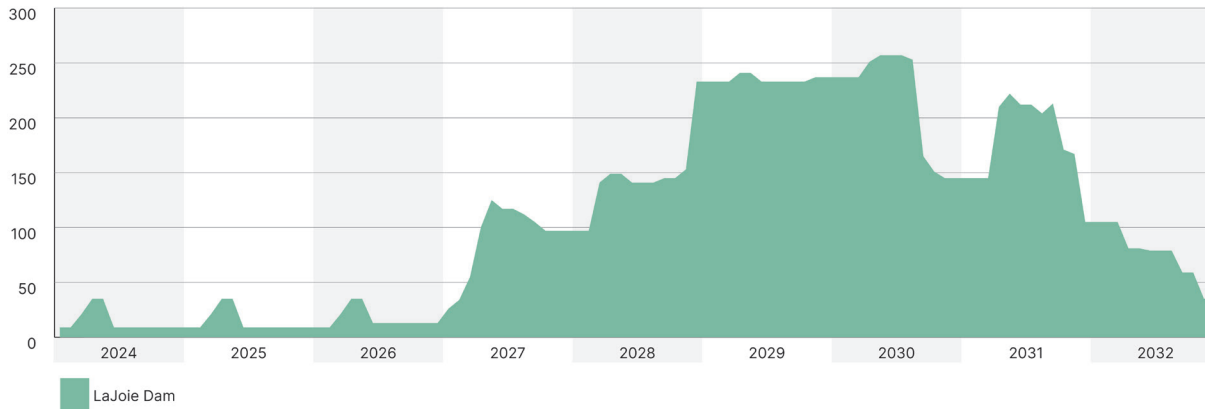
We looked at different routes for workers, materials, and equipment leading to the La Joie Dam from outside of the region, as well as routes between potential work camp locations and the Dam.

### Where will a work camp be built to house workers?

We looked at multiple locations where a temporary work camp might be built. Some of the key considerations for this evaluation include:

- proximity to residents
- proximity to watercourses
- cost and complexity
- terrain and tree cover

**UPPER BRIDGE RIVER VALLEY WORKER FORECAST**  
LA JOIE DAM  
Data Date: May 2024



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The data may be outdated, or inaccurate, and should be used for presentational purposes only.



## What components did the study include?

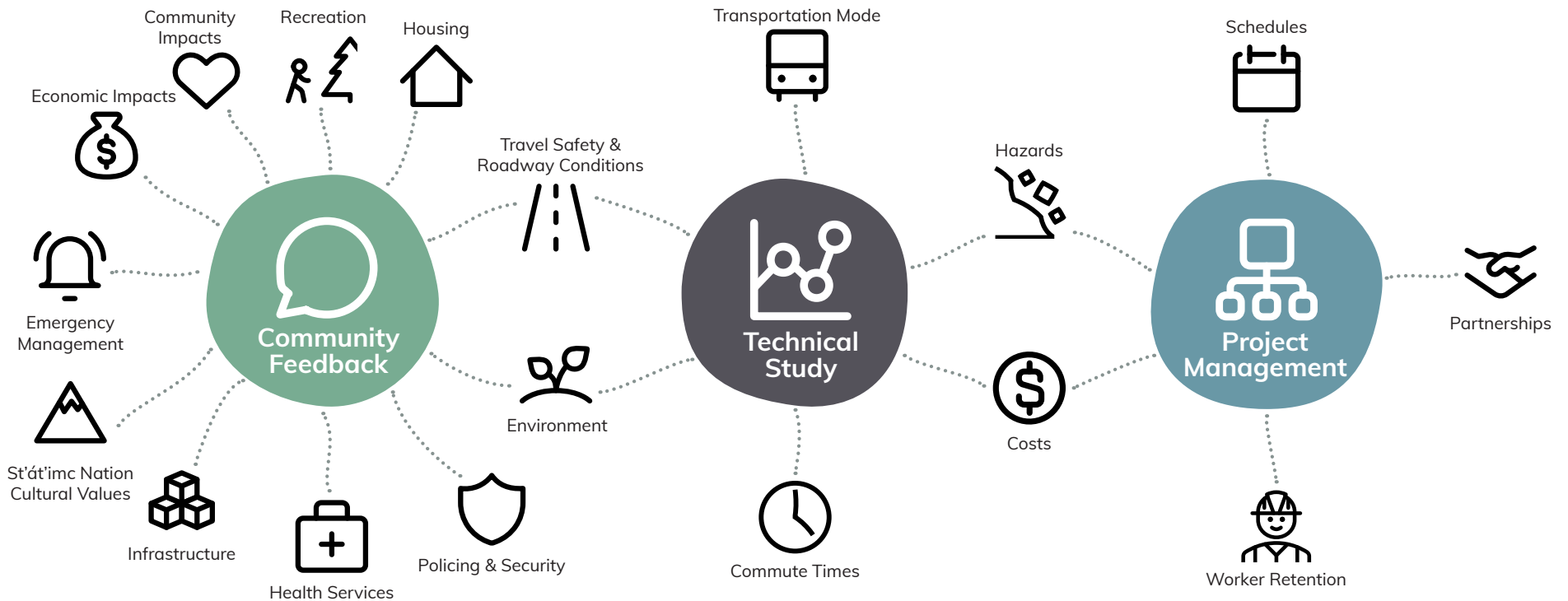
A key aspect of the study was to create a baseline of information regarding existing conditions, project needs, and community feedback.

This information was incorporated into a Structured Decision-Making (SDM) analysis, a framework used by BC Hydro to inform complex decisions.



To view the full report, please go to [bchydro.com/lajoie](https://bchydro.com/lajoie).

- Section 6 provides more detail on the Structured Decision-Making (SDM) analysis
- Section 7 provides a full list of the decision-making criteria and background information





## Outcomes of the study

This desktop study summarizes baseline information and results of the SDM analysis for both the access and accommodations options, with the intention to screen out options that are not worth advancing and focus resources on those options that are worth pursuing.

The study provided lots of information and answers as well as led to several new questions to explore during the upcoming feasibility stage.

## What does it mean for an option to be Rejected, Eliminated, or Carried forward?

- ➖ **Rejected:** these options were dropped from the process early in the evaluation due to overwhelming evidence that they would not be suitable for the project.
- ✗ **Eliminated:** these options were dropped from the process after a conceptual level evaluation revealed that they would not be suitable for the project for a variety of reasons.
- ➔ **Carried forward:** these options are being carried forward into the next stage of work which focusses on studying the feasibility of each option leading to selection of a preferred option.



To view the full report, please go to [bchydro.com/lajoie](https://bchydro.com/lajoie).

- Section 2 provides more detail on technical studies and assessments
- Section 3 provides more detail on St'át'imc, stakeholder, and public engagement





# Access

## Which access options were considered?

The study considered three access options to move workers, equipment, and materials:

- **Lillooet Pioneer Road 40 (Road 40)** (for moving workers, equipment, and materials)
- **Hurley River Forest Service Road (Hurley FSR)** (for moving workers, equipment, and materials)
- **Gun Lake Airstrip - helicopters, fixed-wing airplane** (for moving workers)

Access to the project site doesn't need to be limited to just one route. In fact, having redundancy in the access plan (i.e., more than one way to get to site) is an important factor for maintaining schedule.

Schedule is important for controlling costs, but also for minimizing disruption to communities and the potential risk to downstream environmental values that could result from extra reservoir drawdowns. This aspect of project scheduling is key to many of the trade-offs in the Access SDM analysis.



To view the full report, please go to [bchydro.com/lajoie](https://bchydro.com/lajoie). Sections 4 and 5 provides more detail on each potential option.



## Which options were eliminated or rejected?

Through the work of the study, one option was eliminated and another was rejected:

- ✘ The use of **helicopters** was eliminated due to the higher frequency of flights, higher costs, greater disturbance to residents and wildlife, and longer travel times compared to airplanes.
- The use of **float planes** to move workers was rejected early in the process due to lack of year-round availability, greater disturbance to area residents, higher cost, and the risk of conflict with recreational users on the lake.





## ➔ Carried forward: Road 40

Using Road 40 would result in a 15-16% increase in vehicle volumes, which translates to an average of about 50 project-related vehicles per day. The study assumes workers will travel by 10-person shuttle vans.

If Road 40 were used for the project, localized geohazard mitigations and safety improvements would be recommended.

### Outcomes and Questions

Improvements to Road 40 would benefit existing public users on this road and project traffic, but more project traffic on this road will increase the risk of road safety incidents during the project.

*Do the improvements outweigh the risk of having more vehicles on the road? Can these risks be effectively mitigated through management practices?*



### Examples of advantages

- 👍 Use of existing road minimizes new impacts
- 👍 Ownership of roadway remains with MoTT (formerly MoTI)
- 👍 Safety improvements benefit residents and projects throughout the Bridge River region

### Examples of disadvantages

- 👎 High exposure to geohazards
- 👎 Higher exposure to collision risk compared to the Hurley FSR
- 👎 No alternative route in winter months could result in longer project timelines
- 👎 Proximity to species at risk
- 👎 Proximity to riparian areas
- 👎 Longer drive time for project traffic on Sea to Sky

### Future study

- Confirm feasibility of recommended safety improvements and geohazard mitigations
- Confirm point of origin for workers, supplies, and materials
- Environmental and archaeological assessments



## ➔ Carried forward: Hurley FSR

Using Hurley FSR would result in a 17% increase in vehicle volumes (compared to current seasonal use) and a significant change to winter traffic as it is currently not maintained during the winter months. This translates to an average of about 50 project-related vehicles per day. The study assumes workers will travel by 10-person shuttle vans.

If the Hurley FSR were used for the project, all-season road upgrades and a winter maintenance program would be required.

Existing public access to the Hurley FSR would not be restricted by this project.

### Outcomes and Questions

Developing the Hurley route for year-round access would give the project critical redundancy and reduce the likelihood of schedule delays. However, upgrading the Hurley to provide year-round access is likely to have direct impacts on ecosystems along the road (e.g., through clearing, widening, changes to hydrology, disruption to wildlife behaviour) and is likely to attract more road users year-round which could lead to overuse and further impacts in areas that currently see relatively little use.

*Year-round and improved maintenance of the Hurley FSR relieves pressure on Road 40 but brings more traffic to the Hurley.*

*How will this impact recreation amenities and sensitive environment areas along the Hurley? What sort of measures might be implemented to mitigate these concerns?*

### Examples of advantages

- 👍 Significantly less geohazard exposure
- 👍 Shorter travel times
- 👍 Provides route redundancy should Road 40 be closed
- 👍 Less exposure to vehicle collisions compared to Road 40

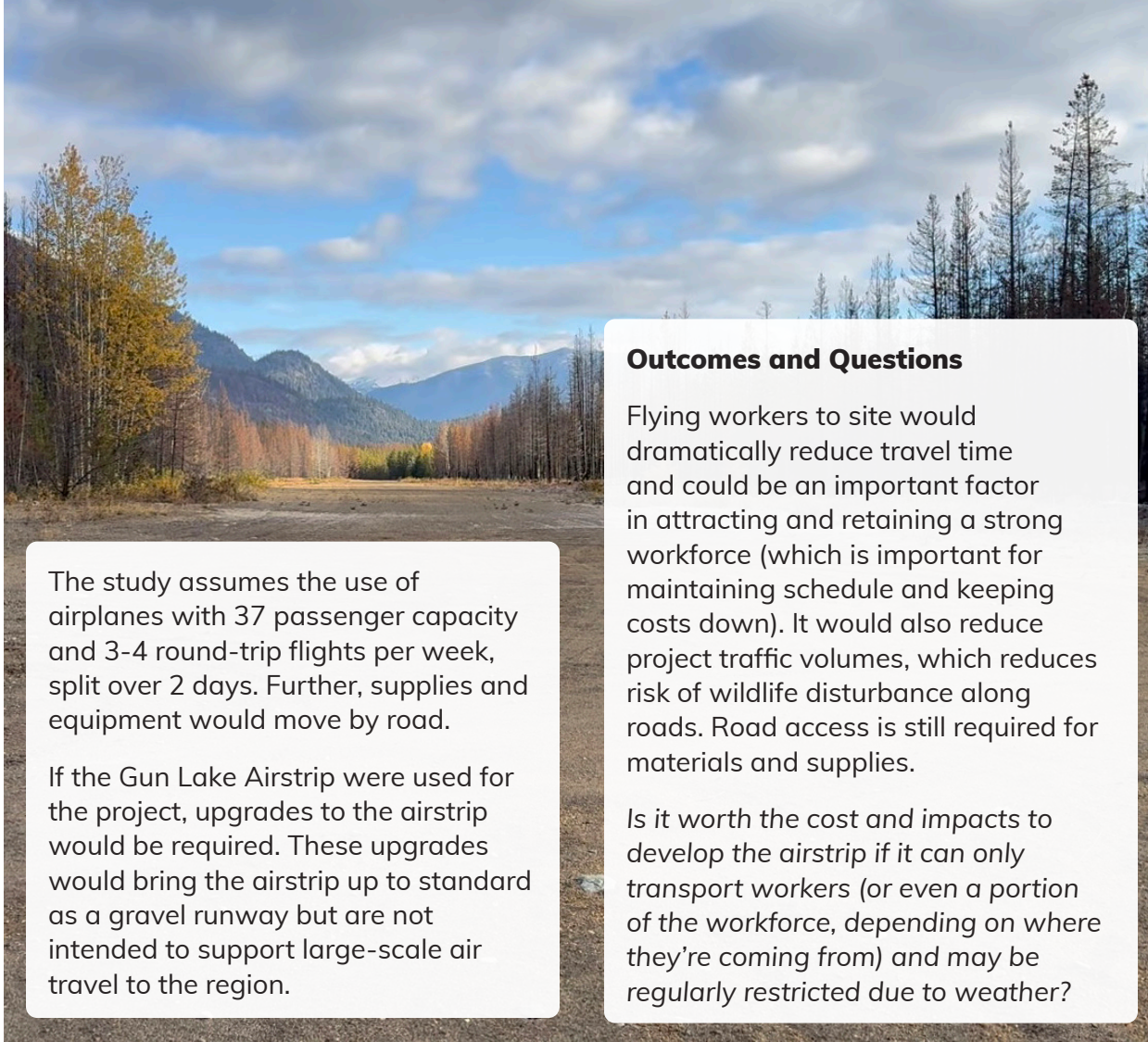
### Examples of disadvantages

- 👎 Major upgrades required
- 👎 Winter maintenance program required
- 👎 Potential for over use year-round (tourism, recreation, hunting, etc.) due to increased winter access and overall road improvements along the route

### Future study

- Environmental, archaeological, and socio-economic studies regarding impacts from year-round use
- Winter maintenance requirements
- Understand current recreation use
- Confirm point of origin for workers, supplies, and materials

## ➔ Carried forward: Gun Lake Airstrip



The study assumes the use of airplanes with 37 passenger capacity and 3-4 round-trip flights per week, split over 2 days. Further, supplies and equipment would move by road.

If the Gun Lake Airstrip were used for the project, upgrades to the airstrip would be required. These upgrades would bring the airstrip up to standard as a gravel runway but are not intended to support large-scale air travel to the region.

### Outcomes and Questions

Flying workers to site would dramatically reduce travel time and could be an important factor in attracting and retaining a strong workforce (which is important for maintaining schedule and keeping costs down). It would also reduce project traffic volumes, which reduces risk of wildlife disturbance along roads. Road access is still required for materials and supplies.

*Is it worth the cost and impacts to develop the airstrip if it can only transport workers (or even a portion of the workforce, depending on where they're coming from) and may be regularly restricted due to weather?*

### Examples of advantages

- 👍 Less people driving on local roads
- 👍 Eliminates exposure to geohazard and collision risk for the workforce
- 👍 Significantly shorter travel time

### Examples of disadvantages

- 👎 Increase in noise for residents near the airstrip

### Future study

- Weather monitoring to determine availability (flyable days per year)
- Confirm feasibility of necessary upgrades
- Further study into federal regulations and requirements
- Environmental and archaeological assessments





# Accommodation

## Which accommodation options were considered?

The study considered eight potential locations for the temporary work camp:

- **Mowson Pond Site**
- **Gun Creek Site**
- **Airstrip Site**
- **Gold Bridge Town Site**
- **Quarry-Adjacent Site**
- **Local Quarry Site**
- **Tower Site**
- **Hurley Site**

In the case of the Accommodations SDM, the analysis doesn't point to one single option that is clearly outperforming the others. Rather, several options were eliminated through the analysis, while others are being carried forward into the feasibility stage to be studied further before selection of a preferred option can take place.



To view the full report, please go to [bchydro.com/lajoie](https://bchydro.com/lajoie). Sections 4 and 5 provides more detail on each potential accommodation option.

## Which accommodation options were eliminated?

Through the work of the study, several options were eliminated:

- ❌ **Mowson Pond Site** was eliminated due to environment impacts and proximity to wildfire recovery zone
- ❌ **Gun Creek Site** was eliminated due to archaeological impacts and geotechnical hazards
- ❌ **Airstrip Site** was eliminated due to community and environment impacts and proximity to wildfire recovery zone
- ❌ **Tower Site** was eliminated due to site preparation complexities
- ❌ **Local Quarry Site** was eliminated due to ongoing use as an active quarry site



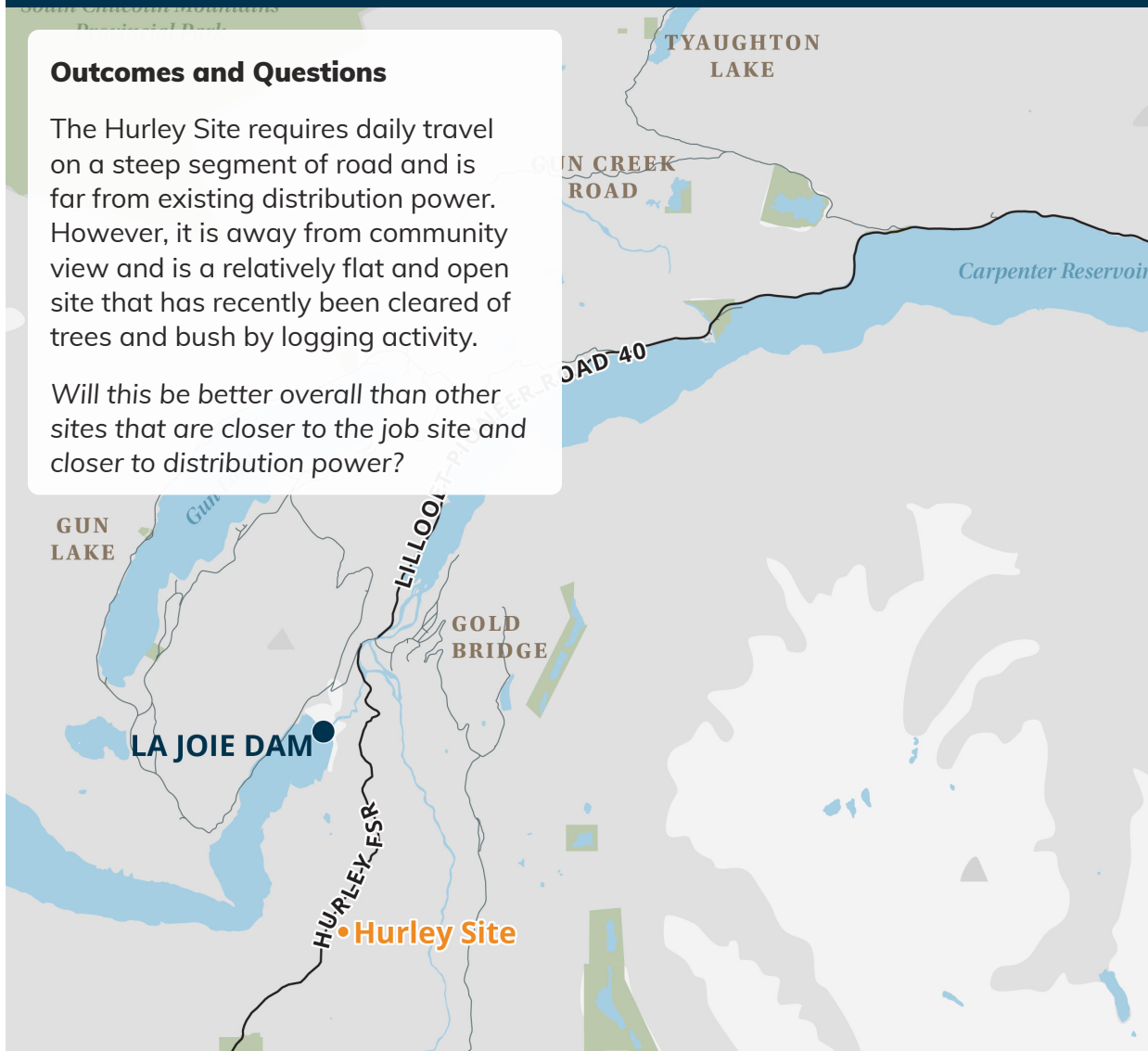


## ➔ Carried forward: Hurley Site

### Outcomes and Questions

The Hurley Site requires daily travel on a steep segment of road and is far from existing distribution power. However, it is away from community view and is a relatively flat and open site that has recently been cleared of trees and bush by logging activity.

*Will this be better overall than other sites that are closer to the job site and closer to distribution power?*



### Examples of Advantages

- 👍 Less tree clearing required
- 👍 Fewer residences nearby
- 👍 Less project-related traffic on Road 40 and near residences
- 👍 Less visible / more private
- 👍 Site does not overlap with mapped watercourses

### Examples of Disadvantages

- 🗨️ More disturbance to workers

### Future study

- Geotechnical assessments
- Environment and heritage assessments
- Truck/large vehicle access
- Camp layout planning

## ➔ Carried forward: Gold Bridge Town Site

### Outcomes and Questions

The Gold Bridge Town Site is closer than the Hurley site but there may be challenging geotechnical issues and there will be an impact on the community from daily transport of workers through town to the work site.

Can the geotechnical issues be resolved at less cost than the cost to get power to the Hurley site? Can we get better information on the timing and frequency of this vehicle traffic and options to mitigate this impact?



### Examples of Advantages

- 👍 Lower travel time for workers
- 👍 Existing roads are in fair condition
- 👍 Less tree clearing required
- 👍 Site does not overlap with mapped watercourses
- 👍 High archaeological potential but better option when compared to other options

### Examples of Disadvantages

- 👎 More residences near work camp
- 👎 More visible / less private location
- 👎 More site preparation
- 👎 Access route to work site is through town
- 👎 Proximity to species at risk

### Future study

- Geotechnical assessments
- Traffic impacts in Gold Bridge
- Environmental and heritage assessments
- Camp layout planning

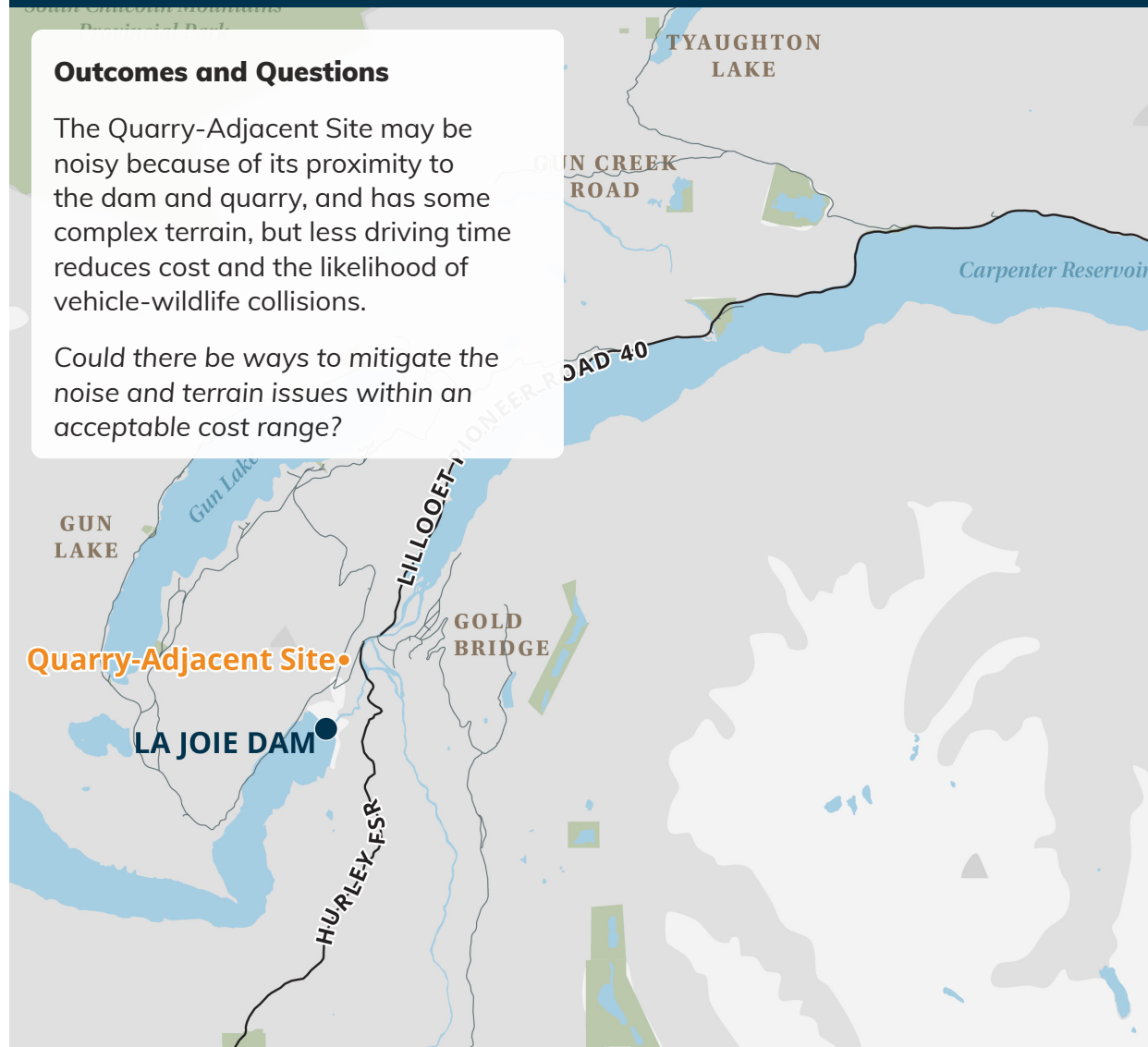


## ➔ Carried forward: Quarry-Adjacent Site

### Outcomes and Questions

The Quarry-Adjacent Site may be noisy because of its proximity to the dam and quarry, and has some complex terrain, but less driving time reduces cost and the likelihood of vehicle-wildlife collisions.

Could there be ways to mitigate the noise and terrain issues within an acceptable cost range?



### Examples of Advantages

- 👍 Lower travel time for workers
- 👍 Existing roads are in fair condition
- 👍 Fewer residences nearby
- 👍 Less project-related traffic near residences and wildlife corridors
- 👍 Lower road maintenance costs
- 👍 High archaeological potential but better option when compared to other options

### Examples of Disadvantages

- 👎 More site preparation
- 👎 Tree clearing required
- 👎 More visible / less private location
- 👎 Proximity to watercourses
- 👎 Proximity to species at risk

### Future study

- Noise impacts to workers
- Camp stability and layout plans
- Environmental and heritage assessments
- Geotechnical assessments



# Overall management and mitigations

These recommendations stem from broad concerns, suggestions, and requirements we heard from St'át'imc Nation, local communities, and stakeholders. These may require further study.



## Travel safety:

Recommendations address safe driving behaviour and safe roadway conditions.

This might look like:

- Safe driving strategies (mountain driving, how to pass, driving to conditions, etc.)
- Hazard mitigations, as needed
- Use of pilot vehicles



## Community well-being:

Recommendations address potential nuisances, as well as communications and coordination with local communities.

This might look like:

- A communication strategy
- Managing additional demand for local food, supplies, and services
- Worker Code of Conduct



## Environment:

Recommendations address the health of the natural environment.

This might look like:

- An Invasive Species Management Plan
- Rehabilitation / revegetation plans, as needed
- Education about respectful use of natural areas





**Emergency management:**

Recommendations address coordination and planning in the event of a natural disaster.

This might look like:

- An Emergency Management Plan



**Infrastructure:**

Recommendations address municipal services.

This might look like:

- Coordination with the Lillooet Landfill



**Security:** Recommendations address potential safety and security concerns associated with the work camp.

This might look like:

- Worker Code of Conduct



**Health services:**

Recommendations address worker health and the capacity of the healthcare system.

This might look like:

- Virtual medical appointments
- On-site medical supplies and personnel
- Coordination with Interior Health



**Geohazards:**

Recommendations address hazard mitigation along travel routes.

This might look like:

- Engineering/construction works
- Limiting travel/exposure time



**St'at'imc Nation cultural values:** Recommendations address potential impacts to St'at'imc Nation.

This might look like:

- Cultural awareness training for all workers
- Environmental mitigation and recovery measures



**Work camp accommodations:**

Recommendations address worker lodgings.

This might look like:

- Work camp aesthetics and amenities



**Recreation:**

Recommendations address the use of recreation amenities by workers.

This might look like:

- Education about proper use of recreation amenities
- Worker Code of Conduct



To view the full report, please go to [bchydro.com/lajoie](https://bchydro.com/lajoie). Sections 8 and 9 discuss the SDM outcomes and associated recommendations.



## Next steps

This study looked at the movement of workers, materials, and equipment and worker accommodations at the regional scale to help us understand the big-picture benefits and trade-offs for regional travel networks, services, and communities. This work reflected a **conceptual analysis**.

### Next Big Questions

The next step is to get more specific as we move into the **feasibility studies**. For example, this might look like studying if a work camp can be built on a specific site or how a specific stretch of roadway could be made safer.

Below are some of the components that will be studied further during the feasibility stage.

- Site preparation and camp layout planning
- Geotechnical, stability, and groundwater assessments
- Environment, archaeological, and heritage assessments (in collaboration with St'át'imc)
- Socio-economic considerations (recreation, healthcare, security, etc.)
- Feasibility design for access route upgrades
- Point of origin for workers, materials, supplies, and equipment
- Noise and vibration assessments
- Airstrip studies (ceiling height, wind study, etc.)

*\*As we start work on the feasibility stage, more considerations may arise, as such, this is not an exhaustive list of components to be studied during feasibility design.*

**BC Hydro will continue to communicate with the UBRV communities throughout the duration of the project and upcoming feasibility stage.**



# Thank you

BC Hydro and KGS would like to extend a thank you to everyone who participated in this study.

This includes St'át'imc Nation, local stakeholders, and the public.

Your knowledge and contributions helped us understand the region and your values, which helped shape this study and the resulting recommendations.

We appreciate your time and interest and look forward to continuing to work with you.