

JUMBO GLACIER RESORT – SUBSTANTIALLY STARTED DETERMINATION

- The Minister of Environment has determined that the Jumbo Glacier Resort project has not been substantially started.
- As a result, the environmental assessment certificate expired on October 12, 2014 and Glacier Resorts Ltd. cannot proceed with developing this project unless a new certificate is obtained.
- In making her determination, the minister focused on the physical activities that had taken place at the project site.
- While it is clear that some construction has been started, the minister was not convinced that the physical activity undertaken as of October 12, 2014 meets the threshold of a substantially started project.
- There is no specific formula to determine if a project is substantially started. The practice of the Environmental Assessment Office is to consider each situation case-by-case in its particular context.
- The documentation related to the minister's determination is available on the Environmental Assessment Office website.

Background:

- The Minister of Environment was required to make a determination because the *Environmental Assessment Act* requires that all approved projects must be substantially started within the time limit set out in the certificate or the certificate expires.
- Substantially started decisions are considered on a case-by-case basis. In making her decision, the Minister focused on the physical activities that had taken place at the project site. In this case, the Minister determined that the physical activities undertaken on the various components did not meet the threshold of a substantially started project.
- In making her determination, the Minister considered:
 - submissions from Glacier Resorts Ltd., the Ktunaxa Nation Council and the Shuswap Indian Band;
 - guidance from the court decision in *Taku River Tlingit First Nation v. British Columbia*;
 - the Environmental Assessment Office's substantially started determination report; and
 - her own observations from a visit to the Jumbo Glacier Resort project site on October 11, 2014.
- The Minister considered information submitted by the Ktunaxa Nation Council and the Shuswap Indian Band because the project is located in their asserted traditional territories.
- The project is a year-round ski resort development in the Jumbo Creek valley, 55 km west of Invermere. The Province issued an environmental assessment certificate for the project on October 12, 2004. As a result of an extension issued in 2009, the expiry date of the certificate was October 12, 2014.

Communications Contact: Greg Leake
Program Area Contact: Paul Craven

387-2470
387-6748

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Thursday, June 18, 2015 2:28 PM
To: Caul, Doug D ABR:EX
Subject: Jumbo
Attachments: Jumbo_Reasons for Determination_18June2015_Final.pdf

In case you don't have the reasons yet.

Paul

**In the matter of the Environmental Assessment Act
S.B.C. 2002, c.43
(Act)**

and

**In the matter of a
Substantially Started Determination
under Section 18(5) of the Act**

for the
Jumbo Glacier Resort Project

of
Glacier Resorts Ltd.

Reasons for Minister's Determination

On June 18, 2015, pursuant to Section 18(5) of the Act, I, the Minister of Environment, determined that the Jumbo Glacier Resort project has not been substantially started.

1. NATURE AND SCOPE OF THIS DETERMINATION

This determination is about whether the Jumbo Glacier Resort project was, in my reasonable opinion, substantially started by October 12th, 2014 as required by the *Environmental Assessment Act* (Act).

Every environmental assessment certificate (EAC) has a deadline by which the project must be substantially started in the reasonable opinion of the Minister. That deadline is usually five years and can be extended, on one occasion only, for an additional five years to a maximum of 10 years.

If I determine the project was substantially started, then the EAC, including any conditions, remains in effect for the life of the project. If I determine that the project had not been substantially started, then the EAC will be deemed to have expired on October 12, 2014.

2. BACKGROUND

The Jumbo Glacier Resort project is a year-round ski resort development in the Jumbo Creek valley, 55 km west of Invermere. At full build-out, the project would include an estimated 104 hectare resort base area consisting of a hotel with 6,250 bed units (which includes 750 bed units for staff accommodation), condominium vacation homes, and associated amenities. The Controlled Recreation Area, which includes areas licenced for ski runs and connecting territory, encompasses approximately 5,925 hectares and includes lift-serviced access to several nearby glaciers at an elevation of up to 3,400 metres.

An extensive process was undertaken by the Environmental Assessment Office (EAO) to ensure that Glacier Resorts Ltd (GRL), the holder of the EAC, and the Ktunaxa Nation Council (KNC) and Shuswap Indian Band had an opportunity to provide their views on whether the project was substantially started.

In a letter dated October 3, 2014, GRL, KNC and the Shuswap Indian Band were invited to provide EAO with any information they considered relevant to the making of the substantially started determination. Submissions were received from all three. Following receipt of these submissions, GRL, KNC and the Shuswap Indian Band were also given an opportunity to respond to each other's submissions. GRL and KNC provided submissions in response.

On December 11, 2014, EAO advised that the determination process would be delayed until a compliance determination could be made on whether the construction of two buildings (the day lodge and the service building) are "completely outside of the avalanche hazard area" as required by Condition 36 of the EAC. EAO concluded it would prudent to wait until there was greater clarity on the compliance status before proceeding further with the substantially started determination.

On March 21, 2015, GRL provided EAO Compliance and Enforcement with an engineering avalanche risk assessment. On April 24, 2015, EAO Compliance and Enforcement concluded its investigation and determined that the day lodge and the service building were not in compliance with Condition 36. An order was issued requiring GRL to cease construction on the day lodge and service building locations to minimize the extent of the non-compliances. GRL had stopped any construction as of October 12, 2014 but the order prevents GRL from recommencing construction at those building locations.

Shortly thereafter, the substantial start determination process resumed.

To assist in my determination, EAO prepared a report. GRL, KNC and Shuswap Indian Band were given an opportunity to review a draft version of the report for accuracy and to confirm that it accurately reflected their views on the impact of the compliance determination on the substantially started determination.

The report was provided to me on June 5, 2015, along with the submissions made by GRL, KNC and the Shuswap Indian Band.

In addition to the process outlined above, EAO Compliance and Enforcement staff conducted an inspection on October 13, 2014 to document all construction activity completed by end of day October 12, 2014. The report from this inspection was made available to GRL, KNC and the Shuswap Indian Band.

All the submissions by GRL, KNC and the Shuswap Indian Band are available on the EAO website.

I also had an opportunity to personally visit the site on October 11, 2014 to familiarize myself with it and see first-hand the progress that was made on the project.

3. SUBSTANTIALLY STARTED DECISIONS GENERALLY

The Act requires that the holder of the EAC must have "substantially started the project". "Project" is defined as any activity that has or may have adverse effects or the construction, operation, modification, dismantling or abandonment of a physical work, but the term "substantially started" itself is not defined.

It is worth emphasizing that the Act does not require that a project be operational nor does it require the project to be substantially "completed" or "constructed". Also, because the Act includes the word "substantially", the project must obviously be more than merely started.

There is no specific formula to determine if a project is substantially started and the practice of EAO is to consider each project on a case by case basis in its particular context. This makes sense given the wide range of projects reviewed under the Act.

The EAO User Guide provides the following general questions as guidance:

- Has there been a significant investment of time, effort, and resources to physically develop one or more main project elements?
- Does the activity amount to a significant or important step to develop the overall project, or is the activity considered ancillary, secondary, or temporary?
- Would the proponent have undertaken the activity regardless of the project?

Although the Act does not define substantially started, the Supreme Court of British Columbia provided assistance in its interpretation in a recent court case¹ as follows:

- The definition of project is intended to address primarily physical activities affecting the land environmentally, as contrasted with bureaucratic activities, for example, which do not.
- The decision maker should focus less on the permits which have been granted and the money expended, and more on what has taken place physically at the site.
- Temporary structures at the site, if they will soon be removed, followed by remediation, are less important to consider than structures which will be in place for the duration of the project.
- To have been substantially started, the project needs to be started in its essentials in a real and tangible way.

4. APPLICATION TO THIS SUBSTANTIALLY STARTED DETERMINATION

Before beginning my consideration, I want to stress that my role here is limited only to the question of whether the project has been substantially started and not in any way to reassess the merits of the project. I recognize that there are strongly held views both for and against this project, but these views are entirely irrelevant to the question of whether the project is substantially started.

(a) Physical Works Undertaken

Based on the guidance from the courts, it is clear that I should focus on what physically took place on the site after October 12, 2004, but before October 12, 2014. Because it occurred within this period, the timing of construction was not an issue for this project.

GRL identified the following nine physical works undertaken:

1. The first floor slab and foundation preparations for the day lodge at the resort base;
2. The first floor slab of the service building at the resort base;
3. The foundation anchors for the departure station of a quad chairlift;
4. A seasonal bridge to span Karnak Creek within the resort base area;
5. A temporary bridge at kilometre 15.8 of the Jumbo Forest Service Road;
6. The permanent bridge at kilometre 15.8 of the Jumbo Forest Service Road;

¹ Taku River Tlingit First Nation v. British Columbia (Minister of Environment), 2014 BCSC 1278

7. A well to provide potable water to the resort has been drilled and tested;
8. Clearing and grading of approximately 250 metres of construction access road within the resort base to allow access to the day lodge, service building and the lift base foundation locations from the Jumbo Forest Service Road; and,
9. Improvements to site specific locations along approximately 4 km of the existing Jumbo Forest Service Road, including brushing, installation of culverts and ditch maintenance.

KNC raised a number of issues regarding why the partial construction of the service building and the day lodge should not be considered in my determination. They challenged the quality of the construction and questioned whether the structures were located outside of the tenure area. They also stated that the project was not in compliance with conditions of its EAC, including Condition 36, which requires that:

"The proponent will ensure that the proposed residential and commercial structures will be located completely outside the avalanche hazard area".

Of these issues, I have concluded that only the compliance with Condition 36 of the EAC has any significant bearing in this determination.

On the quality of the construction, GRL provided evidence from professional engineers attesting to its design and soundness. In light of that information, I do not think it is appropriate for me to consider this issue further. I also accept the information provided by Mountain Resort Branch that the development was within the tenure boundaries.

Unlike Condition 36, the non-compliance with the other conditions found by EAO Compliance and Enforcement and mentioned by KNC in their submissions does not have a direct linkage to the physical works constructed. Non-compliance with conditions other than Condition 36 does not raise the possibility that existing physical structures will need to be removed, or that they will contribute to a lesser degree to the overall completion of the project. Accordingly, non-compliance with conditions other than Condition 36 is not a factor in my determination. While I want to stress that I do not in any way condone non-compliance, it must also be recognized that it is not unusual for a project to need to address issues of non-compliance, during the course of its development.

As noted above, EAO Compliance and Enforcement conducted an investigation and determined that the day lodge and the service building were not in compliance with Condition 36.

GRL was ordered to cease construction at both the day lodge and the service building until the order is rescinded or the construction is in accordance with the certificate (construction could be brought into compliance with the certificate by an approved amendment to the certificate; alternatively, GRL could, subject to obtaining any necessary approvals, remove or abandon the current structures). EAO Compliance and Enforcement did not proceed with further enforcement because there was no immediate risk to the environment or human safety. As noted above, construction had stopped as of October 12, 2014.

The determination of non-compliance was based largely on an expert report prepared by Dynamic Avalanche Consulting, provided by GRL in response to EAO's request of December 11, 2014. The report concluded that:

- "The Service Building is mostly located within the Red Zone (high risk) for which the CAA [Canadian Avalanche Association] (2002) guidelines recommend construction of new buildings not normally permitted. This recommendation is intended to apply to occupied structures, either temporarily or permanently occupied."
- "The Day Lodge is located mostly within the Blue Zone (moderate risk), for which the CAA (2002) guidelines recommend: Construction of new buildings, such as industrial plants and temporarily occupied structures, possibly permitted with specified conditions. Conditions may include structures reinforced for avalanche forces, construction of avalanche defences and requirement for evacuation plans or a combination of these."

GRL advised EAO that it is "committed to implementing all of the recommendations in the Dynamic Avalanche Consulting report with respect to the day lodge and service building. Mitigation efforts for the day lodge will include structural reinforcement as necessary, a comprehensive avalanche control and safety plan (with frequent avalanche control via explosives and the implementation of reliable, all-weather systems such as Gazex), and an evacuation plan for both employees and the general public. Likewise, the service building will be converted to a structurally reinforced storage building that will not be accessed during winter". Unless these commitments are incorporated into an environmental assessment certificate, they are not legally binding and GRL's ability to implement them is dependent on obtaining an amendment to the certificate and possibly other authorizations.

The first question for me to consider is what, if any, impact does EAO's determination that the service building and day lodge are out of compliance with Condition 36 have on the substantially started determination. GRL suggested that the referenced compliance matters are administrative in nature and should have no bearing on the substantially started decision. They point out that neither the EAO User Guide nor the courts identify compliance as a matter relevant to the substantially started determination. KNC, on the other hand, argued that the non-compliance with Condition 36 should be a key consideration.

In my opinion, the question of the impact of non-compliance should be addressed as a matter of weight.

Given GRL's intention to apply for amendments to the EAC that, if approved, would allow completion of the day lodge and completion of a structure at the location of the service building, there is a possibility that these structures will remain in their current locations and contribute to the overall development of the project. On the other hand, if environmental or safety issues arise in the course of reviewing an amendment, and the EAC is not amended to allow completion of these facilities, it is possible that they will need to be repurposed (e.g. as storage, summer view platform) or abandoned. The

possible need to develop a service building and day lodge at another location, suggest a lower weighting may be accorded to the current structures

I have concluded that both the service building and day lodge should be credited towards the substantially started determination to some degree because they are works, albeit imperfect works, that have been constructed as part of the overall project.

However, it is not reasonable to count them to the full extent I would have if they were compliant, particularly given it is not certain that an amendment to the EAC will be granted.

With respect to service building, the impact of the non-compliance, as noted by the KNC, is significant since it is clear that the building cannot be used for its intended purpose because it is located in a red zone. It is possible that the building may have some use as a structurally reinforced storage building that will not be accessed during winter. However, that was not its original and approved purpose. Accordingly, the weight I apply to the commencement of the construction of this structure is considerably less than it would be if it had been a service building that was compliant with the EAC.

Similarly, the weight I attribute to the day lodge construction is somewhat less than I would attribute to it had it been fully compliant as of October 12th, 2014. It is possible that the day lodge, with proper mitigation measures and an amendment to the EAC, could be used for its intended purpose. I also note that it is only partially in the blue zone.

Although the service building and the day lodge were the focus of most of the submissions, there were also other activities that should be considered. There was less controversy regarding these aspects of the project. They are also overall less significant to the project than the beginning of construction of the service building and the day lodge.

Foundation anchors for a quad chairlift have been constructed. No issues were raised with respect to this work and I find that the partial construction of the quad chairlift should be given full weight in this determination.

A temporary seasonal bridge spanning Karnak Creek within the resort base area was purchased and installed. It was removed for the winter of 2014/15, but GRL intends to re-install the bridge for next year's use. As a temporary structure it has less weight than a permanent structure, but I conclude it should be afforded some weight in this determination.

GRL constructed both a temporary bridge and a permanent bridge at kilometre 15.8 of the Jumbo Forest Service Road. Once the permanent bridge was in place, GRL removed the temporary bridge. I have counted both the permanent bridge and the temporary bridge as contributing to the start of the project; however, I have not counted these works the same as if they were the final and permanent access solution for the resort. Permanent access to the resort is ultimately to be by way of a new access road on the north side of Jumbo Creek. While the alignment of this new road has been approved,

construction has not yet begun. While the majority of the cost of the bridge at kilometre 15.8 work was borne by the municipality and not by GRL, the bridge is an element of the overall project and I have not discounted it based on who paid for the work.

GRL constructed approximately 250 metres of new roadway within the resort base to allow access to the day lodge and service building. Improvements to the Jumbo Forest Service Road were undertaken with regards to sediment and erosion control.

GRL drilled and tested a well to provide potable water to the resort for Phase 1.

GRL purchased a platter lift. The lift is to be located at the Project site but is not yet installed. I do not give any weight to this element given the need to focus determinations on what has taken place physically at the site.

In reviewing this work, I found the costs of each item a useful but rough indicator of the significance of the physical effort undertaken; however, the expenditure of money alone is not an indicator of a substantially started project.

b) Plans, Studies and Permits

While the court has suggested that greater emphasis be placed on physical works, I do not think I am prevented from considering the building plans and design work, or environmental plans, studies and permits related to the works constructed for the project or other physical activities that are part of the project. I do think work and money undertaken to develop these plans, studies and permits has some bearing in the substantially started determination.

In this project, there was clearly work undertaken to develop plans and obtain permits, and to the extent this work and these expenditures were necessary for the completion of the physical activities and works that are part of the project and have occurred or been developed, it is a factor in assessing whether or not those activities and works constitute a substantial start. However, in my view it is a minor rather than a major consideration. I have considered this work and expenditures in assessing the substantial nature of the physical activities and works that have been completed, and credited GRL for that work.

However, because the Farnham Glacier lodge and permanent access road on the North side of Jumbo Creek have not been constructed, I have not considered tenuring, permitting design work for that lodge and engineering work for that road in my determination.

5. OVERALL DETERMINATION AND CONCLUSION

A key issue raised in the submissions was what yardstick or benchmark the activity should be measured against. In most circumstances, the elements of the project as described in the EAC and the project description are the logical and principled place to start.

In this project, I acknowledge it is not as simple as that, given the phased nature of the development and the master development process. It is important to recognize that a ski resort is developed in phases on a projected, but not binding, timeline.

KNC urged me to assess substantial determination against the full build out of the development. I do not think that is a reasonable approach given the phased nature of this type of development.

GRL, on the other hand, argued that the appropriate benchmark was the components of the project required to begin operations. I also have difficulty with this approach. I am troubled by the fact that such a benchmark is not grounded in the project as described during the environmental assessment, the master planning process or the tenuring of the project. Moreover, GRL did not point to a detailed document or plan that specifically set out its plan to achieve the start of operations. In the absence of such a plan, a start of operations threshold can be defined in many different ways. KNC, for example, argues that start of operations requires significantly more activity than put forth by GRL.

For these reasons, I think the more reasonable approach is one based on what is described as the phase 1 of the project. Phase 1 contains the following:

Lifts and Ski Areas

- Glacier Dome gondola
- Two chairlifts in Jumbo Valley
- Three glacier lifts on Glacier Dome
- Mountain top restaurant/refuge
- Glacier Dome mid-station
- Glacier Dome base day lodge
- Main resort day lodge

Services

- Tertiary sewer treatment plant
- Emergency power generation
- Water wells
- Piped propane system
- BC Hydro connection

Development

- Lodge/hotel/condominiums
- Bed and breakfast establishments
- 30 townhouse condominiums
- 25 chalets
- A heli-ski lodge location with overnight accommodation for guests will be offered to RK Heliski Panorama to provide for a base of operations in the heart of its territory

This does not mean that progress is required on every element of the phase 1 but it is a useful comparator in considering the substantial nature of work completed.

GRL also raised in its submissions a number of mitigating factors that they felt should be considered in my evaluation. While many of these factors would be relevant in determining whether an extension should be granted to the EAC, I do not think I should consider them in the context of a final substantially started threshold. Put another way, I do not think the threshold can be adjusted based on these mitigating factors. While I am sympathetic to the challenges that all projects face in proceeding to construction, it is not unusual or unique for projects to need to overcome challenges. In addition, the source of these challenges may be varied and subject to competing points of view. For these reasons, it is more appropriate to focus on the physical elements of the project as they were present on October 12, 2014.

After consideration of the submissions of GRL, KNC and the Shuswap Indian Band, the guidance from the court, EAO's report and my own observations during my site visit, and having weighed carefully the evidence before me regarding activities undertaken to develop the project as outlined above, I have determined that the project, in my reasonable opinion, had not been substantially started by October 12, 2014.

While it is clear that some construction has been started, I am not convinced that the physical activity undertaken on the various components meets the threshold of a substantially started project.

I have reached this conclusion taking into account the fact that the service building and day lodge have been determined to be non-compliant, but balancing that with the possibility that GRL may, through an amendment to its EAC, ultimately been allowed to continue to use these buildings.

I have also turned my mind to the question of whether the project would be substantially started if the service building and day lodge were fully compliant with Condition 36. I have concluded that even if these partially constructed structures were weighted fully, the work undertaken would still not be sufficient to meet the substantially started threshold.

Accordingly, the environmental assessment certificate expired on October 12, 2014.



Honourable Mary Polak
Minister of Environment

Signed this 18th day of June, 2015

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Wednesday, May 6, 2015 4:22 PM
To: Caul, Doug D ABR:EX
Subject: FW: Jumbo: Substantially Started Determination Draft Report
Attachments: Substantially Started Determination Report Jumbo Glacier Resort Project May 5 2015 draft.doc

Doug,

I understand you attending the briefing with Wes tomorrow. Attached is our draft substantially started report that might be useful. We just briefed Wes.

From: Craven, Paul EAO:EX
Sent: Wednesday, May 6, 2015 12:18 AM
To: Wes.Shoemaker@gov.bc.ca; Jardine, Kevin EAO:EX; Mitschke, Matt ENV:EX
Cc: Lewthwaite, Jennifer EAO:EX
Subject: Jumbo: Substantially Started Determination Draft Report

Attached is the draft report for Minister that we have prepared. It closely follows the approach we took in Tulesquah.

Our next step is to share it with the company and the FN for comment on any inaccuracies and also so they can confirm their positions on the impact of the compliance determination (re avalanche). This is consistent with the process commitment we made at the beginning of the process and confirmed in our last letter.

s.14

Provided I can get this out shortly, I anticipated giving until May 15th or 19th for response. We should be able to turn around any comments relatively quickly so the Minister would have time to consider her decision and still meet her objective of a decision in June.

Wes – I understand Kevin and I are updating you this afternoon.

Paul

DRAFT

Substantially Started Determination

Glacier Resorts Ltd

JUMBO GLACIER RESORT PROJECT (Project)

DRAFT May 5, 2015

A. ISSUE

To determine if the Jumbo Glacier Resort Project has been substantially started, pursuant to Section 18(5) of the *Environmental Assessment Act*.

In reviewing the report below and the submissions provided, the decision maker should consider, whether all the relevant activity, taken as a whole and in the context of this Project, meets the requirement, in her reasonable opinion, that the Project was substantially started by October 12, 2014.

In considering the issue, greater emphasis should be placed on the physical works as per the court decision in *Taku River Tlingit First Nation v. British Columbia (Minister of Environment)*, 2014 BCSC 1278 (TRTFN v. BC).

With respect to non-physical works, such as studies, plans, licenses and permits that the Environmental Assessment Certificate required be undertaken before construction could commence, the decision maker needs also to consider what weight, if any, is appropriate in the circumstances.

In evaluating the activity outlined above, the decision maker should consider whether the activity would have been undertaken regardless of the Project and whether that activity amounts to a significant or important step to develop the overall Project, or simply ancillary, secondary, or temporary to the Project.

B. BACKGROUND

1. Project Description

The Jumbo Glacier Resort Project (Project; see Figure 1 also link http://www.for.gov.bc.ca/ftp/mountain_resorts/external/!publish/web/resort_plans/approved/Jumbo/P2-CRA-Map.pdf) is a year-round ski resort development in the Jumbo Creek valley, approximately 55 km west of Invermere, British Columbia. The project is the \$900 million development of Glacier Resorts Ltd (GRL or Certificate Holder). At full build-out, the Project would include an estimated 104 hectare resort base area consisting of a hotel with approximately 6,250 bed units (which includes 750 bed units for staff accommodation), condominium vacation homes, and associated amenities for the resort community. The Controlled Recreation Area which includes areas licenced for ski runs and connecting territory, encompasses approximately 5,925 hectares and includes lift-serviced access to several nearby glaciers at an elevation of up to approximately 3,400 metres.

The Project covers a large area, which for simplicity, is considered here to be comprised of the Jumbo Creek, Farnham Creek, Commander Glacier and Glacier Dome sub-areas.

The Master Plan for the resort calls for development to proceed in three phases. There is no set timeframe for completion of these phases. To illustrate, Phase 1 of the Project includes;

- The Glacier Dome gondola
- Five lifts
- A mountain top restaurant
- The Glacier Dome midstation
- The Glacier Dome day lodge
- The main resort day lodge
- A sewer treatment plant
- Emergency power generation
- Water wells
- A propane system
- Hydro connection
- A lodge, hotel and condos
- Bed and breakfast establishments
- 30 townhouses
- 25 chalets

The project is in the asserted traditional territory of the Ktunaxa Nation Council (KNC) and the Shuswap Indian Band. The KNC first expressed reservations about the project in September 1991 and has regularly expressed their opposition to the project since that time. The Shuswap Indian Band is supportive of the project and in 2008 signed an Impact Management and Benefits Agreement with GRL.

2. Project History

On July 12, 1995 an Interim Agreement between the Province and GRL, originally signed in 1993, was reaffirmed, confirming GRL's "sole proponent" status and authorizing access to Crown land to carry out investigations and assessments necessary for the environmental assessment of the Project.

The environmental assessment of the Project commenced in July 1995 under the newly proclaimed *Environmental Assessment Act*. In May 1998, final Project Report specifications were issued that described additional information GRL needed to provide to complete the review.

In December 2002 the new *Environmental Assessment Act* came into effect and GRL was provided until December 31, 2003 to submit the information required to complete the EA review. On December 30, 2003, GRL submitted the Project Report (including a

Master Plan Concept) to the Environmental Assessment Office (EAO). On October 12, 2004 an Environmental Assessment Certificate (EAC or Certificate) was granted to GRL for the Project enabling them to proceed with other required permitting.

In October 2005 RK Heliski Panorama (RK) pursued a judicial review of the issuance of the Certificate. That judicial review was unsuccessful. In January 2007 RK appealed the decision and the appeal was also unsuccessful.

In July 2007 Mountain Resorts Branch approved GRL's Master Plan and began the work necessary to execute a formal Master Development Agreement (MDA).

In January 2009 with the expiry of the Certificate approaching, EAO extended the Certificate expiry by five years to October 12, 2014.

On March 20, 2012 the Minister of FLNRO announced the execution of the Master Development Agreement for the Project.

On November 20, 2012 the Minister of Community, Sport and Cultural Development announced the incorporation of Jumbo Glacier Mountain Resort Municipality (Municipality). The incorporation of the Municipality was immediately challenged by the West Kootenay EcoSociety in a judicial review. That judicial review was unsuccessful but is under appeal.

On May 21, 2013 the Municipality passed a rezoning bylaw to permit construction in the Farnham Glacier drainage. GRL initiated soil testing, design development and other pre-construction works at the Farnham site shortly thereafter.

In September 2013 in response to the arrival of protestors at the Farnham site, GRL pursued an injunction to have the protestors removed. An injunction was not granted.

In January 2014 Ktunaxa Nation Council (KNC) pursued a judicial review of the MDA decision. While that judicial review was unsuccessful, the KNC has appealed the decision. That appeal has not yet been heard.

On August 20, 2014 GRL commenced making improvements to the Jumbo Forest Service Road, including the installation of a bridge at 15.8 km, so they could access the Jumbo village site with vehicles and equipment.

On September 24, 2014 and October 3, 2014 respectively, the Municipality issued building permits for construction of the Jumbo day lodge and service building foundations. Construction of these works commenced immediately and continued until the Certificate expiry date, October 12, 2014.

3. Information Gathering Process

On October 3, 2014 the EAO wrote GRL to describe the process it would use to gather information related to a substantial start determination. The letter invited GRL to provide EAO with any information GRL deemed relevant to the making of the substantially started determination.

On October 3, 2014 EAO also independently wrote the KNC and the Shuswap Indian Band and invited them to provide EAO with similar submissions. GRL, KNC and Shuswap Indian Band were all given until November 3, 2014 to send submissions to EAO. On October 29, 2014 at the request of the KNC, EAO extended the deadline for receipt of these submissions by one week until November 10, 2014.

On October 13, 2014 EAO Compliance and Enforcement staff conducted an inspection to document all construction activity completed by end of day October 12, 2014¹.

The following submissions were received by the deadline:

- A November 7, 2014, Pheidias Project Management Corporation (Agent for GRL) report: Jumbo Glacier Resort, Making the "Substantially Started" Determination with 10 Appendices²;
- A November 10, 2014, KNC submission: KNC Submission to the BC Environmental Assessment Office re: Has the Jumbo Glacier Resort Project been "substantially started"? with 11 Attachments³; and,
- November 3, 2014, Shuswap Indian Band letter to Paul Craven, EAO⁴.

Following receipt of the above submissions, GRL, KNC and the Shuswap Indian Band were given until November 21, 2014 to respond to each other's submissions.

On November 21, 2014 EAO received:

- A November 21, 2014, Pheidias Project Management Corporation (Agent for GRL) report: Jumbo Glacier Resort, Responses to the Ktunaxa et al Submissions with 15 Appendices⁵; and,
- A November 21, 2014, KNC Review of Glacier Resort Limited's, Submission Regarding Jumbo Glacier Resort 'Substantially Started with one Appendix and the Wildsight/Jumbo Creek Conservation Society submission attached⁶.

¹ TAB 5 – EAO SUBSTANTIALLY START SITE INSPECTION OCTOBER 13, 2014

² TAB 2 - GLACIER RESORTS LTD. SUBMISSION NOVEMBER 7, 2014

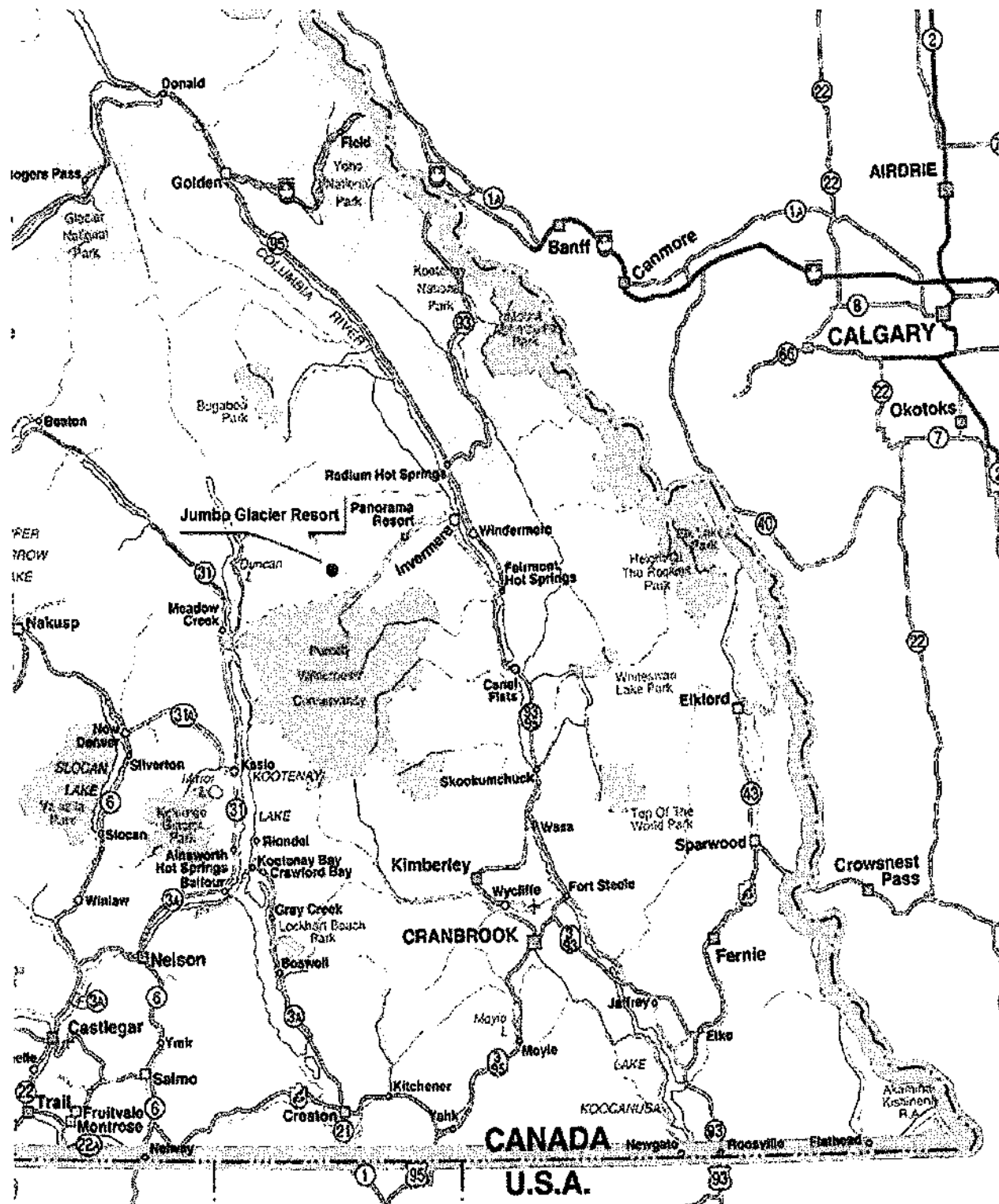
³ TAB 3 - KTUNAXA NATION COUNCIL SUBMISSION NOVEMBER 10, 2014

⁴ TAB 4 – SHUSWAP INDIAN BAND SUBMISSION NOVEMBER 3, 2014

⁵ TAB 8 – GLACIER RESORTS LTD. RESPONSE TO KTUNAXA NATION COUNCIL

⁶ TAB 9 – KTUNAXA NATION COUNCIL REVIEW OF SUBMISSION

Figure 1: Location of Jumbo Glacier Resort Project



One of the issues raised in relation to the substantial start determination was whether the day lodge and service building sites are 'completely outside of the avalanche hazard area' as required by Condition 36 of the EA Certificate.

On December 11, 2014 EAO wrote GRL⁷, the KNC and the Shuswap Indian Band to advise that although the impact, if any, of the compliance status of Condition 36 on the substantially started question has not been determined, it would prudent to wait until there is greater clarity on the compliance status before proceeding. Accordingly, the process was delayed until compliance with Condition 36 could be determined.

On March 21, 2015 GRL provided EAO Compliance and Enforcement the engineering avalanche risk assessment titled Jumbo Glacier Resort: Snow Avalanche Risk Zoning For A Day Lodge And Service Building (Avalanche Report)⁸.

On April 24, 2015 EAO Compliance and Enforcement concluded its investigation and determined that the day lodge and the service building were not in compliance with Condition 36. An order was issued requiring GRL to cease construction on the day lodge location and the service building location in order to minimize the extent of the non-compliances.

Also on April 24, 2015, EAO advised that since the compliance determination had been made, the substantial start determination for the Project would now proceed.

C. DISCUSSION

1. General Considerations for Substantially Started Decisions

Under Section 18 of the Act, an EAC must set a deadline of not more than 5 years after the issue date by which time the project, in the reasonable opinion of the Minister, must have been substantially started.

The Act allows for a one-time-only extension of that deadline of not more than 5 years. If, in the reasonable opinion of the Minister, the project is deemed to have been substantially started, that certificate remains in effect for the life of the project. If the project is deemed not to have been substantially started, the certificate expires.

If EACs were not subject to a predetermined time limit, the adverse environmental; economic, social, heritage or health effects that may be caused by the project may have changed by the time a certificate holder decided to start the project. Some reasonable

⁷ TAB 13 – LETTER TO GRL FROM EAO REGARDING DECISION DEFERRED

⁸ TAB 14 – GRL REPORT ON COMPLIANCE WITH AVALANCHE HAZARD

term is required to allow the certificate holder to start its project recognizing not only that there are further regulatory processes to complete, but also depending on the complexity, it might take considerable time to plan the project and meet the conditions required by the EAC. Economic conditions may also play a role in the timing of a project.

The Act specifies that the holder of the certificate must have "substantially started the project". The Act does not define "substantially started" but defines "project" as follows. "Project means any:

- (a) Activity that has or may have adverse effects, or
- (b) Construction, operation, modification, dismantling or abandonment of a physical work".

The Act does not require that the project be operational nor does it require the project to be substantially "completed" or "constructed". There is also no specific formula to determine if a project is substantially started.

The practice of the EAO is to consider each project on a case by case basis in the context of the particular project, in this case, a ski resort. This case by case approach makes sense given the wide range of projects that are required to be reviewed under the Act.

The EAO User Guide provides the following questions as guidance:

- Has there been a significant investment of time, effort, and resources to physically develop one or more main project elements?
- Does the activity amount to a significant or important step to develop the overall project, or is the activity considered ancillary, secondary, or temporary?
- Would the proponent have undertaken the activity regardless of the project?

Although the Act does not define substantially started, the Court in TRTFN v.BC provided the following assistance on how it should be interpreted in the context of a mining project:

- The decision maker should focus less on the permits which have been granted and the money expended, and more on what has taken place physically at the site.
- Temporary structures at the site, if they will soon be removed, followed by remediation, are less important to consider than structures which will be in place for the duration of the project.
- To have been substantially started, the project needs to be started in its essentials in a real and tangible way.

Finally, to be considered, activity must occur after the Certificate was issued, in this case October 12, 2004 and before end of day October 12, 2014.

2. Application of General Considerations to this Project

As noted above, when determining whether a project has been substantially started the focus should be more on what has physically taken place on the site. For this reason, this report focuses first on the components of the project that GRL lists as having been constructed or started in their November 10, 2014 submission⁹ and the issues related to their construction.

This report also considers other activity, such as pre-construction activities and the obtaining of various permits related to the physical activity on site.

Further, the report considers other activity that has not to date resulted in the construction of any physical works and is not directly related to the physical activity that has taken place on site.

Finally, and while the Court in TRTFN v. BC clearly stated that "the decision maker should focus less on...the money expended...and more on what has taken place physically at the site", it did not expressly preclude consideration of financial information in substantially started determinations. The financial information from GRL submissions is provided to give a rough indication of scope of the construction and may assist in corroborating the significance of physical works identified in the photographs. For the purposes of this determination, EAO did not verify or seek verification of the amounts GRL indicates it expended unless an issue was raised.

3. Review of Physical Works Undertaken by GRL

GRL identified in its submissions, and the October 13, 2014 inspection by EAO confirmed, the following physical works undertaken at the project site¹⁰:

- The first floor slab and foundation preparations for the day lodge at the resort base;
- The first floor slab of the service building at the resort base;
- The foundation anchors for one tower of a quad chairlift (lift 1.1 of the Master Plan);
- A seasonal bridge to span Karnak Creek within the resort base area has been purchased;

⁹ TAB 2 – GLACIER RESORTS LTD. SUBMISSION NOVEMBER 7, 2014

¹⁰ GRL also reported the purchase of a platter lift. Because this was not installed it could not be physically verified and is not included in the list. It is however referenced in the report below.

- A temporary bridge at kilometre 15.8 of the Jumbo Forest Service Road was constructed and then removed once the permanent bridge was constructed;
- The permanent bridge at kilometre 15.8 of the Jumbo Forest Service Road has been constructed;
- A well to provide potable water to the resort has been drilled and tested;
- Clearing and grading of approximately 250 metres of construction access road within the resort base to allow access to the day lodge, service building and the lift base foundation locations from the Jumbo Forest Service Road; and,
- Improvements to site specific locations along approximately 4 km of the existing the Jumbo Forest Service Road, including brushing, installation of culverts and ditch maintenance.

Physical evidence of the works undertaken by GRL can be seen in the photographs GRL provided with their submission and in the report produced by EAO Compliance and Enforcement staff entitled Substantially Start Site Inspection, October 13, 2014¹¹.

a) Day Lodge, Service Building and Quad Chairlift Partial Construction

Photographs of the state of construction as of October 13, 2014 of these three structures are found at Figure 1 (day lodge); Figure 2 (service building) and Figure 3 (quad chairlift). These structures are clearly in the early stages of construction.

In their submission, GRL reported the following expenditures related entirely or in part to the day lodge; service building and the quad chairlift:

• Architectural and structural design of the key buildings for the opening phase, the day lodge and service building:	\$101,492.91
• Building permits, construction insurance, WCB:	\$21,117.47
• Ground surveys, including lift survey:	\$24,160.45
• Excavation for the day lodge, the service building and the lift base station:	\$48,737.59
• Base slab for day lodge and service building (a) forming materials, insulation and reinforcing steel (b) placement of forming and insulation, placement of steel reinforcing and placement of concrete foundations for day lodge, service building:	\$127,887.04
• Concrete costs:	\$96,243.72
• Concrete testing:	\$5,132.93
• Worker accommodation and travel:	\$19,763.02
Total	\$444,535.13

¹¹ TAB 5 – EAO SUBSTANTIALLY START SITE INSPECTION OCTOBER 13, 2014

As stated above, the above financial information is provided here and elsewhere only to give a rough indication of scope of the construction and may assist in corroborating the significance of physical works identified in the photographs.

Figure 2: First floor slab of the day lodge building at the resort base (From EAO Environmental Assessment Office – Substantially Start Site Inspection, October 13, 2014)

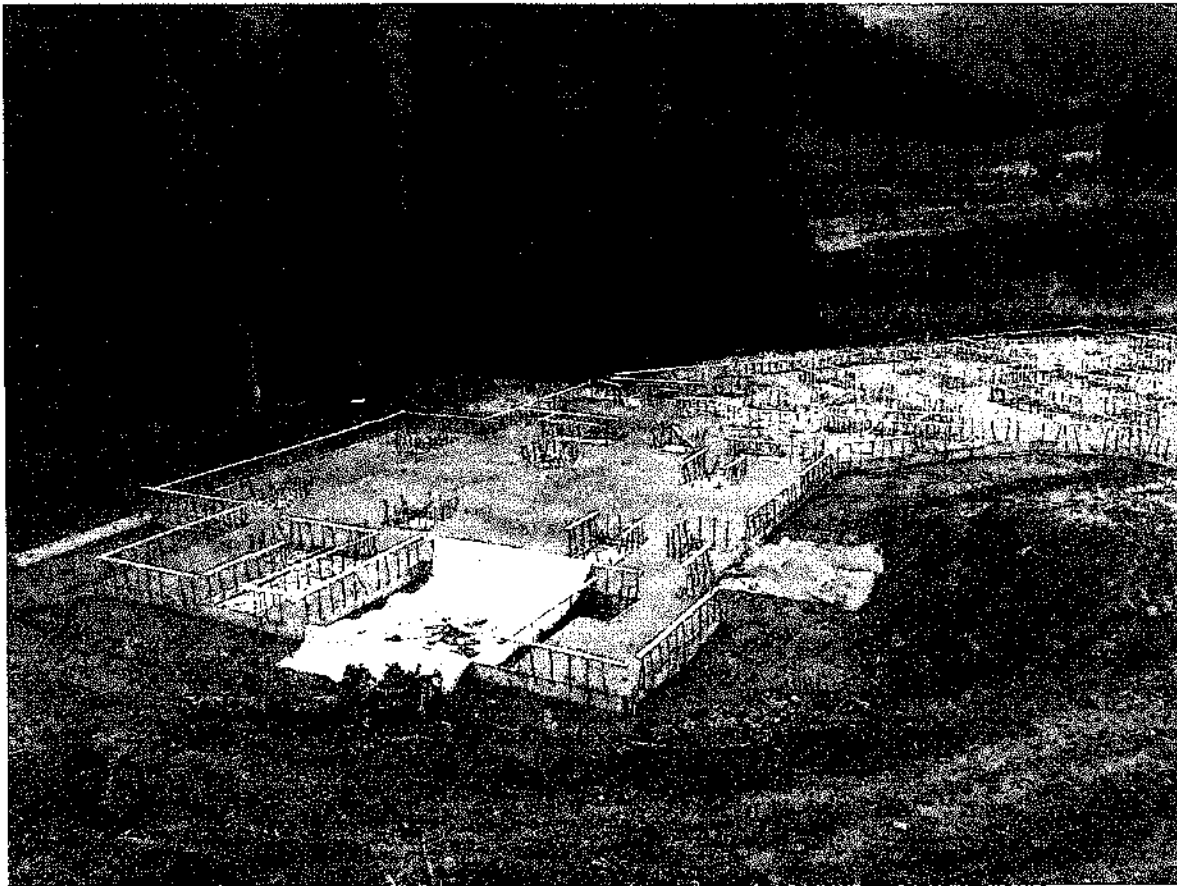


Figure 3: First floor slab of the service building at the resort base (From EAO Environmental Assessment Office – Substantially Start Site Inspection, October 13, 2014)

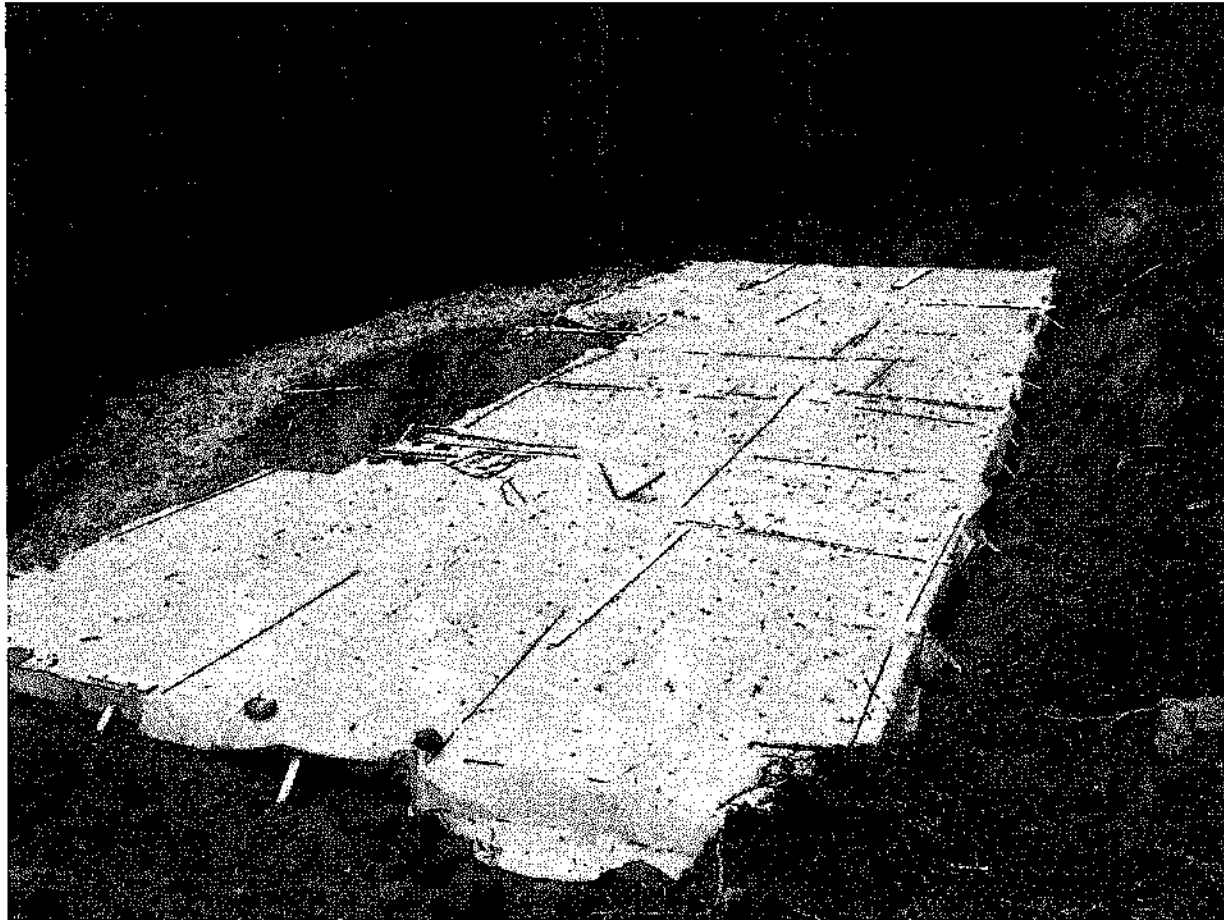
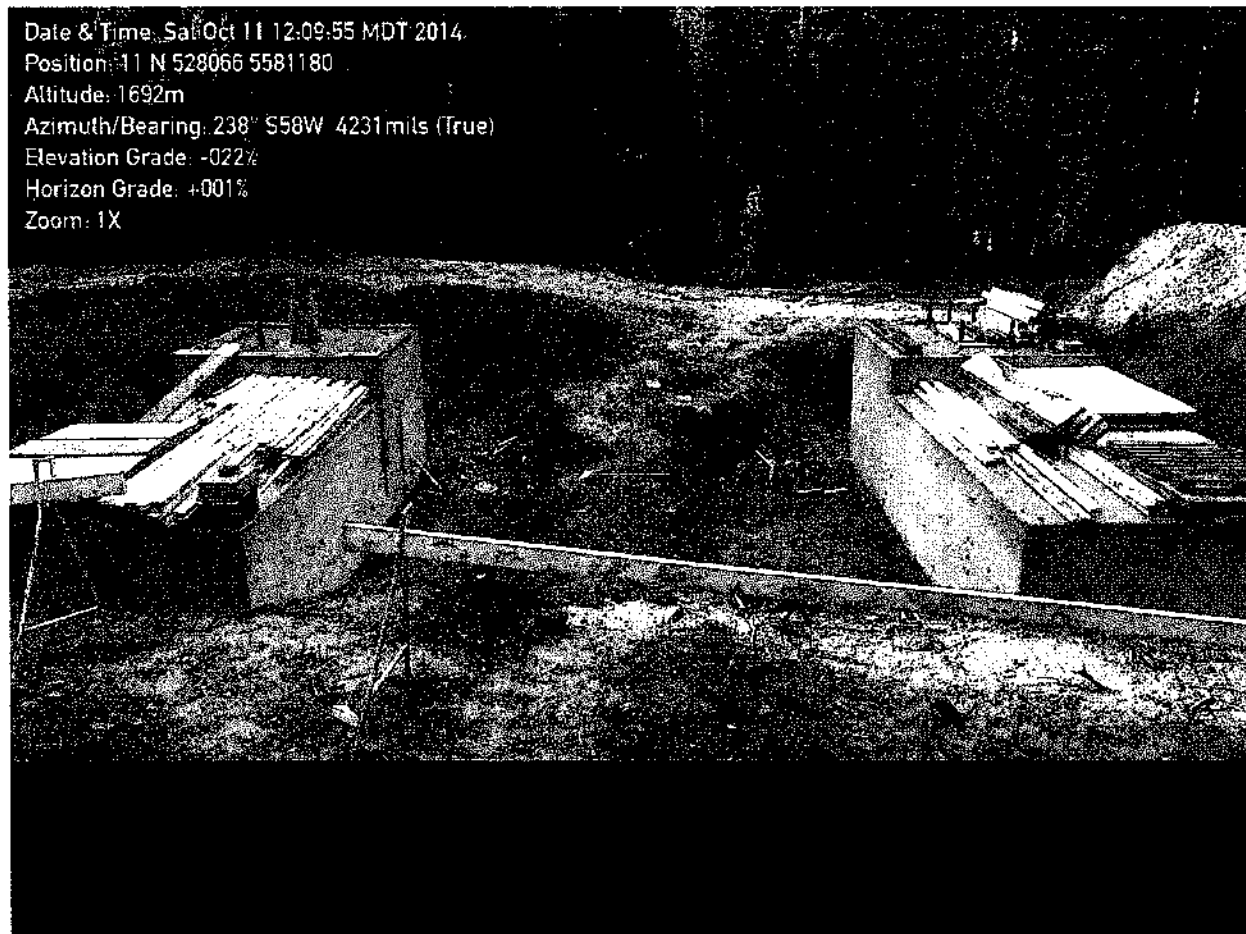


Figure 4: Foundation anchors for a quad chairlift (lift 1.1 of the Master Plan; From EAO Environmental Assessment Office – Substantially Start Site Inspection, October 13, 2014).



No issues have been raised with respect to construction of the foundation anchors for a quad chairlift for the lift base. However, four issues have been raised with respect to the construction of the day lodge and the service building:

- quality of the construction of the day lodge and the service building;
- construction of the day lodge and service building is outside of the tenure;
- construction of the day lodge and the service building is not in compliance with Condition 36 of the EAC; and,
- project development is also not in compliance with other conditions of the EAC.

Quality of Construction

The KNC challenged the quality of the construction. Based on the expert report of architect, Cal Meiklejohn, the KNC argued that the day lodge and service building foundations are of a questionable design and have been built without an on-site pre-construction geotechnical report.

In response GRL, while conceding that the day lodge and service building foundations are not fully complete, provided a report from Golder and Associates Ltd clarifying that the small diameter drilled micropile foundation technique was employed on Golder's recommendation based on geotechnical analysis of soils in the vicinity. GRL also provided a letter from Thomas Leung Structural Engineering attesting to the design of the foundations. As well, GRL also provided copies of the concrete tests confirming strength of foundation concrete.

Given the above engineering evidence, EAO considers that the works completed appear to be sound and so construction quality itself need not be given significant further consideration in this determination.

Tenure

KNC also questioned whether the service and the day lodge construction are within their tenure boundaries. GRL's view is that the structures are within the tenure boundary. GRL's view is supported by information received from Mountain Resort Branch who advised that while they have not surveyed the current day lodge location, they believe the facility to be within its tenure boundaries. They further advise that GRL was issued an interim tenure in anticipation that final tenure boundaries may need to be adjusted once facilities are installed and prior to longer term tenure issuance.

Again, in light of this information, EAO is of the view that the question of the improvements being outside of their tenure boundaries can largely be dismissed relative to this particular substantially started determination.

Non-Compliance with Condition 36

Condition 36 of GRL's environmental assessment certificate requires that:

"The proponent will ensure that the proposed residential and commercial structures will be located completely outside the avalanche hazard area".

On April 24, 2015 EAO Compliance and Enforcement concluded its investigation and determined that the day lodge and the service building were not in compliance with Condition 36.

GRL was ordered to cease construction at both the day lodge and the service building but EAO Compliance and Enforcement did not proceed with further enforcement at this time because there is no immediate risk to the environment or human safety and there are avenues under the Act that GRL may pursue.

Accordingly, as of October 13, 2014 the construction of the service building and day lodge were out of compliance with the Certificate.

The determinations of non-compliance are based largely on the 'Snow Avalanche Risk Zoning for a Day Lodge and Service Building' report by Alan Jones, P.Eng of Dynamic Avalanche Consulting (Alan Jones Report) provided by GRL in response to EAO's request of December 11, 2014. The Alan Jones Report concluded that:

Service Building Site:

- "The Service Building is mostly located within the Red Zone (high risk) for which the CAA (2002) guidelines recommend construction of new buildings not normally permitted. This recommendation is intended to apply to occupied structures, either temporarily or permanently occupied."
- "Based on this guideline, if a structure is to be constructed at this location, it is recommended that it not be used or routinely accessed during the winter season." (see Section 4.4 of the Alan Jones Report for duration of season)"
- "Seasonal (non-winter) usage of a building could be considered (e.g. seasonal storage) if permitted, which would meet the requirements of a non-occupied structure."
- "The return period for potentially destructive avalanches at this location is estimated to be in the range of 30-100 years, with an expected impact pressure range of approximately 10-40 kPa."
- "These impact pressures are sufficient to destroy a wood frame structure (Mears, 1992) thus structural reinforcement is recommended for a structure at this location. Other mitigation measures that could be considered include no windows or doors on the western edge of the building, and no prominent roof eaves that can be damaged by avalanche flow."

Day Lodge Site:

- "The Day Lodge is located mostly within the Blue Zone (moderate risk), for which the CAA (2002) guidelines recommend: Construction of new buildings, such as industrial plants and temporarily occupied structures, possibly permitted with specified conditions. Conditions may include structures reinforced for avalanche forces, construction of avalanche defences and requirement for evacuation plans or a combination of these."
- "Based on the fact that dense flowing avalanches are not expected to affect this location, and only relatively low impact pressure powder avalanche effects need to be considered, use of this Day Lodge is recommended subject to the following conditions:
 - **Structural Reinforcement:** The building should be designed to withstand powder avalanche impact pressures of approximately 2 kPa (unfactored). This could be achieved by structural reinforcement where necessary (e.g. reinforced north and northwest facing window panes) or other architectural means (e.g. orientation of design elements, shutters).

- **Explosive Control:** Frequent explosive avalanche control should be conducted within the Pink Panther path to reduce avalanche hazard through the winter. This measure will also be required to protect ski terrain upslope of the Day Lodge. A highly reliable, all weather control system should be considered for starting zones in the Pink Panther path. Fixed exploder systems options should be evaluated (e.g. Gazex, O'BelX, Wyssen Tower, Avalanche Guard), which could be supplemented by hand charging and helicopter control, as needed.
- **Evacuation Plan:** An evacuation plan should be developed for this building to reduce any potential residual risk to workers and the public both within and outside of the building. This could include short-term closures during periods of high avalanche hazard as well as complete evacuation of personnel and public from the day lodge and surrounding runout zone during explosive avalanche control.
- **Implementation of an avalanche safety plan,** including an explosive control plan and an evacuation plan will require trained, experienced and licensed personnel (as per Schaerer, 2014)."

GRL has advised EAO that GRL is "committed to implementing all of the recommendations in the Dynamic Avalanche Consulting report with respect to the day lodge and service building. Mitigation efforts for the day lodge will include structural reinforcement as necessary, a comprehensive avalanche control and safety plan (with frequent avalanche control via explosives and the implementation of reliable, all-weather systems such as Gazex), and an evacuation plan for both employees and the general public. Likewise, the service building will be converted to a structurally reinforced storage building that will not be accessed during winter".

GRL has since indicated it intends to seek an amendment to its certificate to allow the structures to remain in their locations subject to the recommended mitigation measures above. EAO has not assessed whether the proposed mitigation would be appropriate; this would be undertaken during any amendment process.

The central question is what, if any, impact does the fact that the service building and day lodge are out of compliance have on the substantially started determination.

There are three broad options for the decision maker:

- Eliminate the structure from consideration entirely;
- Address it as a question of the weight given to the structure in the overall determination of whether the project is substantially started; or
- Determine it is a question of compliance only and has no impact on the substantially started determination.

GRL has suggested that it has no impact on the substantially started decision but suggests, in the alternative, that the fact the structures are non-compliant should effect only the weight assessed to the structure.

KNC takes the opposite view and suggests that neither the day lodge nor the service building should be considered. Alternatively, they take the view the decision maker should give very little weight to the two structures.

EAO recommends that the decision-maker consider the non-compliant status of the day lodge and service building as a matter of weight. While not all instances of non-compliance would necessarily impact a substantially started determination, where the non-compliance has a direct linkage to the physical works constructed, as is the case here, it is a relevant factor. To be clear, in assessing weight, a decision maker may choose to apply little to no weight to the impacted structure.

In determining the weight to apply to these structures, the decision maker may wish to consider the following factors:

- The seriousness of the non-compliance and whether the non-compliance can be addressed;
- Whether the company intends to address the non-compliance;
- The impact of the non-compliance on the intended use of the structure; and
- The overall circumstances of the non-compliance.

GRL takes the position that there is no reason to mix matters of compliance with the larger substantially started determination. They argue that it would be "ridiculous to have a project that has been in process since 1990, has passed five major review processes...hinge on whether or not a day lodge falls within a red, blue or white avalanche zone, especially since ski resort day lodges in avalanche zone are not uncommon". It notes that other ski operations in North America are operated in avalanche hazard areas in similar circumstance. For example, Squaw Valley Ski Resort, California operates with a number of facilities in Blue and Red hazard areas and uses mitigation measures to manage avalanche risk.

KNC takes the position that the works undertaken should be disregarded entirely or at best afforded very little weight given the considerable and significant above referenced deficiencies. They maintain that by all accounts the work was done hurriedly and without adequate attention to detail. It also notes that allowing a company to rely on non-compliant activity sends the wrong message to companies that they can achieve substantial start without regard to the conditions in the certificate.

Non-Compliance with Other Conditions

In October 2014, EAO conducted an administrative inspection that had assessed 35 of the pre-construction conditions and concluded that GRL was out of compliance with 3 of those 35 conditions. Those conditions were:

- Condition 57: To conduct and submit to the Minister of Water, Land and Air Protection Regional Manager (Environmental Protection) additional baseline analyses before any site development and/construction activity/well drilling program is undertaken, including;

- Additional sampling of Jumbo Creek to characterize sediment production during spring freshet (April 1 to June 30);
- Additional sampling in Jumbo Creek to confirm the low level of mineralization in the basin, as suggested by water chemistry data; and
- An ion analysis component to the baseline water quality monitoring of Jumbo and Toby Creeks.
- Condition 72: (*Commit*) To a biological, physical habitat and continuous water volume and quality sampling program to be implemented pre- and post-development.
- Condition 146: To monitor, at its own cost, unsupervised public recreational use (including use by resort construction and operations employees, resort visitors and resort residents) and other use of roads which link to Highway #95 at Invermere. This monitoring will be undertaken before construction, during initial construction (i.e. prior to commercial scale resort operations), and during commercial-scale operations. Monitoring results will be reported to the Ministry of Water, Land and Air Protection Regional Manager (Environmental Stewardship).

Further, in October 2014, EAO conducted two field-based compliance inspection of the Project, and concluded that GRL was out of compliance with the following additional conditions:

- Condition 46: To implement, at its own cost, all mitigation measures and provisions of the related Environmental Management Plan components as proposed in the Project Report.
- Condition 95: To have bear aware programs that are aggressive and mandatory.
- Condition: 122: To implement all mitigation measures in the Grizzly Bear Management Plan.

KNC have expressed the view that because GRL did not complete some of the pre-construction commitments in the Certificate before engaging in this construction, the works are illegitimate and should be discounted. In their November 21, 2014 submission, GRL disputed this arguing that it is "on track for compliance with all 195 commitments of its environmental certificate, with the exception of 146" which deals with monitoring recreation use of the road.

Unlike Condition 36, the non-compliance with the other conditions mentioned do not directly relate to the physical structures constructed. In addition, it must be recognized that it is not unusual for a project to need to address issues of non-compliance.

Accordingly, the other non-compliances noted above have less relevance should than Condition 36 that relates directly to the construction of the structures.

Issues for Consideration by the Decision Maker

- ***What weight should be given to the partial construction of the quad chair-lift?***
- ***Given the partial construction of the service building was non-compliant, what weight should it be given in the substantially started determination?***
- ***Given the partial construction of the day lodge was non-compliant, what weight should it be given in the substantially started determination?***

(b) Seasonal Bridge at Karnak Creek

A temporary seasonal bridge to span Karnak Creek within the resort base area was purchased and installed (see Figure 5). It has been removed for the winter but GRL intends to re-install the bridge for next year's use.

In their submission, GRL report the following expenditures related entirely to this item:

- | | |
|--|--------------------|
| • <i>Engineering and installation of temporary bridge at Karnak Creek in the resort site, and acquisition and repositioning of the bridge for next year's use:</i> | \$32,258.63 |
|--|--------------------|

KNC does not dispute that the seasonal bridge at Karnak Creek was constructed.

(c) Temporary and Permanent Bridges at kilometre 15.8 of the Jumbo Forests Service Road

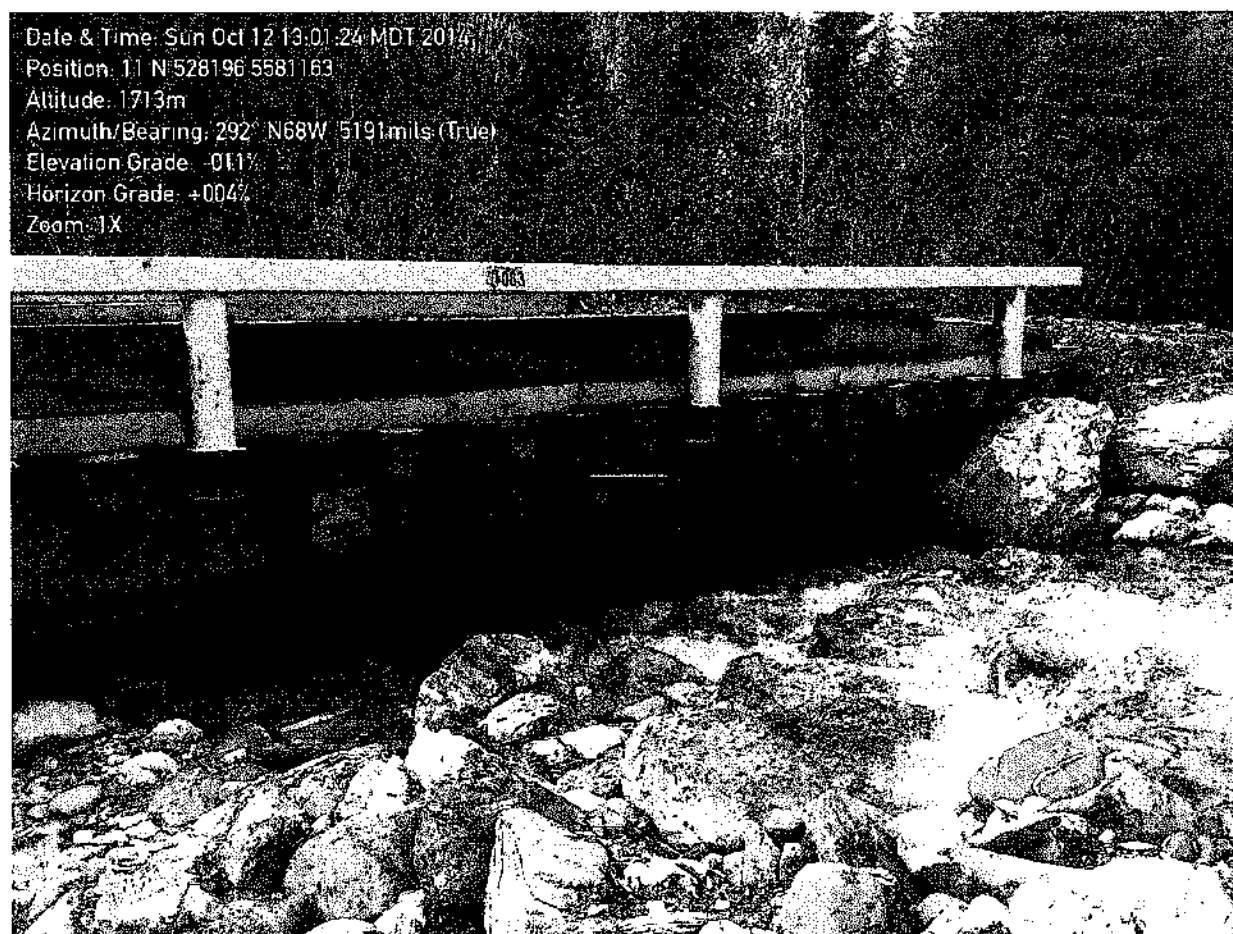
GRL constructed both a temporary bridge (See Figure 6) and a permanent bridge (See Figure 7) at kilometre 15.8 of the Jumbo Forest Service Road. Once the permanent bridge was in place, GRL removed the temporary bridge. In their submission, GRL report the following expenditures related entirely or in part to the temporary and permanent bridge.

- | | |
|--|---------------------|
| • <i>Road studies and Engineering for Access Route:</i> | \$31,760.71 |
| • <i>Preparation of ground access, including road access permits, tree cutting permits, and all incidental permits and procedures to gain construction access to the site:</i> | \$61,302.75 |
| • <i>Environmental monitoring reporting and geotechnical reporting in compliance with the EA certificate and to monitor construction, and coordination of bridge and road engineering and site activities:</i> | \$112,471.58 |
| • <i>Engineering, installation and removal of two temporary</i> | \$40,754.18 |

bridges to gain access for the installation of the permanent bridge at Project entry:

• <i>Engineering and installation of permanent bridge at Project entry</i>	<i>\$56,590.00</i>
<i>Total</i>	<i>\$302,879.20</i>

Figure 5: Seasonal bridge spanning Karnak Creek (From EAO Environmental Assessment Office – Substantially Start Site Inspection, October 13)



KNC do not dispute that the bridges at kilometre 15.8 km were constructed, but argue that the cost of the permanent bridge was largely underwritten by the Municipality. EAO has confirmed with the Municipality that the total cost of the 15.8 km bridge was \$199,149 of which the Municipality paid \$142,559 and GRL paid \$56,590.

EAO also understands that the Jumbo Forest Service Road including the one-lane bridge at 15.8 km is intended only for access during construction and is not intended to be the final and permanent access solution for the resort. Permanent access to the resort is ultimately to be by way of a new access road on the north side of Jumbo Creek. While the alignment of this new road has been approved, construction has not yet begun.

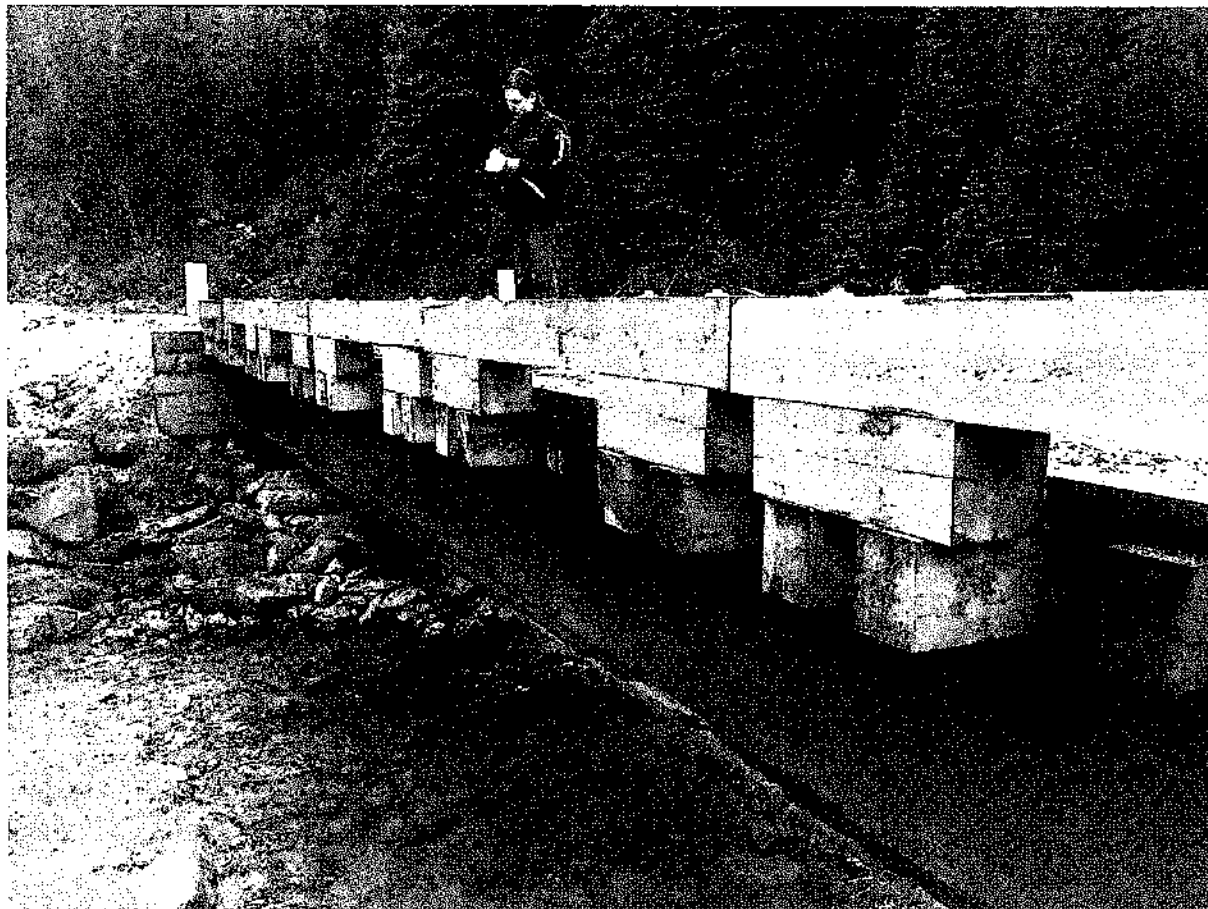
Issues for Consideration by the Decision Maker

- ***How much weight should GRL's installation of a temporary and later permanent bridge on the Jumbo Service Road be afforded in the substantial start determination, taking into account that they are not intended to be the final and permanent access road to the resort?***

Figure 6: Temporary bridge (behind and below permanent bridge) installation at 15.8 kilometer (From EAO Environmental Assessment Office – Substantially Start Site Inspection, October 2014)



Figure 7: Permanent bridge installation at 15.8 kilometer of Jumbo Forest Service Road (From EAO Environmental Assessment Office – Substantially Start Site Inspection, October 13, 2014)



d) Construction access road within the resort base and improvements to the Jumbo Forest Service Road.

GRL constructed approximately 250 metres of new roadway within the resort base to allow access to the day lodge and service building (see Figure 9). Improvements to the Jumbo Forest Service Road were also undertaken especially with regards to sediment and erosion control (see Figure 10).

In their submission, GRL report that \$33,517.79 was expended on these road improvements.

KNC argues that GRL exaggerates the significance of the road improvements at the resort base claiming that roads have only been cleared and grubbed and that no subgrade improvements have been made. Further, they claim the roads are not in the locations indicated on drawings for long-term operational access and do not provide vehicular access to the day lodge, service building and lift locations.

While photographs provided by GRL show the roads at the resort base in a primitive condition, they did enable construction vehicles to access the day lodge, service building and lift locations.

KNC acknowledge that the GRL road improvements have made it possible for large construction vehicles to access the site. However, the KNC maintain that the road is now rougher and less accessible for 2 wheel drive vehicles than it was formerly. GRL counter that before their recent re-installation of the bridge at kilometre 15.8, the site was inaccessible by 2 wheel drive vehicles.

Issues for Consideration by the Decision Maker

- **How much weight should the construction of new roads at the resort base be granted given their current state of development?**
- **How much weight should the improvement to the existing roads be afforded?**

Figure 9: Showing new roads to allow access to the day lodge and service building
(From EAO Environmental Assessment Office – Substantially Start Site Inspection,
October 13, 2014)



Figure 10: New culvert on the Jumbo Forest Service Road, example of GRL road improvements (From EAO Environmental Assessment Office – Substantially Start Site Inspection, October 13, 2014)



e) Ground Water Well

GRL has indicated that a well to provide potable water to the resort for Phase 1 has been drilled and tested (see Figure 8). In their submission, GRL reports expenditures of \$59,146.69 related to well drilling and testing.

KNC acknowledges that GRL has completed the well, but note that GRL have not proven the well can provide potable water. They make this argument based on a water quality report that suggests the water exceeds drinking water guidelines for turbidity, total lead, total and dissolved iron, total and dissolved manganese¹².

However, a full reading of the water test reveals the conclusion "...with appropriate treatment in place....the well would be acceptable for use as a potable water source"

Figure 8: Illustrating the new well (From EAO Environmental Assessment Office – Substantially Start Site Inspection, October 13, 2014.



¹² TAB 2A_5 – Appendix 5 Well Testing Report

(f) A handle-tow lift

GRL reports that a platter lift was purchased for \$368,934.00. The lift is to be located at the Jumbo site but is not yet installed¹³.

Issues for Consideration by the Decision Maker

- ***How much weight should GRL's purchase of a platter lift be afforded in the substantial start determination, given that it has not been installed?***

4. Permits, Plans and Studies

a. Building Plans and Design Work

GRL undertook the development of architectural and structural design work for the Jumbo Creek day lodge and service building locations and the Farnham Glacier lodge. GRL report expenditures related to this work of \$368,934. Note GRL reports these costs over and above the costs of \$720,000 that they reported (see below) as related to their preparation for the 2007 Master Plan for the Project.

b. Environmental Plans and Studies

Under the terms of the Certificate, GRL was required to generate a number of plans and undertake a number of studies before beginning construction. The pre-construction plans and studies completed by GRL after issuance of the Certificate include:

- Construction Environmental Management Plan (EMP; for the 2014 construction season)
- Water quality and monitoring data
- Consultation with existing guide outfitters to minimize impacts
- Consultation with trap line tenure holders
- Work with R.K. Heliski to address potential project impacts
- Redesigned new access road to minimize exposure to avalanches and facilitate avalanche control program

c. Permits Related to Works Constructed

Before GRL could undertake the works on the site they were required to and ultimately obtained the agreements, licences and permits summarized in Table 1 below.

¹³ Because the handle lift tow was not installed it could not be physically verified.

Table 1: Summary of Construction Prerequisites undertaken by GRL	
Action	Timing
• Master Development Agreement	March 2012
• Obtained Road Use Permit for Jumbo Glacier Forest Road	May 2012
• Obtained zoning for Jumbo Glacier site infrastructure from Municipality	August 2014
• Obtained building permits for construction of works on Jumbo Glacier site from Municipality	August 2014
• Obtained <i>Water Act</i> authorization for replacement of bridge at 15.8 km point of road.	August 2014
• <i>Land Act</i> authorization for Jumbo area improvements	August 2014
• <i>Forest Act</i> authorization for timber removal for construction of improvements	August 2014
• Permit from BC Safety Authority for Ski Lifts	September 2014

d. Other Permitting Activity Undertaken by GRL

A summary of other permitting activity, (not related to the above referenced construction activity or any other physical works) is summarized in Table 2 below.

Table 2: Summary of Other Permitting Activity undertaken by GRL	
Action	Timing
• Acquired <i>Land Act</i> tenure for Farnham Glacier	February 2008
• Negotiated sublet of Farnham Glacier tenure to Calgary Olympic Development	February 2008

Association (CODA, now WinSport Canada) and did related upgrades to Farnham Glacier Forest Service Road.	
• Obtained zoning for Farnham Glacier site improvements from Municipality	January 2013
• Commissioned drawings for Farnham Lodge and applied for building permit	June 2013
• Acquired replacement tenure for Farnham Glacier	September 2013
• Did detailed engineering of forest service road on north side of Jumbo Creek to assess feasibility	August 2013 – April 2014

GRL submits that the completion of the above architectural design work, studies and permits represent a significant amount of time and resources and should be given considerable weight in the substantially started determination¹⁴. For example, GRL reports expenditures of approximately \$720,000.00 towards the preparation of the Master Plan alone.

KNC does not agree and suggests that the determination should be made on physical evidence alone and that the architectural design work, studies and permits should have no bearing on the substantially started determination¹⁵.

EAO considers that while the Court in TRTFN v. BC clearly suggested greater emphasis be placed on physical works, it did not preclude consideration of permits, studies and architectural drawings from consideration. These activities may be relevant when they represent necessary preconditions to physical works actually completed. EAO considers that if any weight is to be afforded these activities, greater weight should be given to those that have led to physical works actually being completed, and correspondingly less weight should be afforded those that did not result in physical works. The ultimate weight given these activities, if any, rests with the decision maker.

¹⁴ TAB 2 – GLACIER RESORTS LTD. SUBMISSION NOVEMBER 7, 2014 Page 26-27

¹⁵ TAB 3 – KTUNAXA NATION COUNCIL SUBMISSION NOVEMBER 10, 2014, Pages 2-3

Issues for Consideration by the Decision Maker

- ***How much weight, if any, should be afforded GRL's completion of the above mentioned architectural drawings, studies and permits that led directly to physical works on the site***
- ***How much weight, if any, should be afforded GRL's completion of the above mentioned architectural drawings, studies and permits that did not lead to the construction of any physical works.***

E. CONCLUSION

The EAO User Guide directs that when making a substantially started determination, the decision maker consider the following questions:

- Has GRL made a significant investment of time, effort, and resources to physically develop one or more main Project elements?
- Does the activity amount to a significant or important step to develop the overall Project, or is the activity considered ancillary, secondary, or temporary?
- Would GRL have undertaken the activity regardless of the Project?¹⁶

In addressing the overall question of whether the project has been substantially started, the selection of an appropriate "benchmark" or "yardstick" by which to measure the activities undertaken could have considerable impact on the determination. For example, if a substantial start of this Project is to be measured against the full Phase 3 build-out (20-23 lifts, 6,250 beds of overnight accommodation and 104 residential lots) a considerable amount of development would presumably be required to meet a substantially started threshold. However, if the appropriate measure of substantial start is the commencement of operations (i.e. a modest ski and summer sightseeing resort with day use only and no overnight accommodation), a much lower standard would arguably need to be met.

GRL and KNC have both provided their thoughts as to what the appropriate benchmark or yardstick ought to be. GRL have argued that the appropriate measure should be the commencement of operations and considers this threshold to include a day lodge to accommodate day visitors, a service building, a quad chairlift (lift 1.1) and a platter lift.

To support this suggestion they point out that many ski areas in the Province started out modestly in this manner. They cite as examples:

¹⁶ Given the specifics of this determination, in particular the Project's remote location and apparently GRL's only corporate interest in the area, this question would appear to be not relevant in the current context.

- Whistler Blackcomb (1965), now the largest ski resort in BC, opened with a four-person gondola, a double chairlift, two T-bars, a day lodge and mountain-top restaurant.
- Revelstoke Mountain Resort (2008) which was an expansion of an existing ski hill and opened with the construction of a day lodge, a single gondola and a quad chairlift.
- Kicking Horse Mountain Resort (2000) opened with a single gondola, a quad chairlift, a day lodge and mountaintop restaurant.

It should be noted that these examples may not be directly comparable since none of these projects required an environmental assessment. This project is unique in that it is a "greenfield" development i.e. built directly on undeveloped land rather than from an already existing ski facility.

GRL submits that functionally all the components required for a project opening are now under construction and the designs, studies and estimates are in place for the completion of the opening phase of the project.

KNC, on the other hand, suggests that the substantial start determination would be most appropriately measured against full Phase 3 build-out¹⁷. They point out that the Certificate was issued in relation to the entire Project. Further, they note that the consultations the government has undertaken with them on the Project always referenced the Project in its entirety. Finally, the KNC suggests that declaring a Certificate holder to have substantially started a large project after having only undertaken a small fraction of the development would be irresponsible because, once a project is deemed to have been substantially started, the Certificate remains in effect for the life of the project. This would effectively allow a Certificate Holder to hold a site in perpetuity while having done only a minimum of development.

KNC suggests that in the alternative (to using Phase 3 as the benchmark) the next best measure against which to assess a substantial start, is Phase 1¹⁸. They cite the report of Architect, Cal Meiklejohn that concludes that the physical works thus far constructed represent only approximately 0.5% of the total value of Phase 1 as well as the report's conclusions that "in our opinion the project is not 'substantially started' at this time". For reference, the KNC point to two jurisdictions in the United States that define substantial start as completion of 30% and 50% of proposed improvements.

Finally KNC submit that even if the benchmark is less than Phase 1, which they define as "the minimum necessary components and functions to operate a minimal ski and summer sightseeing resort with day use only", the project still does not meet the requirements to be substantially started.

¹⁷ TAB 3 – KTUNAXA NATION COUNCIL SUBMISSION NOVEMBER 10, 2014, PAGE 10

¹⁸ TAB 3- KTUNAXA NATION COUNCIL SUBMISSION NOVEMBER 10, 2014, PAGE 13

Identifying an end point, such as the start of operations or build out to Phase 1 for the project may assist in determining whether a project is substantially started; however, it is likely better approached as but one factor to consider rather than being conclusive of the question. This is especially the case in projects like a ski resort which are phased and one phase must be completed before the next phase may begin.

GRL also suggested that there are mitigating factors that should be considered in determining whether the project has been substantially started. Specifically, GRL argues that while the Certificate has technically been in place for 10 years, they have effectively had only two short field seasons to begin construction of the project. They argue that because the MDA was not executed by Mountain Resorts Branch until March 2012, and the zoning that GRL required could not be obtained before the Municipality was created in November 2012, they were prevented from beginning construction before the summer of 2013. GRL's view is supported by the Municipality. This view is also supported by the Shuswap Indian Band which in their November 10, 2014 submission, state that "Despite the hindrances that they have worked through including: protests, roadblocks, and the removal of bridges from the site access FSR, we are satisfied that as of October 12, 2014 the project has achieved a substantial construction start in accordance with the EA certificate conditions".

KNC acknowledge that GRL has had only three seasons to start construction of the Project, a factor that becomes significant given the construction season at the resort base is typically only four to five months long given the resort's high elevation (1700 metres).

Finally, GRL argues that the above taken together, and representing a claimed total investment of \$2,350,734.73, constitute a significant start towards commencement of operations of the Project, particularly when consideration is made of the delays that have occurred in the issuance of MDA and other approvals. They indicate that, in their view, the project remains on track for a December 2016 opening.

KNC holds a contrary view submitting that the Project is at best "barely started" and cannot be considered substantially started in any reasonable sense of the phrase. They argue that the Project must be considered in its entirety, and that it would be unlawful to make the determination based on a subset of the Project's components, that delays that have occurred in the Project development and financial expenditure should have little relevance the determination.

Final Issues for Decision Maker's Consideration

- ***Considering all of the above and submissions provided, does the activity undertaken by GRL, taken as a whole and in the context of this Project, giving greater emphasis to the physical works, meet the requirement, in the reasonable opinion of the decision maker, that the Project was substantially started by October 12, 2014?***

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Thursday, April 9, 2015 3:58 PM
To: Caul, Doug D ABR:EX
Cc: Lewthwaite, Jennifer EAO:EX
Subject: Jumbo: Condition 36 Draft Letter
Attachments: 282185,, DISCUSSION Letter to OOberti re Condition 36_Apr2015.docx

Doug,

We are still waiting on confirmation for a briefing from MO. Attached is the draft letter Autumn is working on confirming our conclusion that the buildings are not in compliance and our intention to issue an order. We are waiting on Transportation's formal response still but once we have that we would look to get this out quickly provided appropriate heads up were given. This letter would not be public. JGR would have 3 days to respond.

We would position ourselves to then issue an order fairly quickly after that. Substantially started process then restarts with draft report sent out to parties for comment. I am talking to Greg about a communications plan.

Paul



File: 30250-25/JUMBO-21

Ref: 282185

EARLY DRAFT FOR DISCUSSION

April 9, 2015

SENT VIA EMAIL

Oberto Oberti
Glacier Resorts Ltd.
660 – 1188 West Georgia Street
Vancouver BC V6E 4A2
ooberti@obertiarchitecture.com

Dear Mr Oberti:

As you know, Environmental Assessment Office (EAO) Compliance & Enforcement (C&E) has been investigating whether the day lodge and service building locations are in compliance with condition 36 of the Environmental Assessment (EA) Certificate for the Jumbo Glacier Resort Project. EAO's investigation is now complete. I am writing to provide Glacier Resorts Ltd (GRL) with an opportunity to respond to the findings and the evidence on which EAO based the compliance determination.

On December 11, 2014, EAO C&E advised GRL that an engineering avalanche risk evaluation, including a zoning plan, is required to verify compliance with condition 36. EAO stated that the evaluation must be consistent with the Canadian Avalanche Association (CAA) Guidelines and be completed by a professional engineer in good standing with the Association of Professional Engineers and Geoscientists British Columbia in addition to professional member status with the CAA.

On March 21, 2015, GRL submitted to EAO C&E an engineering avalanche risk evaluation prepared by Alan Jones, P.Eng (Alan Jones Report). EAO C&E discussed the report with Alan Jones to request additional information about the methodology, conclusions and recommendations of the Report. As part of EAO's review, EAO sought input from the Ministry of Transportation (MoTI) given their responsibilities and expertise relating to avalanches. EAO, based on advice from MoTI, is satisfied that the Alan Jones Report appropriately addresses the risk assessment criteria outlined in EAO's December 11, 2014 letter.

...2

Comment [AC1]: NOTE: this may need to be updated based on initial feedback from MOTI

Environmental
Assessment
Office

Mailing Address:
PO Box 9426 Stn. Prov Govt
Victoria BC V8W 9V1

Location:
1st & 2nd Fl – 836 Yates Street
Victoria BC V8W 1L8

Preliminary Compliance Determination and Rationale:

Condition 36 requires that "... proposed residential and commercial structures will be located completely outside the avalanche hazard area." Interpretation of what is an 'avalanche hazard area' is required to determine compliance with condition 36. EAO C&E determined it is prudent to align the current CAA Guidelines (2002) with the intent of the EA.

An 'avalanche hazard area' is not classified or defined in the CAA Guidelines (2002). A review of the EA material identified:

- An avalanche hazard area as being an area where there is potential for an avalanche with a return period up to 200-300 years; and
- Proposed structures in this hazard area must be either "eliminated"¹ or moved to a new site that is "located outside the hazard area"².

The current industry standard CAA Guidelines (2002) developed a three colour zoning system for proposed occupied structures: white zone (low risk), blue zone (moderate risk) and red zone (high risk). The white zone is "an area with an estimated avalanche return periods of greater than 300 years"³.

Therefore, EAO C&E's view is that structures in the white zone could be compliant as the defined by the CAA "white zone" as it aligns closely with the EA's avalanche hazard classification of being greater than a 200-300 avalanche return period. EAO C&E interprets condition 36 to mean that commercial and residential structures must not be located in an area classified to have an avalanche return period up to 300 years (i.e. the red zone (less than 30 years) or blue zone (less than 300 years)). For clarity, GRL may wish to consider applying for an amendment to the EA Certificate to bring the terminology of the condition in line with the CAA Guidelines.

The Alan Jones Report states the following about the Day Lodge and Service Building locations:

Service Building Site:

- "The Service Building is mostly located within the Red Zone (high risk) for which the CAA (2002) guidelines recommend *construction of new buildings not normally permitted*. This recommendation is intended to apply to occupied structures, either temporarily or permanently occupied."
- "Based on this guideline, if a structure is to be constructed at this location, it is recommended that it not be used or routinely accessed during the winter season." (see Section 4.4 of the Alan Jones Report for duration of season)

...3

¹ MoTH avalanche fax – Mar 10_98

² MoTH avalanche fax – Mar 10_98

³ CAA 2002 definition

- "Seasonal (non-winter) usage of a building could be considered (e.g. seasonal storage) if permitted, which would meet the requirements of a non-occupied structure."
- "The return period for potentially destructive avalanches at this location is estimated to be in the range of 30-100 years, with an expected impact pressure range of approximately 10-40 kPa."
- "These impact pressures are sufficient to destroy a wood frame structure (Mears, 1992) thus structural reinforcement is recommended for a structure at this location. Other mitigation measures that could be considered include no windows or doors on the western edge of the building, and no prominent roof eaves that can be damaged by avalanche flow."

Day Lodge Site:

- "The Day Lodge is located mostly within the Blue Zone (moderate risk), for which the CAA (2002) guidelines recommend: *Construction of new buildings, such as industrial plants and temporarily occupied structures, possibly permitted with specified conditions. Conditions may include structures reinforced for avalanche forces, construction of avalanche defences and requirement for evacuation plans or a combination of these.*"
- "[Assuming the Day Lodge would be used only during limited (working) hours during the day, it may be considered a temporarily occupied structure.]"
- "Based on the fact that dense flowing avalanches are not expected to affect this location, and only relatively low impact pressure powder avalanche effects need to be considered, use of this Day Lodge is recommended subject to the following conditions:
 1. Structural Reinforcement: The building should be designed to withstand powder avalanche impact pressures of approximately 2 kPa (unfactored). This could be achieved by structural reinforcement where necessary (e.g. reinforced north and northwest facing window panes) or other architectural means (e.g. orientation of design elements, shutters).
 2. Explosive Control: Frequent explosive avalanche control should be conducted within the Pink Panther path to reduce avalanche hazard through the winter. This measure will also be required to protect ski terrain upslope of the Day Lodge. A highly reliable, all weather control system should be considered for starting zones in the Pink Panther path. Fixed exploder systems options should be evaluated (e.g. Gazex, O'BelIX, Wyssen Tower, Avalanche Guard), which could be supplemented by hand charging and helicopter control, as needed.
 3. Evacuation Plan: An evacuation plan should be developed for this building to reduce any potential residual risk to workers and the public both within and outside of the building. This could include short-term closures during periods of high avalanche hazard as well as complete evacuation of

Comment [AC2]: Note: MOTI to advise if any concerns with this interpretation.

personnel and public from the day lodge and surrounding runout zone during explosive avalanche control.

4. Implementation of an avalanche safety plan, including an explosive control plan and an evacuation plan will require trained, experienced and licensed personnel (as per Schaerer, 2014)."

EAO C&E has based the preliminary compliance determination on review of various material developed during the EA and the Alan Jones Report. EAO C&E also reviewed numerous complaints from various parties. EAO C&E has concluded that GRL is out of compliance with condition 36 as it relates to the day lodge and service building sites.

Next steps:

EAO C&E provides certificate holders with the opportunity to respond to alleged non-compliance to ensure administrative fairness. If GRL notes any factual errors in the Alan Jones Report or if you have reason to believe EAO's non-compliance findings are inaccurate, please advise me within three business days. I recognize this is a relatively short review period; however GRL is familiar with the material on which the compliance determination is based so I am hopeful this is sufficient time. Please advise me if additional time is required.

Unless GRL notes factual errors in EAO's compliance determination by DATE, EAO will confirm the non-compliances. EAO C&E will then determine the appropriate enforcement action to take. When determining the appropriate enforcement action, EAO will consider many factors, including whether the buildings can be safely occupied under specified conditions during the avalanche season or not.

As per your March 25, 2015 letter to me, I note that you have committed to implementing the recommendations in the Alan Jones Report with respect to the service building and the day lodge.

Although I am not seeking your views on potential enforcement, I am advising you that I am considering issuing an Order under Section 34 of the *Environmental Assessment Act* for both the service building and day lodge locations. Under Section 34, I can order that an activity cease, or order that measures be taken to mitigate the effects of the non-compliance. I am presently reviewing the file to determine whether appropriate measures could be ordered to mitigate the effects of the non-compliance.

Any enforcement action will be based on EAO C&E's assessment, recommendations from government agencies and the Alan Jones Report. I anticipate issuing the enforcement action in April or May 2015 after I consider input from government agencies and any additional information requests I may have for Alan Jones.

...5

- 5 -

Please note that once EAO concludes the final compliance determination, the compliance status, enforcement information and related material (e.g. the Alan Jones Report) will be made public.

Finally, as you are aware, this compliance investigation is distinct from the process to determine whether your Project was substantially started. The impact of this compliance determination, if any, on the substantially started question will be addressed in that process.

Yours truly,

Autumn Cousins
Manager of Policy and Compliance

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Monday, March 23, 2015 3:37 PM
To: Caul, Doug D ABR:EX; Leake, Greg EAO:EX
Subject: Avalanche Report

Here is the link to the whole report. Too big to send as an e-mail attachment.

Paul

From: Parks, Chris EAO:EX
Sent: Monday, March 23, 2015 3:30 PM
To: Craven, Paul EAO:EX
Subject: avi report link

[I:\EAO\EAO_SHARED\Compliance\Operational \(ORCS\)\Environmental Assessment - Projects 30050-30700\Jumbo Glacier Resort \(30250-25 JUMBO\)\-21 Compliance Reports & Reviews\Jumbo Glacier Resort Day Lodge Avalanche Risk Zoning Report 19March2015 FINAL.pdf](#)

Chris Parks | Senior Environmental Assessment Compliance Officer |
BC Environmental Assessment Office | T 250.387-0295 | F 250.387-6448
PO Box 9426 Stn. Prov. Gov't | Victoria BC, V8W 9V1

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Monday, March 23, 2015 3:30 PM
To: Caul, Doug D ABR:EX
Subject: Jumbo Map
Attachments: Jumbo Glacier Resort Day Lodgeoning Report 19March2015 FINAL 43.pdf


As requested. A printed out version is on your desk.

Paul

Copyright


Jumbo Glacier Resort
Day Lodge and Service Building
Snow Avalanche Risk Zoning Map

Legend

 Estimated Historical (~100-year)
Avalanche Path Extent


Avalanche Risk Zoning

White Zone (Low Risk)


 Blue Zone (Moderate Risk)

 Red Zone (High Risk)

 River


 Building

Contour Line - 20 m

 Index Contour

 Intermediate Contour

 Index Contour - Glacier

 Intermediate Contour - Glacier

NOTES:

1. Map scale is intended for 11" x 17" (ANSI B) paper size. Actual scale may vary depending on printed paper size and printer settings.
2. Pink Panther White, Blue and Red avalanche risk zones determined according to CAA (2002) Guidelines for Snow Avalanche Risk Determination and Mapping in Canada.
3. Kananis avalanche path boundary represents the estimated limit of historical (100-year) avalanche effects.

Data Sources:

1. Daylodge and service building location provided by Pheidias Project Management Corp., received 12 December, 2014.
2. This map is to be read with the accompanying report "Snow Avalanche Risk Zoning: Jumbo Glacier Resort".
3. Base imagery from Bing Maps (imagery date 2005).
4. Contours from BC TRIM.



0 30 60 90 120

Scale: 1:2,500

Contour Interval 20 m

Coordinate System: NAD 1983 UTM Zone 11N

Unit: Meter



DYNAMIC

For all your mapping, GIS, and data needs, contact us today at 1-800-368-2222 or visit our website at www.dynamic-geo.com

Drawing Number: 14-0056-OBO-002

Date: 19/03/2015

Designed by: Alan Jones, P. Eng

Reviewed by: Greg Johnson, P. Eng

Drawn by: Chris Argue, Dipl. T

Pizarro, Kirsten EAO:EX

From: Caul, Doug D ABR:EX
Sent: Saturday, March 21, 2015 3:40 PM
To: Cousins, Autumn EAO:EX
Cc: Craven, Paul EAO:EX; Leake, Greg EAO:EX; Lewthwaite, Jennifer EAO:EX
Subject: Re: Received: Avalanche Report

Thanks Autumn. Let's connect on Monday on this. Enjoy the rest of the weekend.

Doug

Doug Caul
Associate Deputy Minister
Environmental Assessment Office

On Mar 21, 2015, at 9:38 AM, Cousins, Autumn EAO:EX <Autumn.Cousins@gov.bc.ca> wrote:

Doug, Paul and Greg:

We have just received the avalanche report (linked below). Although we have not yet analyzed it and this information must not be shared publicly at this time, a quick look shows that the day lodge is in a blue zone (may or may not be compliant) and the service building is in a red zone (likely an alleged non-compliance for its originally intended use). We have updated the proposed next steps and associated timelines document but im out right now so will send to you this evening.

Doug, did Kevin Richter provide any guidance regarding who at MOTI will provide avalanche subject matter expertise? Our investigation would benefit both from Jack's knowledge of the history of the EA relating to avalanches and the MOTI avalanche program's subject matter expertise. We propose we send it to both Jack and MOTI avalanche program, requesting that they coordinate their input back to EAO through the ADM. Please advise.

At a high level, C&E's recommended immediate next steps include:

- EAO C&E review and provides preliminary thoughts to Doug Monday (additional time needed for full compliance determination)
- on monday EAO C&E send to Mountain Resorts Branch (Psyche Brown/Gord Humphrey), MOTI District Manager (Jack Bennetto) and MOTI avalanche program (Mike Boissoneault). Note: Other agencies should not provide interpretations regarding if the Project is compliant with condition 36, rather EAO C&E is seeking their comment on the methodology/ results of the QP report, historical context from the EA and any potential implications on the Master Plan.
- EAO C&E assesses commentary from agencies, concludes preliminary compliance status to provide to Doug

Any guidance, questions or direction please advise.

Thanks

Autumn

Sent from my Windows Phone

From: Tommaso Oberti
Sent: 2015-03-21 9:00 AM
To: Milne, Andrew EAO:EX
Cc: Cousins, Autumn EAO:EX; Oberto Oberti
Subject: Avalanche Report - Finally!

Hi Drew,

Please download the avalanche report from the following link:

<https://www.dropbox.com/s/xxf8tjbj196ktx4/Jumbo%20Glacier%20Resort%20Day%20Lodge%20Avalanche%20Risk%20Zoning%20Report%2019March2015%20FINAL.pdf?dl=0>

Best regards,

Tom

Pizarro, Kirsten EAO:EX

From: Kennedy, Karla on behalf of Caul, Doug D ABR:EX
Sent: Tuesday, March 17, 2015 10:44 AM
To: 'ooberti@obertiarchitecture.com'
Cc: Brown, Psyche FLNR:EX; Cousins, Autumn EAO:EX; Craven, Paul EAO:EX
Subject: Request for Avalanche Risk Assessment Report - Jumbo Glacier Resort
Attachments: 277983 Request for Avalanche Risk Assessment Report_16Mar2015.pdf

Dear Mr. Oberto:

Please find attached a letter regarding the Jumbo Glacier Resort Project.

Sincerely,

Doug Caul
Associate Deputy Minister
Environmental Assessment Office



File: 30250-25/JUMBO-18

Reference: 277983

March 17, 2015

SENT VIA EMAIL

Oberto Oberti
President
Pheidias Project Management Corporation
660-1188 West Georgia St
Vancouver BC V6E 4A2
ooberti@obertiarchitecture.com

Dear Mr. Oberti:

Further to previous correspondence sent to you by Paul Craven and Autumn Cousins, I am writing to update you on the substantial start determination process as it relates to the avalanche assessment required for condition 36 of the Jumbo Glacier Resort (JGR) Environmental Assessment Certificate.

In December 2014, the Environmental Assessment Office (EAO) extended the timeline for the substantial start determination to give JGR the opportunity to provide the evidence required for EAO to determine the compliance status of condition 36 for the day lodge and service building sites. EAO continues to be of the view that it would be prudent to conclude the compliance status of condition 36 prior to the Minister of Environment making the substantial start determination. However, EAO must balance that with the need for a timely decision regarding substantial start.

...2

Environmental
Assessment
Office

Office of the
Associate
Deputy Minister

Mailing Address:
PO Box 9426 Stn Prov Govt
Victoria BC V8W 9V1

Location:
2nd Fl – 836 Yates St
Victoria BC V8W 1L8

In December 2014, JGR advised EAO Compliance and Enforcement (EAO C&E) that JGR would send EAO the avalanche risk assessment in a few weeks. Since that time JGR has advised EAO C&E multiple times that the report would be ready shortly. Unless the JGR's qualified professional requires additional time for legitimate purposes (e.g. field verification), EAO requires the avalanche risk assessment by March 25, 2015. If JGR does not send either the avalanche report or satisfactory correspondence from the qualified professional confirming why additional time is needed by March 25, 2015, EAO will proceed to concluding the substantial start report while the compliance status is unknown. The Minister will determine what, if any, weight she will assign to infrastructure with unknown compliance status when making the substantial start determination.

If you have any questions regarding compliance, please discuss with Autumn Cousins, Manager of Compliance. If you have any questions regarding substantial start, you may direct those to me until Paul Craven's return to the office March 23, 2015.

Sincerely,



Doug Caul
Associate Deputy Minister

cc: Psyche Brown, Sr. Manager, Major Projects, Ministry of Forests, Lands and
Natural Resource Operations

Autumn Cousins, Manager, Policy and Compliance, Environmental
Assessment Office

Paul Craven, Executive Director, Policy and Quality Assurance, Environmental
Assessment Office

Pizarro, Kirsten EAO:EX

From: Caul, Doug D ABR:EX
Sent: Friday, March 13, 2015 6:34 PM
To: Cousins, Autumn EAO:EX
Cc: Craven, Paul EAO:EX
Subject: Re: Still no jumbo report

Ok thanks Autumn. No need for this to be done on the weekend. It's a short letter that can be taken care of on Monday.
DC

Doug Caul
Associate Deputy Minister
Environmental Assessment Office

On Mar 13, 2015, at 6:06 PM, Cousins, Autumn EAO:EX <Autumn.Cousins@gov.bc.ca> wrote:

No updates. I will have the draft letter to you Monday Doug.

Sent from my Windows Phone

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Thursday, March 5, 2015 3:13 PM
To: Caul, Doug D ABR:EX
Subject: Mountain Resort Development post meeting with Doug.pptx
Attachments: Mountain Resort Development post meeting with Doug.pptx



Environmental
Assessment Office

Mountain Resort Development

Paul Craven
February 2015

Industry Overview

- 41 ski area/resorts in BC, 12 of which are major destination resorts
- All the 12 major destination resorts operating began as small community/regional ski areas
- Operations typically commenced with only daylodge, ski lift(s), maintenance buildings and parking lot
- Transition from community ski area to resort typically involves ownerships change, significant investment in lifts, daylodge, roads and utilities
- Very little new investment in the industry since the recession in 2008

FLNRO Policy

- Resorts on Crown land require a Master Development (MDA; if Crown land purchased) or Operating Agreement
- These agreements contain a Master Plan to guide development and project phasing
- MDA's do not specify deadlines for completion of development phases, in recognition that resort development is a function of global conditions
- Most of the 12 major resort destinations are mid-term in a 50 year MDA

EA Regulation

- New ski resorts with ≥ 2000 bed units require an EA (e.g. Jumbo).
- Modifications require EA if resort already has ≥ 2000 bed units and proposes to add ≥ 2000 bed units.
- Existing community hills such as Revelstoke and Kicking Horse were able to expand without triggering EA because they originally had < 2000 bed units.
- Expansion plans for a number of existing ski hills (e.g. Sun Peaks) were exempted by the 2002 Transition Regulation

Jumbo

- Jumbo Glacier Resort Project is the Province's first approved "green field" destination resort (i.e. built directly on undeveloped land rather than from an already existing ski facility)
- As a result, no perfect precedents
- Revelstoke Mountain Resort probably most similar

Revelstoke Mountain Resort

Date	Milestone
Late 1960's	Community ski hill established
December 2003	Ownership transferred, Master Plan signed
Late 2005	Completion of access road allows construction to begin
Summer 2006	Construction of upper ski runs. Upper chairlift replaced with gondola
December 2007	Resort reopening, with daylodge, single gondola and one quad chairlift
Summer 2008	Second four person lift added, runs created in north bowl
December 2008	Gondola extended down the hill
March 2009	Sutton Place Hotel completed

5



Environmental Assessment Office

Kicking Horse Mountain Resort

Date	Milestone
1999	Community ski hill purchased
March 2000	Master Plan signed
December 2000	Resort reopens with single gondola, quad chairlift, daylodge, mountain top restaurant and parking for 500 cars.
2001-2002	Paved access road, marketing office, 135 ha new trails, parking for 50 addition cars.
2002-2003	Second lift, daylodge expansion, 43 ha new trails, parking for 50 additional cars.
2003-2004	First significant overnight accommodation with completion of Glacier Lodge
2004 -2005	Upgrade chairlift, add midstation to Catamount lift, propane tank farm, 65 ha new trails
2005-2010	Great Bear Lodge, Palliser Lodge, fire hall, 9 hole golf course



Environmental Assessment Office

Sun Peaks Mountain Resort

Date	Milestone
1961	Community ski hill opened
1993	Ownership transferred, Master Plan signed, 2 new chairlifts, 1 platter and 1 T-bar added
1994	Development of new daylodge and snowboard park
1995	Nine hole golf course, high speed upgrade to lift, 40 ha new terrain, Phase 1 Nancy Greene Lodge completed
1996	Construction of Sundance Lodge Hotel, snow making reservoir and 25 new homes
1997	Sun Peaks Centre completed (ice rink, tennis courts, pool), Radisson Hearthstone Lodge, Radisson Fireside Lodge completed
1998	Sun Peaks Stables, Timberline Village and Forest Trails developments added

Pizarro, Kirsten EAO:EX

From: Caul, Doug D ABR:EX
Sent: Wednesday, March 4, 2015 10:48 PM
To: Craven, Paul EAO:EX
Cc: Kennedy, Karla; Fenton, Chrystal EAO:EX; Lewthwaite, Jennifer EAO:EX
Subject: Re: FOR REVIEW - CLIFF 274932 - Jumbo - Response letter to Tommaso Oberti

I like it. Thanks

On Mar 4, 2015, at 8:37 PM, Craven, Paul EAO:EX <Paul.Craven@gov.bc.ca> wrote:

Doug,
Here is the Jumbo letter I mentioned to you today. Please let me know what you think. I plan to send it out **s.22**
Paul

From: O'Connor, Lisa EAO:EX
Sent: Wednesday, March 4, 2015 2:34 PM
To: Craven, Paul EAO:EX
Cc: O'Connor, Lisa EAO:EX
Subject: AS REQUESTED - CLIFF 274932 - Jumbo - Response letter to Tommaso Oberti

Paul,
Here is the formatted version of the letter to you to share with Doug as an FYI.
If you need him to Officially APPROVE the letter, then I will need to send it up through the proper channels.
I have linked and attached both the Incoming and the Outgoing for your convenience.

Document Type:		Letter via Email
Originator or requestor of document with brief description:		Paul requested that a reply direct response be drafted for this incoming.
Related/incoming document saved at:		<u>I:\EAO\EAO_SHARED\ADMINISTRATION\Correspondence\2015\Incoming\274932_Incoming Ju</u>
Document saved at:		<u>I:\EAO\EAO_SHARED\ADMINISTRATION\Correspondence\2015\Responses\DRAFT 274932 Res</u>

Thanks,
Lisa O'Connor I Policy Administrative Assistant I (250) 356-1151

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Wednesday, March 4, 2015 8:38 PM
To: Caul, Doug D ABR:EX
Cc: Kennedy, Karla; Fenton, Chrystal EAO:EX; Lewthwaite, Jennifer EAO:EX
Subject: FOR REVIEW - CLIFF 274932 - Jumbo - Response letter to Tommaso Oberti
Attachments: DRAFT_274932_Response_Jumbo_TOberti_Mar2015.docx; 274932_Incoming_Jumbo_Oberti_18Feb2015.msg

Doug,

Here is the Jumbo letter I mentioned to you today. Please let me know what you think. I plan to send it out **s.22**
s.22

Paul

From: O'Connor, Lisa EAO:EX
Sent: Wednesday, March 4, 2015 2:34 PM
To: Craven, Paul EAO:EX
Cc: O'Connor, Lisa EAO:EX
Subject: AS REQUESTED - CLIFF 274932 - Jumbo - Response letter to Tommaso Oberti

Paul,

Here is the formatted version of the letter to you to share with Doug as an FYI.

If you need him to Officially APPROVE the letter, then I will need to send it up through the proper channels.

I have linked and attached both the Incoming and the Outgoing for your convenience.

Document Information	
Document Type:	Letter via Email
Originator or requestor of document with brief description:	Paul requested that a reply direct response be drafted for this incoming.
Related/incoming document saved at:	I:\EAO\EAO_SHARED\ADMINISTRATION\Correspondence\2015\Incoming\274932 Incoming Jumbo Ob
Document saved at:	I:\EAO\EAO_SHARED\ADMINISTRATION\Correspondence\2015\Responses\DRAFT_274932_Response

Thanks,
Lisa O'Connor Policy Administrative Assistant I (250) 356-1151



Ref: 274932

File: 30250-25/JUMBO-18

March XX, 2015

SENT VIA EMAIL

Tommaso Oberti
Vice President
Pheidias Project Management Corporation
660-1188 West Georgia St
Vancouver BC V6E 4A2
toberti@pheidias.ca

Dear Mr Oberti:

Thank you for your letter of February 18, 2015 regarding the substantially started determination and avalanche hazards at the resort daylodge for the Jumbo Glacier Resorts Project (Jumbo).

I share your interest in a timely determination on whether Jumbo is substantially started. As you know, we are awaiting the engineering avalanche risk evaluation with a zoning plan report as requested by our office on December 11, 2014 and you agreed to provide in your December 15, 2014 letter to Autumn Cousins.

I understand that the risk evaluation work is nearing completion. As indicated in my letter of December 11, 2014 it is my view that it would be prudent to wait until there is greater clarity on the compliance status before proceeding. My view has not changed. While the compliance status of the daylodge and service building is not determinative of the substantially started question it may be a factor. Furthermore, assuming there is an issue of non-compliance, which has not been determined; the degree of the non-compliance may also be a factor.

I appreciate you providing your point of view on the relevance of the compliance review to the substantially started determination. Those views, along with those of the First Nations involved in the process, will be considered as part of the substantially started determination. It is ultimately for the decision maker to determine what, if any relevance, the compliance issue, if there is one, bears on the substantially started determination.

...2

Environmental
Assessment
Office

Mailing Address:
PO Box 9426 Str Prov Govt
Victoria BC V8W 9V1

Location:
1st & 2nd Fl – 836 Yates Street
Victoria BC V8W 1L8

Apart from the additional time required to address this compliance review, the process for this substantially started determination has proceeded as outlined in my letter of October 3, 2014. That process afforded you an opportunity to provide the Environmental Assessment Office (EAO), information you believed relevant to the determination following the completion of construction activity on the site by the substantially started deadline of October 12, 2014. In addition, the process provided the Ktunaxa Nation Council and the Shuswap Indian Band an opportunity to provide their views on the question. Following the compliance determination, we will proceed as efficiently as possible, keeping our procedural fairness obligations in mind.

Finally, I want to address the position you advanced in your letter to me and previous letters to Autumn Cousins that EAO is somehow "shifting goalposts" in our compliance assessment of condition 36; which states:

"Residential and commercial structures will be located completely outside the avalanche hazard area."

This is a compliance matter. A question was raised whether the structures were in compliance with condition 36. After reviewing the information you provided, it was determined that further information was required and an engineering avalanche risk assessment was requested consistent with industry standards, which were also in place at the time the environmental assessment certificate was granted.

Moreover, this is consistent with the EAO Assessment Report which noted that Glacier Resorts Ltd. was to do further detailed analysis prior to facility installation and/or construction of residential and commercial structures.

I trust all the above is clear, however, if you have any questions please do not hesitate to contact me at 250 387-6748 or by email at Paul.Craven@gov.bc.ca.

Yours truly,

Paul Craven
Executive Director, Policy and Quality Assurance

cc: Autumn Cousins, Manager of Policy and Compliance
Environmental Assessment Office

Pizarro, Kirsten EAO:EX

From: Tommaso Oberti <toberti@pheidias.ca>
Sent: Wednesday, February 18, 2015 5:07 PM
To: Craven, Paul EAO:EX
Cc: Cousins, Autumn EAO:EX; Milne, Andrew EAO:EX; Oberto Oberti; Grant Costello; Ralf Schwiede; Arnold Armstrong; Brown, Psyche FLNR:EX
Subject: Letter re Jumbo Glacier Resort
Attachments: JGR-PCraven-Feb18-2015.pdf

Hello Paul,

Please see the attached letter regarding JGR and the issues related to substantial start and avalanche hazard assessments.

Thank you,
Tom

Tommaso Oberti
Vice President

Pheidias Project Management Corp.
Development Management & Design

www.pheidias.ca
660 - 1188 West Georgia Street
Vancouver, BC V6E 4A2

Tel: 604.662.8833
Mobile: 604.613.2949
Fax: 604.662.7958

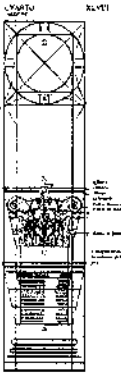
CAUTION:

This message is confidential. It may also be privileged. If you have received it by mistake, please let us know by email reply and delete it; you may not copy or disclose its contents to anyone. Our work is copyrighted and may not be modified, repurposed or distributed without prior written authorization by us. Please note the integrity of email cannot be guaranteed on the Internet. Thank you.

pheidias project management corporation

660 – 1188 West Georgia Street
Vancouver, BC V6E 4A2 Canada

t: 604-662-8833 f: 604-662-7958
www.pheidias.ca



February 18, 2015

Sent via e-mail

Mr. Paul Craven
Executive Director, Policy & Quality Assurance
Environmental Assessment Office
Victoria, BC

**Re: Substantially Started Determination and Avalanche Hazards at the
Jumbo Glacier Resort Daylodge**

Dear Mr. Craven:

It has now been more than four months since the “substantially started” deadline of October 12, 2014 and while recognizing the pressures under which your office is operating, we are becoming concerned over the length of time it is taking for the EAO to make a reasonable determination.

As you know, we are now waiting to receive an avalanche study from Alan Jones of Dynamic Avalanche Consulting, which for a number of reasons outside of our control has been delayed until at least next week. As we noted in our December 15, 2014 letter to Autumn Cousins, we agreed to commission the avalanche study on behalf of Glacier Resorts Ltd. on the basis that a study would need to be done anyway prior to the commencement of resort operations, but were very concerned that this issue would be used as a pretext to further delay the decision-making process with regards to a substantial start.

We believe strongly that there is no reason to mix this technical compliance issue with the larger “substantially started” determination, despite the constant equivocations presented by project opponents – who are encouraged by the additional delays and have been waging a media campaign.

It would be ridiculous to have a project that has been in process since 1990, has passed five major review processes, and has faced unprecedented and at times capricious regulatory obstacles, hinge on whether or not a daylodge falls within a red, blue or white avalanche zone, especially since ski resort daylodges in avalanche zones are not uncommon and there is no impact on the environment or public safety. Any potential avalanche risk can be mitigated with proven technology and procedures that are implemented by ski areas around the world, and in which, Karl Ernst, a director of Glacier Resorts Ltd., is an expert.

Even in the absurd chance that the daylodge and service building foundations must be abandoned by provincial decision, one cannot deny or ignore their existence and the fact that they were placed in good faith according to approved avalanche mapping and were issued a land lease and

a building permit by the approving authorities. The concrete in the ground is real and substantial, its location was determined and approved by multiple authorities, it is placed outside known avalanche paths, and its ultimate location was chosen to safeguard the environment (to avoid newly discovered riparian zones).

Determining “substantial start” and compliance with commitment 36 are separate exercises. The “substantial start” determination is not based on a checklist or technicalities, as none exist. Instead, it is based on real evidence on the ground and the implementation of a master plan and business plan. Conversely, compliance with commitment 36 is a matter of risk and expense for the proponent (should the daylodge need to be moved again). Non-compliance does not void the fact that a significant amount of construction has occurred, and that it was done according to known hazards mapping and with the approval of both the Province and the Municipality.

Please note also that the permanent bridge accessing the resort site and the chairlift #1 location are in place, so at least a substantial portion of the construction was in place by October 12, 2014 and even if the daylodge location were to be condemned (something that we do not accept, but for example it could be temporarily dedicated to snowcat storage until the dispute is resolved), access to the site was opened and foundations for a chairlift were put in place in compliance with the deadline, despite the delays caused by road closures.

The location of the daylodge must also be seen in light of the constraints of the permitting process under which construction occurred, which we have detailed in previous correspondence. Due to time constraints that were largely outside of the control of the proponent, the necessary relocation of the daylodge could only occur in a zoned area and in previously approved land lease area. A change in the land lease area or zoning would have required months, with new public hearings and consultations with First Nations.

The avalanche mapping that is the basis of the project planning was never disputed before we did the work for this project last September and October, and in good faith we used the accepted avalanche mapping of the valley, the site conditions (particularly the evidence of the mature tree cover) and the reliance on well known avalanche mitigation techniques to locate the daylodge and the service building in adequately safe areas according to all available knowledge and in order to meet project deadlines. The original location of the daylodge did not require special study, and there was no time to do additional studies when the location had to be changed.

The EAO has spoken clearly in the past of its acceptance of the avalanche mapping submitted with the Project Report for the project and the buildings in question are outside of those mapped avalanche zones. To apply guidelines that were developed in the years following the review and acceptance of the project’s avalanche mapping, and which were never mentioned or cited prior to approval of the EA certificate, is a classic example of “shifting goalposts”.

According to the EAO’s *Jumbo Glacier Resort Project Assessment Report* (page ix):

The Proponent's conceptual operating plan describes avalanche hazards in the vicinity of roads, ski lifts and ski runs; there is no avalanche hazard in the vicinity of any proposed residential and/or commercial structure. The technical assessment on avalanche hazards is sufficient to meet Ministry of Transportation requirements and the avalanche management and conceptual operations plan is sufficient. A ski area safety plan would be required prior to the start of operations that would provide details of areas of exposure and safety programs that would be established to avoid exposure to avalanche hazards.

Based on the information and commitments provided, the EAO is satisfied that the Proponent has identified and assessed the potential impacts of the Project on avalanche control at the resort, and that the Proponent can implement appropriate measures to avoid or address any potential significant adverse effects.

The daylodge and service buildings are located outside of the avalanche zones shown in the accepted and approved mapping done for the project. This is an important point because it was this accepted mapping that provided the basis for condition 36, which was agreed upon on the basis of the mapping submitted with the Project Report.

The EAO report also notes (page 24) that:

MOT commented that the technical assessment completed by Peter Schaerer on avalanche hazards, which looked at the location of the resort placement outside the avalanche hazard area is sufficient to meet MOT requirements. The avalanche management and conceptual operations plan provided by the Proponent is sufficient to meet the needs of a conceptual operations plan and it is understood that further discussion of implementation details would occur prior to construction of the access road.

The conceptual operations plan in the vicinity of any residential and/or commercial structure meets MOT requirements at this stage of the proposal. Detailed analysis would be required prior to facility installation and/or construction of residential and commercial structures. This could be managed through the standard permitting processes. MOT, as one of their legislated responsibilities, defines the access requirements for subdivision approvals. Where potential for natural hazard conditions exist, the applicant is required to conduct a detailed analysis to confirm the site is safe for its intended use before permitting is provided.

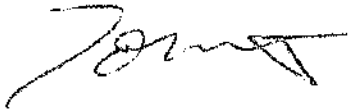
As the report specifically mentions, natural hazard risk assessment is typically completed at the time of subdivision. Where subdivision is not contemplated (as for Recreation Improvement

leases, included a daylodge lease), it is done at the building permit stage, if considered necessary. In this case, the land lease approval process, including the EA Act review process and the Master Plan review process, assessed avalanche risk and mitigation. MOT provides feedback in these processes, which it did – particularly during the Master Plan approval process that occurred after the issuance of the EA Certificate.

Common sense, MOT's feedback during the Master Plan process, the MDA, and current legislation and regulations, indicate that a snow safety plan must be in place before the start of operations or winter construction, and would be prepared based on detailed avalanche planning and mitigation. It is for this reason (the fact that we would be doing the work anyway) that we agreed to undertake the further engineering avalanche risk evaluations that we are now awaiting.

We believe, however, that the question of whether or not the daylodge is in compliance with condition 36 should not be confused with the larger and separate question of whether or not the project has been "substantially started".

With kind regards,
Pheidias Project Management Corporation



Per: Tommaso Oberti,
Vice-President

Cc: Oberto Oberti
Autumn Cousins
Andrew Milne
Psyche Brown
Grant Costello
Ralf Schwiede
Arnold Armstrong

TO/of

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Monday, March 2, 2015 11:50 AM
To: Cousins, Autumn EAO:EX; Milne, Andrew EAO:EX
Subject: FW: Jumbo Status?

See below.

From: Caul, Doug D EAO:EX
Sent: Monday, March 2, 2015 11:39 AM
To: Craven, Paul EAO:EX
Subject: Re: Jumbo Status?

Thanks. We will need an immediate heads up when it comes in.
Dc

Doug Caul
Associate Deputy Minister
Environmental Assessment Office

On Mar 2, 2015, at 11:25 AM, Craven, Paul EAO:EX <Paul.Craven@gov.bc.ca> wrote:

FYI.

From: Milne, Andrew EAO:EX
Sent: Monday, March 2, 2015 11:23 AM
To: Craven, Paul EAO:EX
Subject: Re: Jumbo Status?

Hi Paul,
I just got off the phone with JGR. No report yet. ETA is this week sometime.

Drew Milne
Environmental Assessment Compliance Officer
Environmental Assessment Office
Mobile Account

On Mar 2, 2015, at 11:16 AM, Craven, Paul EAO:EX <Paul.Craven@gov.bc.ca> wrote:

Doug wants to know before going into Estimates this afternoon. I assume no report?

Paul

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Monday, March 2, 2015 11:25 AM
To: Caul, Doug D ABR:EX
Subject: FW: Jumbo Status?

FYI.

From: Milne, Andrew EAO:EX
Sent: Monday, March 2, 2015 11:23 AM
To: Craven, Paul EAO:EX
Subject: Re: Jumbo Status?

Hi Paul,
I just got off the phone with JGR. No report yet. ETA is this week sometime.

Drew Milne
Environmental Assessment Compliance Officer
Environmental Assessment Office
Mobile Account

On Mar 2, 2015, at 11:16 AM, Craven, Paul EAO:EX <Paul.Craven@gov.bc.ca> wrote:

Doug wants to know before going into Estimates this afternoon. I assume no report?

Paul

Pizarro, Kirsten EAO:EX

From: Caul, Doug D ABR:EX
Sent: Saturday, February 14, 2015 5:53 PM
To: Cousins, Autumn EAO:EX
Cc: Craven, Paul EAO:EX; Leake, Greg EAO:EX
Subject: Re: Jumbo

Thanks Autumn
Dc

Doug Caul
Associate Deputy Minister
Environmental Assessment Office

On Feb 14, 2015, at 5:44 PM, Cousins, Autumn EAO:EX <Autumn.Cousins@gov.bc.ca> wrote:

Hi Doug

Jgr just updated me re avalanche report:

"We were expecting it on Friday and didn't receive it. I'll follow up with Alan on Monday morning and will let you know what comes of that conversation."

Sent from my Windows Phone

From: Caul, Doug D EAO:EX
Sent: 2015-02-14 2:32 PM
To: Cousins, Autumn EAO:EX
Cc: Craven, Paul EAO:EX; Leake, Greg EAO:EX
Subject: Re: Jumbo

Ok thanks Autumn. Enjoy your weekend.
Dc

Doug Caul
Associate Deputy Minister
Environmental Assessment Office

> On Feb 14, 2015, at 2:19 PM, Cousins, Autumn EAO:EX <Autumn.Cousins@gov.bc.ca> wrote:
>
> Hi Doug - no avalanche report yet. On Thursday JGR confirmed they expected we'd get it yesterday but I've not heard from them since then. I'll let Paul and Greg know as soon as I have any more information.
> Have a good weekend
> Autumn
>
>
> -----Original Message-----
> From: Caul, Doug D EAO:EX
> Sent: Saturday, February 14, 2015 11:54 AM
> To: Craven, Paul EAO:EX; Cousins, Autumn EAO:EX

> Cc: Leake, Greg EAO:EX
> Subject: Jumbo
>
> Hi Paul and Autumn. Sorry for the weekend email. Did we receive the avalanche report from JGR yesterday? If so, anything of note that we need to be prepared for Monday QP?
>
> Doug
>
> Doug Caul
> Associate Deputy Minister
> Environmental Assessment Office

Pizarro, Kirsten EAO:EX

From: Caul, Doug D ABR:EX
Sent: Thursday, February 12, 2015 5:14 PM
To: Craven, Paul EAO:EX
Cc: Leake, Greg EAO:EX
Subject: RE: Doug is looking for status update on Jumbo

Thanks – when we get it – tie in Greg.

I have given Jack a heads up that we will be in touch when we get it.

dC

From: Craven, Paul EAO:EX
Sent: Thursday, February 12, 2015 2:24 PM
To: Caul, Doug D EAO:EX
Subject: FW: Doug is looking for status update on Jumbo

FYI.

From: Cousins, Autumn EAO:EX
Sent: Thursday, February 12, 2015 8:31 AM
To: Craven, Paul EAO:EX
Subject: RE: Doug is looking for status update on Jumbo

Yes. Tom said again yesterday to drew that we should get it friday . We think that's when jgr is getting it from qp though so it wouldn't surprise me if they have questions for qp. That could delay when we receive it.

Sent from my Windows Phone

From: Craven, Paul EAO:EX
Sent: 2015-02-12 8:00 AM
To: Cousins, Autumn EAO:EX
Subject: Doug is looking for status update on Jumbo

Is JGR still planning on submitting a report on the 13th?

Thanks,

Paul

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Wednesday, February 18, 2015 9:12 PM
To: Cousins, Autumn EAO:EX; Russell, Jim AGRI:EX
Subject: FW: Letter re Jumbo Glacier Resort
Attachments: JGR-PCraven-Feb18-2015.pdf

Please work on a draft response. Thanks.

From: Tommaso Oberti [<mailto:toberti@pheidias.ca>]
Sent: Wednesday, February 18, 2015 5:07 PM
To: Craven, Paul EAO:EX
Cc: Cousins, Autumn EAO:EX; Milne, Andrew EAO:EX; Oberto Oberti; Grant Costello; Ralf Schwiede; Arnold Armstrong; Brown, Psyche FLNR:EX
Subject: Letter re Jumbo Glacier Resort

Hello Paul,

Please see the attached letter regarding JGR and the issues related to substantial start and avalanche hazard assessments.

Thank you,
Tom

Tommaso Oberti
Vice President

—
Pheidias Project Management Corp.
Development Management & Design

www.pheidias.ca
660 - 1188 West Georgia Street
Vancouver, BC V6E 4A2

Tel: 604.662.8833
Mobile: 604.613.2949
Fax: 604.662.7958

CAUTION:

This message is confidential. It may also be privileged. If you have received it by mistake, please let us know by email reply and delete it; you may not copy or disclose its contents to anyone. Our work is copyrighted and may not be modified, repurposed or distributed without prior written authorization by us. Please note the integrity of email cannot be guaranteed on the Internet. Thank you.

Page 087 to/à Page 090

Withheld pursuant to/removed as

DUPLICATE

Pizarro, Kirsten EAO:EX

From: Caul, Doug D ABR:EX
Sent: Saturday, February 14, 2015 11:54 AM
To: Craven, Paul EAO:EX; Cousins, Autumn EAO:EX
Cc: Leake, Greg EAO:EX
Subject: Jumbo

Hi Paul and Autumn. Sorry for the weekend email. Did we receive the avalanche report from JGR yesterday? If so, anything of note that we need to be prepared for Monday QP?

Doug

Doug Caul
Associate Deputy Minister
Environmental Assessment Office

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Thursday, February 12, 2015 2:24 PM
To: Caul, Doug D ABR:EX
Subject: FW: Doug is looking for status update on Jumbo

FYI.

From: Cousins, Autumn EAO:EX
Sent: Thursday, February 12, 2015 8:31 AM
To: Craven, Paul EAO:EX
Subject: RE: Doug is looking for status update on Jumbo

Yes. Tom said again yesterday to drew that we should get it friday . We think that's when jgr is getting it from qp though so it wouldn't surprise me if they have questions for qp. That could delay when we receive it.

Sent from my Windows Phone

From: Craven, Paul EAO:EX
Sent: 2015-02-12 8:00 AM
To: Cousins, Autumn EAO:EX
Subject: Doug is looking for status update on Jumbo

Is JGR still planning on submitting a report on the 13th?

Thanks,

Paul

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Thursday, January 29, 2015 8:23 AM
To: Leake, Greg EAO:EX; Caul, Doug D ABR:EX
Cc: Kennedy, Karla; Lewthwaite, Jennifer EAO:EX
Subject: RE: Jumbo house note

You will recall we became aware of the "short report" after the briefing with the Minister. Jumbo Glacier Resorts sent it to FLRNO and then it was sent to us post briefing. We passed it on to Transportation and they considered it their report to us.

The report went into more detail than the conclusions that Jumbo Glacier Resorts relayed in their substantially started submission (which is public) but the essence is the same. We put the same quote in the letter to Jumbo regarding our review (which is public).

The short report did confirm there was a question of whether the daylodge was in the wording of the condition "an avalanche hazard area" but gives the opinion that mitigation measures could address the issue. As you note, that is why we are looking at it and why we asked for the zoning plan report.

-----Original Message-----

From: Leake, Greg EAO:EX
Sent: Thursday, January 29, 2015 8:14 AM
To: Caul, Doug D EAO:EX; Craven, Paul EAO:EX
Cc: Kennedy, Karla EAO:EX; Lewthwaite, Jennifer EAO:EX
Subject: RE: Jumbo house note

Doug:

This all happened around December 10. You will recall it was the subject of the rolling discussion with GCPE HQ (Kelly), FLNR, MOTI and ourselves. MMP and Matt would have been in Peru then, I think, which might explain.

The report is public on our website at:

http://a100.gov.bc.ca/appsdata/epic/html/deploy/epic_document_18_38496.html

I am attaching both the house note and the IN that we (you, me and Paul) developed in December.

G.

-----Original Message-----

From: Caul, Doug D EAO:EX
Sent: Wednesday, January 28, 2015 8:36 PM
To: Leake, Greg EAO:EX; Craven, Paul EAO:EX
Cc: Kennedy, Karla EAO:EX; Lewthwaite, Jennifer EAO:EX
Subject: Jumbo house note

MMP has a question about the note. We quote a line from the short document the company provided to us in December. The line suggests the author (Schaerer?) believes the day lodge may be in an avalanche zone under certain conditions.

MMP is wondering if this report is public and is concerned about the potential for questions. (My message to Matt was "this is why we took the c and e steps").

We need to recreate a bit of the history on this one. Neither Matt nor the minister recall this short report. Plse send me the house note and report so I can refresh my memory. And if either of you recall the story around this report (how it came to be, is it public etc) plse send me that info in an email. I will try to grab a few minutes with her tomorrow (Thursday) at roundup.

Thanks

Dc

Doug Caul
Associate Deputy Minister
Environmental Assessment Office

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Wednesday, January 28, 2015 8:18 AM
To: Kennedy, Karla; Lewthwaite, Jennifer EAO:EX
Cc: O'Connor, Lisa EAO:EX
Subject: FW: Jumbo next steps draft Jan 27 2015.docx
Attachments: Jumbo next steps draft Jan 27 2015.docx

I sent this to Doug last night. Did not want to bother all with the late night e-mail.

From: Craven, Paul EAO:EX
Sent: Tuesday, January 27, 2015 9:34 PM
To: Caul, Doug D EAO:EX
Cc: Cousins, Autumn EAO:EX; Russell, Jim EAO:EX
Subject: Jumbo next steps draft Jan 27 2015.docx

Doug,

Here is the draft plan estimating conclusion of process late March/late April.

Timing of course could be impacted based on when we get the report; the nature of the report and the degree and time we need to give either Glacier Resorts or the KNC time to review based on fairness/duty to consult requirements. I have a call on Friday with KNC at their request so that will give some sense of what their expectations are. Not included in this plan is any peer review by an independent avalanche expert outside of government. That is an option that we could consider. Jim is resuming work on the revised substantially started report so it will be ready to complete relatively quickly after compliance conclusion.

Paul

DRAFT: Jumbo Glacier Resort Project: Potential Next Steps

The following high level steps are detailed below:

1. Complete investigation
2. Conclude compliance status (and if necessary, enforce) or request further information
3. Resume substantial start determination process
 - a. If compliant: estimate late February – early March
 - b. If not compliant: estimate late March-early April
 - c. If additional information required: timing dependant on nature of information required

Substantial start determination material expected to be ready for the Minister late March-late April.

All dates/timeframes in this draft plan are based on receiving QP report from GRL week of Jan 26.

Step 1: Complete Investigation:

Step	Task	Timeline	Why?	Comments
A	Glacier Resorts Ltd (GRL) sends EAO C&E avalanche risk assessment by Qualified Professional. (QP)	Week of Jan 26 (according to GRL)		
B.	EAO C&E 'screens' QP report.	Approx 2 days Week of Feb 2	assess if report meets requirements in the EAO letter to GRL	If report does not address the required information, skip to Step 2 Path 3 below.
C.	EAO C&E sends QP report to Mountain Resorts Branch (MRB) and Ministry of Transportation and Infrastructure (MoTI) Avalanche Program for review. Concurrently, EAO C&E continues to review. EAO C&E may request input from other parties as needed to address any questions that arise through the review of the QP report.	Approx. 5-7 days Comments to EAO C&E by Feb 15.	MRB: assess the report for implications for master plan. MoTI Avalanche Program: assess report based on their avalanche subject matter expertise.	Would need to confirm timing with MRB and MoTI Avalanche Program. Neither agency should provide interpretations regarding if the Project is compliant with condition 36, rather EAO C&E is seeking their comment on the methodology/ results of the QP report and any potential implications on the Master Plan.
D.	EAO C&E determines preliminary compliance status of condition 36 (day lodge and service building sites only).	Mid to late February		EAO C&E will review with JAG and the Associate Deputy Minister EAO. (Assoc DM)

Step 2: Conclude compliance status (including enforcement if necessary) or require information.

The next steps are dependent on whether or not the Project is in compliance with condition 36 in relation to the day lodge and service building sites. Three potential paths are identified: compliant, not compliant or further information required.

Step 2: Potential Path 1: EAO C&E determines GRL is compliant with condition 36 in relation to the day lodge and service building locations:

A	EAO C&E provides GRL conclusion with GRL (formal letter).	Mid to late February	To conclude investigation	
B	EAO C&E advises Ktunaxa and complainant of compliance conclusion	Within a few days of advising GRL	Information sharing with KNC and complainant	
C	EAO C&E posts letter re: compliance conclusion online	2 days after advising KNC (late Feb-early March)	transparency	Communications material and IN will be prepared prior to public release

Step 2: Potential Path 2: EAO C&E determines GRL is not compliant with condition 36 in relation to the day lodge and service building locations:

A	EAO C&E provides GRL with opportunity to respond.	Two weeks Responses due back from GRL early to mid March	administrative fairness	
B	EAO C&E reviews GRL response.	Three to five days.	Administrative fairness	Additional time may be required depending on nature of response and whether it impacts the preliminary conclusion of non-compliance
C	EAO C&E recommends potential enforcement options to Assoc DM.	Mid to late March		EAO C&E would discuss potential enforcement options with JAG, MRB and MoTI Avalanche Program.
D	Assoc DM determines appropriate enforcement to take or to recommend to the Minister	Late March		
E	EAO C&E advises JGR of enforcement. Minister, Assoc DM or EAO C&E implements enforcement action.	Late March		
D	EAO C&E advises Ktunaxa of non-compliance and enforcement	Within a few days of advising GRL	Information sharing with KNC	
C	EAO C&E posts letter re: non-compliance and enforcement online	Day after advising KNC (late March/early April)	transparency	Communications material and IN will be prepared prior to public release

Step 2: Potential Path 3: EAO C&E determines GRL has not provided sufficient information to determine the compliance status of condition 36 re the day lodge and service building locations:

A	EAO C&E provides GRL with a letter advising of the information required to determine the compliance status	mid-late February		
B	EAO C&E advises Ktunaxa that JGR must provide further information	Within a few days of advising GRL	Information sharing with KNC	
C	EAO C&E posts letter re: information require to determine compliance status	Day after advising KNC (mid to late February)	transparency	Communications material and IN will be prepared prior to public release
D	GRL submits required information to EAO C&E	TBD by GRL		
E	EAO C&E reviews information (repeat process beginning at Step 1)	TBD		

Step 3: Substantial start process resumes:

A	PQA completes draft substantial start report taking into account the compliance determination.	7 days after EAO C&E concludes compliance status		
B	PQA sends draft report to the GRL and the Ktunaxa for review for factual errors and any further submissions on impact of compliance issue on the substantially started determination	14 days	Administrative fairness/duty to consult	
C	PQA updates substantial start report based on comments	TBD based on nature of comments (estimate 3 days)		
D	Finalize substantial start report and arrange briefing for Minister	TBD (estimate 5 days)		
E	Minister determines whether substantial start was achieved	TBD (estimate 5 days)		
F	GRL and Ktunaxa are given advance notice of announcement (minimum of 2 days)	TBD		Need to determine whether this includes the actual determination and whether both KNC and GRL.
G	EAO posts decision material online	Late March-late April		Communications material and INs will be prepared prior to public release.

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Tuesday, January 27, 2015 9:34 PM
To: Caul, Doug D ABR:EX
Cc: Cousins, Autumn EAO:EX; Russell, Jim AGRI:EX
Subject: Jumbo next steps draft Jan 27 2015.docx
Attachments: Jumbo next steps draft Jan 27 2015.docx

Doug,

Here is the draft plan estimating conclusion of process late March/late April.

Timing of course could be impacted based on when we get the report; the nature of the report and the degree and time we need to give either Glacier Resorts or the KNC time to review based on fairness/duty to consult requirements. I have a call on Friday with KNC at their request so that will give some sense of what their expectations are. Not included in this plan is any peer review by an independent avalanche expert outside of government. That is an option that we could consider. Jim is resuming work on the revised substantially started report so it will be ready to complete relatively quickly after compliance conclusion.

Paul

Page 100 to/à Page 102

Withheld pursuant to/removed as

DUPLICATE

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Wednesday, January 28, 2015 8:59 AM
To: Caul, Doug D ABR:EX
Cc: Cousins, Autumn EAO:EX; Russell, Jim AGRI:EX
Subject: RE: Jumbo next steps draft Jan 27 2015.docx

Further to this. Jumbo Glacier Resorts as of this morning now indicating February 13th for their report.

Paul

From: Craven, Paul EAO:EX
Sent: Tuesday, January 27, 2015 9:34 PM
To: Caul, Doug D EAO:EX
Cc: Cousins, Autumn EAO:EX; Russell, Jim EAO:EX
Subject: Jumbo next steps draft Jan 27 2015.docx

Doug,

Here is the draft plan estimating conclusion of process late March/late April.

Timing of course could be impacted based on when we get the report; the nature of the report and the degree and time we need to give either Glacier Resorts or the KNC time to review based on fairness/duty to consult requirements. I have a call on Friday with KNC at their request so that will give some sense of what their expectations are. Not included in this plan is any peer review by an independent avalanche expert outside of government. That is an option that we could consider. Jim is resuming work on the revised substantially started report so it will be ready to complete relatively quickly after compliance conclusion.

Paul

23. 64. 15. 1.

1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 26

DOI: 10.1002/anie.201411014

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Wednesday, December 24, 2014 12:58 PM
To: Caul, Doug D ABR:EX
Subject: FW: Response to December 11 letter from Autumn Cousins
Attachments: JGR-ACousins-Dec15-2014.pdf; 1 - Jumbo Glacier Resort Permits Chronology.pdf

As discussed yesterday, correspondence from Mr. Oberti. Autumn has drafted a response which I am reviewing but I am not inclined to get into a debate with them but there are a few items we may need to correct on the record.

Paul

From: Tommaso Oberti [<mailto:toberti@pheidias.ca>]
Sent: Monday, December 15, 2014 10:08 AM
To: Cousins, Autumn EAO:EX; Craven, Paul EAO:EX; Milne, Andrew EAO:EX
Cc: Greg Tucker; Oberto Oberti; Arnold Armstrong; Ralf Schwiede
Subject: Response to December 11 letter from Autumn Cousins

Hello Autumn,

Please find attached a letter and enclosure from Oberto Oberti in response to your December 11th letter.

With kind regards,
Tom

Tommaso Oberti
Vice President

--
Pheidias Project Management Corp.
Development Management & Design

www.pheidias.ca
660 - 1188 West Georgia Street
Vancouver, BC V6E 4A2

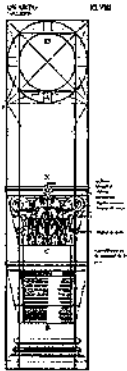
Tel: 604.662.8833
Mobile: 604.613.2949
Fax: 604.662.7958

CAUTION:
This message is confidential. It may also be privileged. If you have received it by mistake, please let us know by email reply and delete it; you may not copy or disclose its contents to anyone. Our work is copyrighted and may not be modified, repurposed or distributed without prior written authorization by us. Please note the integrity of email cannot be guaranteed on the Internet. Thank you.

pheidias project management corporation

660 – 1188 West Georgia Street
Vancouver, BC V6E 4A2 Canada

t: 604-662-8833 f: 604-662-7958
www.pheidias.ca



December 15, 2014

Sent via e-mail

Ms. Autumn Cousins
Manager, Policy and Compliance
Environmental Assessment Office
Victoria, BC

Re: Avalanche Hazards at the Jumbo Glacier Resort Daylodge

Dear Ms. Cousins:

We wish to respond as quickly and as fully as possible to your letter of December 11, 2014, but we are very disappointed by the additional delays and uncertainties that are being introduced to this project after the 24 years ordeal of the approval process, when in fact every possible measure to protect the environment and the public is being diligently pursued by the proponent group despite a uniquely challenging process.

Many things have changed between when we initiated the application and the studies for the Jumbo Glacier Resort project (including provincial methods of defining and classifying avalanche mapping), and have changed again after the Environmental Assessment Act certificate was issued, but one thing has not changed, and that is that the goal posts for the required studies never cease changing for this project.

According to the EAO's *Jumbo Glacier Resort Project Assessment Report* (page ix):

The Proponent's conceptual operating plan describes avalanche hazards in the vicinity of roads, ski lifts and ski runs; there is no avalanche hazard in the vicinity of any proposed residential and/or commercial structure. The technical assessment on avalanche hazards is sufficient to meet Ministry of Transportation requirements and the avalanche management and conceptual operations plan is sufficient. A ski area safety plan would be required prior to the start of operations that would provide details of areas of exposure and safety programs that would be established to avoid exposure to avalanche hazards.

Based on the information and commitments provided, the EAO is satisfied that the Proponent has identified and assessed the potential impacts of the Project on avalanche control at the resort, and that the Proponent can implement appropriate measures to avoid or address any potential significant adverse effects.

The daylodge and service buildings are located outside of the avalanche zones shown in the accepted and approved mapping done for the project. This is an important point because it was this accepted mapping that provided the basis for condition 36, which was agreed upon on the basis of the mapping submitted with the Project Report.

The EAO report also notes (page 24) that:

MOT commented that the technical assessment completed by Peter Schaerer on avalanche hazards, which looked at the location of the resort placement outside the avalanche hazard area is sufficient to meet MOT requirements. The avalanche management and conceptual operations plan provided by the Proponent is sufficient to meet the needs of a conceptual operations plan and it is understood that further discussion of implementation details would occur prior to construction of the access road.

The conceptual operations plan in the vicinity of any residential and/or commercial structure meets MOT requirements at this stage of the proposal. Detailed analysis would be required prior to facility installation and/or construction of residential and commercial structures. This could be managed through the standard permitting processes. MOT, as one of their legislated responsibilities, defines the access requirements for subdivision approvals. Where potential for natural hazard conditions exist, the applicant is required to conduct a detailed analysis to confirm the site is safe for its intended use before permitting is provided.

Natural hazard risk assessment would typically be completed at the time of subdivision or, where subdivision is not contemplated (as for Recreation Improvement leases, included a daylodge lease), at the building permit stage, if considered necessary. In this case, the land lease approval process, including the EA Act review process and the Master Plan review process, assessed avalanche risk and mitigation. MOT provides feedback in these processes, which it did – particularly during the Master Plan approval process that occurred after the issuance of the EA Certificate.

Common sense, MOT's feedback during the Master Plan process, the MDA, current legislation and regulations, and the EAO's stipulations, indicate that a snow safety plan must be in place before the start of operations or winter construction, and would be prepared based on detailed avalanche planning and mitigation. It is for this reason (the fact that we would be doing the work anyway) that we agree to undertake further engineering avalanche risk evaluations as described in your letter.

We disagree strongly, however, that this should be done to determine compliance with condition 36. The EAO has spoken clearly of its acceptance of the avalanche mapping submitted with the Project Report for the project and the buildings in question are outside of those mapped avalanche zones. To apply guidelines that were developed in the years following the issuance of the EA certificate, and which were never mentioned or cited prior to approval of the certificate, is a classic example of "shifting goalposts".

The *Guidelines for Snow Avalanche Risk Determination and Mapping in Canada* were only being developed at the tail end of the EA review process and therefore could not have been the generally accepted standard at the time the Project Specifications and Project Report were prepared. Nevertheless, a principle author of those guidelines was Peter Schaerer, one of the leading consultants for the project.

It is evident that the *Guidelines* establish different and much wider criteria for determining what is an avalanche zone than what was in place when Commitment #36 was drafted into the certificate. It is worth noting, however, that the *Guidelines* do recognize that it is typical for mountain resort infrastructure to be

located in avalanche zones (as is the case for numerous day lodges in BC, including Whitewater's), and that at the lift base "...return intervals of up to 100 years may be applied to initiate action. In practice this long return period risk to the base is usually managed by a closure plan to reduce the human exposure during periods of high avalanche hazard."

The avalanche mapping that is the basis of the project planning was never disputed before we did the work for this project last September and October, and in good faith we used the accepted avalanche mapping of the valley, the site conditions (particularly the evidence of the mature tree cover) and the reliance on well known avalanche mitigation techniques to locate the daylodge and the service building in adequately safe areas according to all available knowledge and in order to meet project deadlines.

Following the challenge by RK Heli-Ski Panorama we had expert opinions that there is no risk for the daylodge that cannot be adequately mitigated, and we confirmed that the building is near but not within reach of any historically recorded avalanche.

With regards to "substantial start", even in the absurd chance that the daylodge and service building foundations must be abandoned by provincial decision, one cannot deny or ignore their existence and the fact that they were placed in good faith according to approved avalanche mapping and were issued a land lease and a building permit by the approving authorities. The concrete in the ground is real and substantial, its location was determined and approved by multiple authorities, it is placed outside known avalanche paths, and its ultimate location was chosen to safeguard the environment (to avoid riparian zones).

Determining "substantial start" and compliance with commitment 36 are separate exercises. The "substantial start" determination is not based on a checklist or technicalities, as none exist. Instead, it is based on real evidence on the ground and the implementation of a master plan and business plan. Conversely, compliance with commitment 36 is a matter of risk and expense for the proponent (should the daylodge need to be moved again). Non-compliance does not void the fact that a significant amount of construction has occurred, and that it was done according to known hazards mapping and with the approval of both the Province and the Municipality.

Please note also that the permanent bridge accessing the resort site and the chairlift #1 location are not being disputed, so at least a substantial portion of the construction in place by October 12, 2014 is admitted as being in full compliance also by the opponents, and even if the daylodge location were to be condemned (something that we do not accept, but for example it could be temporarily dedicated to snowcat storage until the dispute is resolved), we did open access to the site and start a chairlift in compliance with all conditions and the deadline, and we could build a day lodge inside the resort village area after rezoning of the resort village site is done. Our construction start is in compliance even if the controversy about the daylodge is not resolved.

But the location of the daylodge must also be seen in light of the constraints of the permitting process under which construction start occurred. See the attached chronology of the permits process and the drawing of the portion of the valley that was zoned by August 2014.

The valley was only zoned in August 2014. Because site access was not available prior to that month, surveyors found a small stream and riparian area at the intended daylodge site and the building had to be relocated in September. The relocation could only occur in a zoned area and in previously approved land lease area due to time constraints.

A change in the land lease area or zoning would have required months, with new public hearings and consultations with First Nations, because the Jumbo Glacier Resort project continues to move forward as if it were a brand new application under the same rules of a project that did not have 24 years' of prior approval history.

So the only available area for construction start remained in the zone that is near past avalanche paths, but outside the avalanches, as shown in the approved master plan. The lease for the second location, and the building permit, were issued based on the approved master plan and the development rights under the Master Development Agreement.

The resort village is a completely different story, completely outside any potential future avalanche, and we could have relocated the day lodge there, but there was no zoning and land lease in place, so a building permit could not be issued.

The proximity of the day lodge to the mapped and historical avalanche area does not mean that it is in an existing avalanche hazard area and future potential risk can be mitigated with certainty, with even better understanding and techniques than in the past.

The daylodge was specifically "located completely outside the avalanche hazard area" based on the avalanche map approved by the Province following two comprehensive review processes. And there is no unreasonable risk to either people or the environment.

With kind regards,
Pheidias Project Management Corporation

Per: Oberto Oberti, Architect AIBC,
President

Cc: Tommaso Oberti
Paul Craven
Andrew Milne
Psyche Brown
Ralf Schwiede
Arnold Armstrong

OO/of

Pheidias

Jumbo Glacier Resort Permits Chronology

In order to provide context to the work undertaken to substantially start construction of Jumbo Glacier Resort, it is necessary to provide a chronology of the permits required by, and attained for the project. Despite the fact that the Environmental Assessment (EA) certificate was signed by the Ministers of the Province on October 12, 2004, permission to start construction was delayed for almost ten years by provincial and local government permitting requirements, allowing project opponents to work towards an "end-game" date to prevent compliance with the EA Act deadline that was instilled with the change in legislation in year 2002. The chronology is as follows:

1. Master Development Agreement (MDA) signed in March 2012, but nothing can be done without zoning and building permits.
2. On June 8th, 2012, Regional District of East Kootenay (RDEK) votes to request again (first vote was in 1996) that zoning be provided by a special purpose Mountain Resort Municipality.
3. The Minister signs the letters patent for the Jumbo Glacier Mountain Resort Municipality (JGMRM) on November 20, 2012.
4. The Ktunaxa Nation Council (KNC) launches a Petition to have the MDA cancelled on November 30th, 2012, and an Eco Society from Nelson threatens a Petition to have the JGMRM cancelled.
5. On February 19th, 2013, the JGMRM Council holds the first meeting.
6. JGMRM Council receives legal advice to delay zoning for the JGR project.
7. The JGMRM agrees to the request of GRL to start partial rezoning for the Farnham Glacier portion of the project, and holds a Public Hearing, on May 13, 2013.
8. Following the Public Hearing, on May 21st the JGMRM Council rezones part of the Farnham Creek drainage for a lodge and ski area operations.
9. Architectural and structural drawings for the lodge are prepared, and services and lifts are designed. Soil testing and start of construction are disrupted by a blockade.
10. The Farnham Glacier project is at high elevation and the window for construction is short. When soil testing finally resumes on September 30th, 2013 there are already two feet of snow on the ground.
11. The decision is made by Glacier Resorts Ltd. (GRL) to concentrate start of construction in the Jumbo Creek drainage, with easier access and longer construction time in the summer. Also the initial phase can be for year round operations, rather than summer only as at Farnham Glacier, and year round access will allow to better monitor the site and to limit options for vandalism (already experienced at Farnham).

12. Drawings and permit applications are negotiated for re-opening road access to the Jumbo Creek project site, which was closed by the Cranbrook office of the Ministry of Forestry, Lands and Resource Management Operations (FLMRO) in 2012 with a key bridge removal at km 15.8 (inside the Controlled Recreation Area and the municipal boundary) at the request of representatives of the KNC.
13. In view of the loss of bridge access, discussions with FLMRO and the engineering drawings concentrate on opening access through a reactivation of an older forestry road that accesses the project site from the north side, avoiding the installation of the bridge that was removed, and following the best access option outlined in the approved Master Plan.
14. The Ktunaxa Petition is heard in January 2014 and is dismissed on April 3rd, 2014. There is no advancement in the Petition against the JGMRM.
15. The JGMRM accepts that it will process an application for rezoning to permit construction of the first ski area facilities in the Jumbo Creek drainage.
16. Zoning application documents, and architectural and structural drawings for the buildings in the opening phase of the ski area in Jumbo Creek drainage are prepared and submitted.
17. The access option on the north side of Jumbo Creek is abandoned because of unanticipated time-consuming requirements to open First Nations consultations for the route alignment, to make Water Act notifications and to do more environmental (and potentially archaeological) studies before work can commence. There is no time left for this option.
18. Engineering work, environmental monitoring and bridge acquisitions are arranged to reopen access from the existing forestry road, in consultation with the offices of FLNRO.
19. A Public Hearing for the rezoning for the ski area and related facilities in the Jumbo Creek drainage is held by the JGMRM on August 6th, 2014.
20. On August 19th, 2014, Council of the JGMRM passes the first zoning by-law for the Jumbo Glacier Resort project in the Jumbo Creek drainage, limited to the ski area and related facilities in the upper Jumbo Creek drainage.
21. The freshet legal window for permits for the re-installation of bridges and the re-opening of road access opens on August 20th, 2014.
22. Access to the project site allows ground survey, which discovers the existence of a previously undetected stream and riparian area. This requires changes to the location and drawings of the Daylodge and of the Service Building. Drawings are changed and re-submitted for approval by the JGMRM.
23. Leitner Poma, the contractor for the lift system, enters the site in September in order to survey, engineer and begin construction of the first lift.
24. On September 24th 2014, a partial Building Permit for the Daylodge in Jumbo Creek is issued by the JGMRM.
25. On October 3rd, 2014 a partial Building Permit for the Service Building in Jumbo Creek is issued by the JGMRM.

26. On October 12th, 2014, the EA Office requires stop of construction, but by that time foundations of the key buildings have been placed, the foundations of the departure station of the first major chairlift are completed and road access restored with a permanent bridge.
27. Compliance with the EA certificate conditions has been achieved despite the obstacles.
28. The project is ready for completion of construction of an opening phase with a chairlift and a platter lift, previously acquired, and the necessary daylodge and service building. It is also ready for the construction of road access and the major gondola to Glacier Dome, completing the opening phase for day skiing, with an opening almost identical to the Kicking Horse Mountain Resort opening, but with higher elevations and glacier access.

Pizarro, Kirsten EAO:EX

From: Caul, Doug D ABR:EX
Sent: Monday, December 15, 2014 9:19 PM
To: Leake, Greg EAO:EX; Craven, Paul EAO:EX
Subject: Fwd: Google Alert - Jumbo + glacier

Doug Caul
Associate Deputy Minister
Environmental Assessment Office

Begin forwarded message:

From: Google Alerts <googlealerts-noreply@google.com>
Date: December 15, 2014 at 5:32:55 PM PST
To: doug.caul@gov.bc.ca
Subject: Google Alert - Jumbo + glacier



Jumbo + glacier

Daily update - December 16, 2014

NEWS

The Results Are In: No One Wants **Jumbo Glacier** Resort
Curbed Seattle

Over 1,400 people responded to our simple question, "Do you support **Jumbo Glacier** Resort?" and now, Curbediverse, the results are in. In Curbed ...

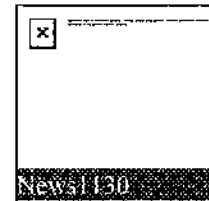
Jumbo Glacier Resort planners confident day lodge isn't being built in an avalanche

zone - News1130

Full Coverage



Flag as irrelevant



You have received this email because you have subscribed to **Google Alerts**.
[Unsubscribe](#)



Receive this alert as RSS feed

[Send Feedback](#)

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Sunday, December 14, 2014 9:39 AM
To: Caul, Doug D ABR:EX
Subject: RE: Google Alert - Jumbo + glacier

Thanks. All things considered, decent positioning.

From: Caul, Doug D EAO:EX
Sent: Sunday, December 14, 2014 9:11 AM
To: Craven, Paul EAO:EX
Subject: Fwd: Google Alert - Jumbo + glacier

Begin forwarded message:

From: Google Alerts <googlealerts-noreply@google.com>
Date: December 13, 2014 at 4:39:19 PM PST
To: doug.caul@gov.bc.ca
Subject: Google Alert - Jumbo + glacier



Jumbo + glacier

Daily update - December 14, 2014

NEWS

More delays for Jumbo Glacier ski resort

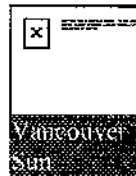
Vancouver Sun

VICTORIA — The B.C. government has delayed a decision on the future of the Jumbo Glacier ski resort as it seeks "greater clarity" on whether ...

More delays for Jumbo Glacier - Government stalls project, asks for updated avalanche study at site - Vancouver Sun
Full Coverage



Flag as irrelevant



You have received this email because you have subscribed to Google Alerts.
[Unsubscribe](#)



Receive this alert as RSS feed

[Send Feedback](#)

Pizarro, Kirsten EAO:EX

From: Caul, Doug D ABR:EX
Sent: Sunday, December 14, 2014 9:11 AM
To: Craven, Paul EAO:EX
Subject: Fwd: Google Alert - Jumbo + glacier

Begin forwarded message:

From: Google Alerts <googlealerts-noreply@google.com>
Date: December 13, 2014 at 4:39:19 PM PST
To: doug.caul@gov.bc.ca
Subject: Google Alert - Jumbo + glacier



Jumbo + glacier

Daily update - December 14, 2014

NEWS

More delays for Jumbo Glacier ski resort

Vancouver Sun

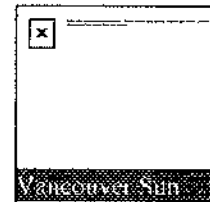
VICTORIA — The B.C. government has delayed a decision on the future of the Jumbo Glacier ski resort as it seeks "greater clarity" on whether ...

More delays for Jumbo Glacier - Government stalls project, asks for updated avalanche study at site - Vancouver Sun

Full Coverage



Flag as irrelevant



You have received this email because you have subscribed to **Google Alerts**.
[Unsubscribe](#)



[Receive this alert as RSS feed](#)

[Send Feedback](#)

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Saturday, December 13, 2014 10:04 AM
To: Caul, Doug D ABR:EX; Leake, Greg EAO:EX
Subject: FW: quote from oberti

Fyi. Not an unexpected response. Also quotes NDP.

Sent from my Windows Phone

From: Cousins, Autumn EAO:EX
Sent: 12/12/2014 10:42 PM
To: Craven, Paul EAO:EX
Subject: quote from oberti

<http://www.news1130.com/2014/12/12/jumbo-glacier-development-put-on-hold/>

Quote from the link above: "In a statement, company president Oberti Oberto says it's disappointed with the decision and that "the goalposts for the required studies never cease changing for this project." He says, for example, the guidelines for snow avalanche risk were only being developed at the end of the environmental review process, and therefore could not have been generally accepted standard at the time.

He also points out day lodges at other resorts are located in avalanche zones."

Pizarro, Kirsten EAO:EX

From: Caul, Doug D ABR:EX
Sent: Thursday, December 11, 2014 3:32 PM
To: Craven, Paul EAO:EX
Subject: Re: Jumbo Update and Materials

How about a heads up to Ktunaxa?

On Dec 11, 2014, at 9:35 AM, "Craven, Paul EAO:EX" <Paul.Craven@gov.bc.ca> wrote:

Doug,

We now have the all clear. Below are links to the final letters (there is also a letter to the Shuswap).

Attached are the **IN** and suggested response.

Autumn is giving a heads up to the Certificate Holder and then letters will follow (early afternoon) and be posted to EPIC today. I will circulate this package to ADMs (FLNRO; TRAN; MARR; CSCD). Greg will do the same on his end.

Paul

Letter from Autumn to O. Oberti re review of Condition 36 –

[I:\EAO\EAO_SHARED\Compliance\Operational \(ORCS\)\Environmental Assessment - Projects 30050-30700\Jumbo Glacier Resort \(30250-25 JUMBO\)\-21 Compliance Reports & Reviews\Correspondence\104869 Letter to OOberti re Condition 36 Dec2014.docx](#)

Letter from Paul to O. Oberti re Substantial Start

[I:\EAO\EAO_SHARED\000Projects\z COMPLETED OR CERTIFIED\Jumbo\Post Certificate\Substantially Started Documentation\EAO Generated\104870 Letter to OOberti Dec2014.docx](#)

Letter from Paul to Bill Green re Substantial Start

[I:\EAO\EAO_SHARED\000Projects\z COMPLETED OR CERTIFIED\Jumbo\Post Certificate\Substantially Started Documentation\EAO Generated\104871 Letter to KNC Dec2014.docx](#)

From: Leake, Greg EAO:EX

Sent: Thursday, December 11, 2014 8:53 AM

To: Craven, Paul EAO:EX

Subject: Jumbo

Greg Leake

Director

Client Communications & Engagement

BC Environmental Assessment Office

(250) 387-2470

Pizarro, Kirsten EAO:EX

From: Caul, Doug D ABR:EX
Sent: Thursday, December 11, 2014 12:14 PM
To: Craven, Paul EAO:EX
Cc: Lewthwaite, Jennifer EAO:EX; Kennedy, Karla; Leake, Greg EAO:EX
Subject: Re: Jumbo Update and Materials

Good and thanks. As discussed - End of day plse.
Dc

Doug Caul
Associate Deputy Minister
Environmental Assessment Office

On Dec 11, 2014, at 9:35 AM, "Craven, Paul EAO:EX" <Paul.Craven@gov.bc.ca> wrote:

Doug,
We now have the all clear. Below are links to the final letters (there is also a letter to the Shuswap).
Attached are the IN and suggested response.
Autumn is giving a heads up to the Certificate Holder and then letters will follow (early afternoon) and
be posted to EPIC today. I will circulate this package to ADMs (FLNRO; TRAN; MARR; CSCD). Greg will do
the same on his end.
Paul

Letter from Autumn to O. Oberti re review of Condition 36 –

[I:\EAO\EAO_SHARED\Compliance\Operational \(ORCS\)\Environmental Assessment - Projects 30050-30700\Jumbo Glacier Resort \(30250-25 JUMBO\)\-21 Compliance Reports & Reviews\Correspondence\104869 Letter to OOberti re Condition 36 Dec2014.docx](#)

Letter from Paul to O. Oberti re Substantial Start

[I:\EAO\EAO_SHARED\000Projects\z COMPLETED OR CERTIFIED\Jumbo\Post Certificate\Substantially Started Documentation\EAO Generated\104870 Letter to OOberti Dec2014.docx](#)

Letter from Paul to Bill Green re Substantial Start

[I:\EAO\EAO_SHARED\000Projects\z COMPLETED OR CERTIFIED\Jumbo\Post Certificate\Substantially Started Documentation\EAO Generated\104871 Letter to KNC Dec2014.docx](#)

From: Leake, Greg EAO:EX
Sent: Thursday, December 11, 2014 8:53 AM
To: Craven, Paul EAO:EX
Subject: Jumbo
Greg Leake
Director
Client Communications & Engagement
BC Environmental Assessment Office
(250) 387-2470

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Thursday, December 11, 2014 9:36 AM
To: Caul, Doug D ABR:EX
Cc: Lewthwaite, Jennifer EAO:EX; Kennedy, Karla; Leake, Greg EAO:EX
Subject: Jumbo Update and Materials
Attachments: IN_EAO_Jumbo Glacier Resort avalanche and Sub Start_10Dec2014.doc;
SuggResp_Jumbo_Avalanche_Issue-10Dec14.docx

Doug,

We now have the all clear. Below are links to the final letters (there is also a letter to the Shuswap). Attached are the IN and suggested response.

Autumn is giving a heads up to the Certificate Holder and then letters will follow (early afternoon) and be posted to EPIC today. I will circulate this package to ADMs (FLNRO; TRAN; MARR; CSCD). Greg will do the same on his end.

Paul

Letter from Autumn to O. Oberti re review of Condition 36 --

I:\EAO\EAO_SHARED\Compliance\Operational (ORCS)\Environmental Assessment - Projects 30050-30700\Jumbo Glacier Resort (30250-25 JUMBO)\-21 Compliance Reports & Reviews\Correspondence\104869 Letter to OOberti re Condition 36 Dec2014.docx

Letter from Paul to O. Oberti re Substantial Start

I:\EAO\EAO_SHARED\000Projects\z COMPLETED OR CERTIFIED\Jumbo\Post Certificate\Substantially Started Documentation\EAO Generated\104870 Letter to OOberti Dec2014.docx

Letter from Paul to Bill Green re Substantial Start

I:\EAO\EAO_SHARED\000Projects\z COMPLETED OR CERTIFIED\Jumbo\Post Certificate\Substantially Started Documentation\EAO Generated\104871 Letter to KNC Dec2014.docx

From: Leake, Greg EAO:EX
Sent: Thursday, December 11, 2014 8:53 AM
To: Craven, Paul EAO:EX
Subject: Jumbo

Greg Leake
Director

Client Communications & Engagement
BC Environmental Assessment Office
(250) 387-2470

JUMBO GLACIER RESORT: AVALANCHE CONCERNS

- In November, a question was raised as to whether the locations of the day lodge and service building were in an avalanche zone.
- Previously submitted reports, as well as the fact that they removed trees that were over 100 years old from around the day lodge site, led staff to conclude that the day lodge is in an area that appears to be outside of an avalanche zone.
- However, the company provided updated information in December, which states that while “no damaging avalanche has reached the lodge site, a larger one than had occurred in the past or an avalanche with an irregular flow direction could hit the lodge”. The information also outlines possible options for mitigation.
- Given the proximity of the building sites to historical avalanche paths, compliance staff from the Environmental Assessment Office have asked the company to provide an engineering avalanche risk evaluation. We believe this is the prudent thing to do.
- An engineering avalanche risk evaluation is a risk assessment tool that considers factors like frequency, predicted impact pressures and destructive potential of avalanches.
- Once we have that risk evaluation, we will be in a position to confirm whether the location of the day lodge and service building meet the condition for ensuring that “all commercial and residential buildings are completely outside of the avalanche hazard area”.

Background:

- The \$900 million project is a year-round ski resort in the Jumbo Creek Valley, 55 km west of Invermere. The project would provide up to 6,250 bed-units, including 750 for staff, and would create 3,750 person-years of construction employment and 750-800 permanent full-time jobs.
- The company, Glacier Resorts Ltd, was issued an environmental assessment (EA) certificate on October 12, 2004.
- The Environmental Assessment Office (EAO) granted a five-year, one-time only extension to the certificate in 2009.
- The EAO is working with the Ministry of Forests, Lands and Natural Resource Operations in compliance oversight of EA conditions, the Master Development Agreement and other authorizations. The company began construction in late August 2014. Compliance and enforcement staff inspected the project site daily during the final week of construction in October. Government agencies have conducted 14 site visits and inspections since the end of July 2014.
- On October 3, 2014, the EAO wrote to the company, the Ktunaxa Nation Council and the Shuswap Indian Band outlining the process to determine whether the project has been “substantially started”.
- Based on the recent complaints and information reviewed during compliance oversight, the EAO Compliance and Enforcement team is in the process of determining whether the day lodge and service building locations are in compliance with condition 36 of the project’s EA certificate. Condition 36 states that “residential and commercial structures will be located completely outside the avalanche hazard area.”
- The term “avalanche hazard area” is not defined in the EA certificate; however, we understand the *Guidelines for Snow Avalanche Risk Determination and Mapping in Canada* from the Canadian Avalanche Association (Guidelines) set out the generally accepted standard for evaluating avalanche risk.
- On December 11, 2014, the EAO sent letters to the company advising of the compliance review of condition 36 and describing the delay in the substantial start determination process. The EAO also sent letters to Ktunaxa Nation Council and the Shuswap Indian Band advising of the updated substantial start process.
- The company conducted avalanche studies during the EA and master planning process. The company provided updated information in November 2014 which states that while “no damaging avalanche has reached the lodge site, a larger one than had occurred in the past or an avalanche with an irregular flow direction could hit the lodge”. The report outlines possible options for mitigation. Additional information is required from the company to ensure compliance with condition 36
- The EAO’s view, based on advice from the Ministry of Transportation and Infrastructure, is that the company requires an engineering avalanche risk evaluation with a zoning plan consistent with the Guidelines to ensure the locations of any commercial and residential buildings are compliant with condition 36.

Communications Contact:	Greg Leake	250-387-2470
Program Contact:	Paul Craven	250-387-6748
Compliance Contact:	Autumn Cousins	250-888-2020

Jumbo Avalanche Issue
Suggested Response
December 10, 2014

When you were asked in October about whether the Jumbo Resort was being built in an avalanche zone, you said "no". What has changed?

- I said in November that the day lodge is in an area that appears to be outside of an avalanche zone.
- That was supported by previously submitted reports, as well as the fact that they removed trees that were over 100 years old from around the day lodge site.
- Jumbo Resort's environmental assessment certificate contains a condition requiring that "all commercial and residential buildings are completely outside of the avalanche hazard area".
- The Environmental Assessment Office received a complaint from RK Heli-Ski that the siting of the Jumbo day lodge and service buildings is in contravention of the certificate condition.
- RK Heli-Ski's complaint was also raised by the Ktunaxa Nation Council in their submission to the Environmental Assessment Office on the question of whether the project has been substantially started.
- Subsequently, Jumbo Glacier Resort provided new information on this issue.
- It says that "though no damaging avalanche has reached the Lodge site, a larger one than had occurred in the past or an avalanche with an irregular flow direction could hit the Lodge."
- It also says that there may be options for mitigation of that risk.
- Given the proximity of the building sites to historical avalanche paths, compliance staff from the Environmental Assessment Office have asked the company to provide an engineering avalanche risk evaluation.
- An engineering avalanche risk evaluation is a risk assessment tool that considers factors like frequency, predicted impact pressures and destructive potential of avalanches.
- Once we have that risk evaluation, we will be in a position to confirm whether the locations of the day lodge and service building meet the certificate condition for ensuring that "all commercial and residential buildings are completely outside of the avalanche hazard area".

What impact does this have on the question of whether the project has been "substantially started"?

- Environmental Assessment Office staff originally anticipated completing the report to support the "substantially started" determination in early December. Although the impact, if any, on the "substantially started" question has not been determined, it

would prudent to wait until there is greater clarity on the compliance status before proceeding.

- After compliance staff from the Environmental Assessment Office receive the engineering avalanche risk evaluation and confirm whether the locations of the day lodge and service building meet the certificate condition, staff will finalize the “substantially started” report for my consideration.
- The Environmental Assessment Office has developed a thorough and transparent process for compiling all of the relevant information to inform the “substantially started” decision.
- It includes gathering information from the company and First Nations and allowing each to comment on the other’s information. That stage ends when the Environmental Assessment Office provides me with a report for consideration.

Pizarro, Kirsten EAO:EX

From: Caul, Doug D ABR:EX
Sent: Wednesday, December 10, 2014 3:10 PM
To: Craven, Paul EAO:EX
Cc: Leake, Greg EAO:EX
Subject: Re: Jumbo Avalanche Condition

I just talked to Norm. He doesn't know what the issue is.

Doug Caul
Associate Deputy Minister
Environmental Assessment Office

On Dec 10, 2014, at 2:48 PM, "Craven, Paul EAO:EX" <Paul.Craven@gov.bc.ca> wrote:

I could call Norman/Gary and find out where this is coming from. I have not heard anything from them suggesting any other course of action and of course they were at the briefing....

From: Leake, Greg EAO:EX
Sent: Wednesday, December 10, 2014 1:46 PM
To: Caul, Doug D EAO:EX
Cc: Craven, Paul EAO:EX
Subject: FW: Jumbo Avalanche Condition

Doug:
You may want to consider an intervention.
G.

From: Gleeson, Kelly T GCPE:EX
Sent: Wednesday, December 10, 2014 1:44 PM
To: Sweeney, Neil PREM:EX; Fraser, John Paul GCPE:EX
Cc: Thomas, Vivian P GCPE:EX; Crebo, David GCPE:EX; Leake, Greg EAO:EX; Southern, Evan PREM:EX
Subject: FW: Jumbo Avalanche Condition

We are chasing our tails here
There is a disconnect between EAO (which has briefed Minister Polak and she is onside with approach laid out by Greg) and FLNRO program staff which disagree
Some initial messaging has been prepared – but the obvious secondary questions have not been answered because FLNRO program staff appear to fundamentally agree. (why decide now to review? Wasn't Minister Polak clear when initially asked about this issue several weeks ago? What has occurred since that would give you reason to review this further?)
This needs to get sorted at level beyond comms.

Kelly Gleeson
Communications and Media Relations
GCPE
(250) 356-8608
Kelly.gleeson@gov.bc.ca

From: Leake, Greg EAO:EX
Sent: Tuesday, December 9, 2014 11:25 AM
To: Thomas, Vivian P GCPE:EX; Crebo, David GCPE:EX
Cc: Gleeson, Kelly T GCPE:EX; Leslie, Lisa GCPE:EX; Bicknell, Liz M GCPE:EX; Rhodes, Gillian GCPE:EX
Subject: Jumbo Avalanche Condition

Vivian and Dave:

Just a heads up that we are going to be sending a letter to the company today (and posting it on our website) telling them that we do not have sufficient information to determine if the day lodge and service building sites are in compliance with the EA certificate condition requiring that all commercial and residential buildings are completely outside of the avalanche hazard area. We are requiring the company to provide an avalanche zoning plan conducted by a professional engineer in good standing with the Association of Professional Engineers and Geoscientists British Columbia and with professional member status with the Canadian Avalanche Association, consistent with MOTI policy.

We are also sending the company a second letter (with a version going to the Ktunaxa Nation Council and the Shuswap Indian Band) advising them that until we have completed our investigation into the siting of the buildings, we will not be proceeding with the substantially-started determination as there may be implications for the minister's decision.

Viv – the folks in the Mountain Resorts Branch are aware of this.

I've attached our IN.

G.

Greg Leake

Director

Client Communications & Engagement

BC Environmental Assessment Office

(250) 387-2470

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Wednesday, December 10, 2014 2:49 PM
To: Leake, Greg EAO:EX; Caul, Doug D ABR:EX
Subject: RE: Jumbo Avalanche Condition

I could call Norman/Gary and find out where this is coming from. I have not heard anything from them suggesting any other course of action and of course they were at the briefing....

From: Leake, Greg EAO:EX
Sent: Wednesday, December 10, 2014 1:46 PM
To: Caul, Doug D EAO:EX
Cc: Craven, Paul EAO:EX
Subject: FW: Jumbo Avalanche Condition

Doug:

You may want to consider an intervention.

G.

From: Gleeson, Kelly T GCPE:EX
Sent: Wednesday, December 10, 2014 1:44 PM
To: Sweeney, Neil PREM:EX; Fraser, John Paul GCPE:EX
Cc: Thomas, Vivian P GCPE:EX; Crebo, David GCPE:EX; Leake, Greg EAO:EX; Southern, Evan PREM:EX
Subject: FW: Jumbo Avalanche Condition

We are chasing our tails here

There is a disconnect between EAO (which has briefed Minister Polak and she is onside with approach laid out by Greg) and FLNRO program staff which disagree

Some initial messaging has been prepared – but the obvious secondary questions have not been answered because FLNRO program staff appear to fundamentally agree. (why decide now to review? Wasn't Minister Polak clear when initially asked about this issue several weeks ago? What has occurred since that would give you reason to review this further?)

This needs to get sorted at level beyond comms.

Kelly Gleeson
Communications and Media Relations
GCPE
(250) 356-8608
Kelly.gleeson@gov.bc.ca

From: Leake, Greg EAO:EX
Sent: Tuesday, December 9, 2014 11:25 AM
To: Thomas, Vivian P GCPE:EX; Crebo, David GCPE:EX

Cc: Gleeson, Kelly T GCPE:EX; Leslie, Lisa GCPE:EX; Bicknell, Liz M GCPE:EX; Rhodes, Gillian GCPE:EX

Subject: Jumbo Avalanche Condition

Vivian and Dave:

Just a heads up that we are going to be sending a letter to the company today (and posting it on our website) telling them that we do not have sufficient information to determine if the day lodge and service building sites are in compliance with the EA certificate condition requiring that all commercial and residential buildings are completely outside of the avalanche hazard area. We are requiring the company to provide an avalanche zoning plan conducted by a professional engineer in good standing with the Association of Professional Engineers and Geoscientists British Columbia and with professional member status with the Canadian Avalanche Association, consistent with MOTI policy.

We are also sending the company a second letter (with a version going to the Ktunaxa Nation Council and the Shuswap Indian Band) advising them that until we have completed our investigation into the siting of the buildings, we will not be proceeding with the substantially-started determination as there may be implications for the minister's decision.

Viv – the folks in the Mountain Resorts Branch are aware of this.

I've attached our IN.

G.

Greg Leake
Director
Client Communications & Engagement
BC Environmental Assessment Office
(250) 387-2470

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Wednesday, December 10, 2014 2:42 PM
To: Leake, Greg EAO:EX
Cc: Caul, Doug D ABR:EX
Subject: SuggResp_Jumbo_Avalanche_Issue-09Dec14 (4).docx
Attachments: SuggResp_Jumbo_Avalanche_Issue-09Dec14 (4).docx

One small change in the attached.

Paul

Page 131 to/à Page 134

Withheld pursuant to/removed as

DUPLICATE

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Tuesday, December 9, 2014 10:29 AM
To: Hancock, Tom BRDO:EX
Cc: Caul, Doug D ABR:EX; Leake, Greg EAO:EX
Subject: IN Jumbo Substantially Started
Attachments: IN_EAO_Jumbo Glacier Resort avalanche and Sub Start_08Dec2014 (2).doc

Tom,

Here is the IN regarding next steps on substantially started and the implications of the compliance investigation re: avalanche. Letters will be going out to the company and the FN today. I will send you copies of the signed letters after they go. We will be in touch with the company in advance of sending letter. Greg is circulating to the communications. FLNRO, CSCD, MOTI and MARR have been given a copy at the ADM level. Let me know if you need anything further.

Paul

**JUMBO GLACIER RESORT: RELATIONSHIP OF
AVALANCHE CONCERNS TO THE SUBSTANTIAL
START DETERMINATION**

- The Jumbo Glacier Resort must have been substantially started as of October 12, 2014. If it is determined that the project was not substantially started, then the Environmental Assessment Certificate will expire.
- A question has been raised as to whether the locations of the day lodge and service building meet avalanche requirements in the environmental assessment certificate. The Environmental Assessment Office is investigating.
- It is prudent to wait until there is greater clarity on the compliance status before proceeding with the decision on whether the project has been substantially started.
- The impact, if any, of a potential non-compliance with avalanche requirements on the substantially started question has not been determined.

Background:

- The \$900 million project is a year-round ski resort in the Jumbo Creek Valley, 55 km west of Invermere. The project would provide up to 6,250 bed-units, including 750 for staff, and would create 3,750 person-years of construction employment and 750-800 permanent full-time jobs.
- The company, Glacier Resorts Ltd, was issued an environmental assessment (EA) certificate on October 12, 2004.
- The Environmental Assessment Office (EAO) granted a five-year, one-time only extension to the certificate in 2009.
- The EAO is working with the Ministry of Forests, Lands and Natural Resource Operations in compliance oversight of EA conditions, the Master Development Agreement and other authorizations. Compliance and enforcement staff inspected the project site daily during the final week of construction in October. Government agencies have conducted 14 site visits and inspections since the end of July 2014.
- The company began construction in late August 2014.
- On October 3, 2014, the EAO wrote to the company, the Ktunaxa Nation Council and the Shuswap Indian Band outlining the process to determine whether the project has been “substantially started”.
- Based on the recent complaints and information, the EAO Compliance and Enforcement team is investigating to determine whether the day lodge and service building locations are in compliance with condition 36 of the project’s EA certificate. Condition 36 states that “residential and commercial structures will be located completely outside the avalanche hazard area.”
- Although the company conducted avalanche studies during the EA and master planning process, additional work is required by the company to ensure compliance with condition 36. The company provided updated information in November 2014 which states that while “no damaging avalanche has reached the lodge site, a larger one than had occurred in the past or an avalanche with an irregular flow direction could hit the lodge”. The report outlines possible options for mitigation.
- The term “avalanche hazard area” is not defined in the EA certificate; however, we understand the *Guidelines for Snow Avalanche Risk Determination and Mapping in Canada* from the Canadian Avalanche Association (Guidelines) set out the generally accepted standard for evaluating avalanche risk.
- The EAO’s view, based on advice from the Ministry of Transportation and Infrastructure, is that the company requires a zoning plan consistent with the Guidelines to ensure the locations of any commercial and residential buildings are compliant with condition 36. The EAO’s understanding is that this plan has not yet been developed by the company.
- On December 9, 2014, the EAO sent letters to the company requiring them to submit an avalanche zoning plan and describing the delay in the substantial start determination process. The EAO also sent letters to Ktunaxa Nation Council and the Shuswap Indian Band advising of the updated substantial start process.

Communications Contact:	Greg Leake	250-387-2470
Program Contact:	Paul Craven	250-387-6748
Compliance Contact:	Autumn Cousins	250-888-2020

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Tuesday, December 9, 2014 10:10 AM
To: Leake, Greg EAO:EX; Cousins, Autumn EAO:EX
Cc: Caul, Doug D ABR:EX
Subject: Final IN - Jumbo

Final note for circulation. Greg is sending around to communications folks. I will send to ADMs and Tom. Letters are being formatting.

\\\\Level\\s40002\\EAO\\EAO_SHARED\\BRIEFING NOTES\\2014\\Issues Notes\\IN EAO Jumbo Glacier Resort avalanche and Sub Start_08Dec2014 (2).doc

Thanks all,

Paul

Pizarro, Kirsten EAO:EX

From: Caul, Doug D ABR:EX
Sent: Monday, December 8, 2014 3:47 PM
To: Craven, Paul EAO:EX
Cc: Lewthwaite, Jennifer EAO:EX; Leake, Greg EAO:EX; Kennedy, Karla; Lewthwaite, Jennifer EAO:EX
Subject: Re: FOR REVIEW: Jumbo Draft Letters

These are all good to go as soon as we have an IN in place. Thanks Paul.

DC

> On Dec 8, 2014, at 8:33 AM, "Craven, Paul EAO:EX" <Paul.Craven@gov.bc.ca> wrote:
>
> Hi Doug,
>
> Here are the draft letters for your review. 1 letter from C & E compliance re: condition 36. 2 letters from me re: substantially started (certificate holder and KNC (a similar letter will be drafted for the Shuswap). I will be sharing with Transportation, FLNRO, JAG as well today.
>
> Paul
>
>
>
> <draft letter re compliance.docx>
> <draft ss letter.docx>
> <draft ss letter knc.docx>

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Monday, December 8, 2014 9:06 AM
To: Leake, Greg EAO:EX
Cc: Cousins, Autumn EAO:EX
Subject: RE: FOR REVIEW: Jumbo Draft Letters

Yes -- that is better. Yes just requesting the zoning plan.

From: Leake, Greg EAO:EX
Sent: Monday, December 8, 2014 9:05 AM
To: Craven, Paul EAO:EX
Cc: Cousins, Autumn EAO:EX
Subject: RE: FOR REVIEW: Jumbo Draft Letters

In the compliance letter, one finds the following:

As noted in the "Land Managers Guide to Snow Avalanche Hazards in Canada" by the Canadian Avalanche Association, the BC Ministry of Transportation and Infrastructure policy recommends that the zoning plan be conducted by a professional engineer...

We appear to be citing the Cdn. Avalanche Assoc. on what provincial policy is. Shouldn't we just say: "The BC Ministry of Transportation and Infrastructure policy recommends..."?

And a question. Is the zoning plan all that we are requesting in this letter?

G.

From: Craven, Paul EAO:EX
Sent: Monday, December 8, 2014 8:49 AM
To: Leake, Greg EAO:EX
Cc: Cousins, Autumn EAO:EX
Subject: FW: FOR REVIEW: Jumbo Draft Letters

FYI. If all goes well, we may be in a position to get these out today. Which means we need to conclude on IN today as well. I am right that the IN is with you Autumn?

From: Craven, Paul EAO:EX
Sent: Monday, December 8, 2014 8:33 AM
To: Caul, Doug D EAO:EX
Cc: Lewthwaite, Jennifer EAO:EX
Subject: FOR REVIEW: Jumbo Draft Letters

Hi Doug,

Here are the draft letters for your review. 1 letter from C & E compliance re: condition 36. 2 letters from me re: substantially started (certificate holder and KNC (a similar letter will be drafted for the Shuswap). I will be sharing with Transportation, FLNRO, JAG as well today.

Paul

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Monday, December 8, 2014 9:00 AM
To: Cousins, Autumn EAO:EX
Subject: RE: FOR REVIEW: Jumbo Draft Letters

I will send to the ADMs.

From: Cousins, Autumn EAO:EX
Sent: Monday, December 8, 2014 8:57 AM
To: Craven, Paul EAO:EX
Subject: RE: FOR REVIEW: Jumbo Draft Letters

Looks good. FYI I have not coordinated with MRB or MOTI re: this letter. Let me know if you are advising those agencies (and seeking their input?) or if I should.

From: Craven, Paul EAO:EX
Sent: Monday, December 8, 2014 8:49 AM
To: Leake, Greg EAO:EX
Cc: Cousins, Autumn EAO:EX
Subject: FW: FOR REVIEW: Jumbo Draft Letters

FYI. If all goes well, we may be in a position to get these out today. Which means we need to conclude on IN today as well. I am right that the IN is with you Autumn?

From: Craven, Paul EAO:EX
Sent: Monday, December 8, 2014 8:33 AM
To: Cauli, Doug D EAO:EX
Cc: Lewthwaite, Jennifer EAO:EX
Subject: FOR REVIEW: Jumbo Draft Letters

Hi Doug,

Here are the draft letters for your review. 1 letter from C & E compliance re: condition 36. 2 letters from me re: substantially started (certificate holder and KNC (a similar letter will be drafted for the Shuswap). I will be sharing will Transportation, FLNRO, JAG as well today.

Paul

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Monday, December 8, 2014 8:48 AM
To: Leake, Greg EAO:EX
Cc: Cousins, Autumn EAO:EX
Subject: FW: FOR REVIEW: Jumbo Draft Letters
Attachments: draft ss letter.docx; draft ss letter knc.docx; draft letter re compliance.docx

FYI. If all goes well, we may be in a position to get these out today. Which means we need to conclude on IN today as well. I am right that the IN is with you Autumn?

From: Craven, Paul EAO:EX
Sent: Monday, December 8, 2014 8:33 AM
To: Caul, Doug D EAO:EX
Cc: Lewthwaite, Jennifer EAO:EX
Subject: FOR REVIEW: Jumbo Draft Letters

Hi Doug,

Here are the draft letters for your review. 1 letter from C & E compliance re: condition 36. 2 letters from me re: substantially started (certificate holder and KNC (a similar letter will be drafted for the Shuswap). I will be sharing will Transportation, FLNRO, JAG as well today.

Paul



File: 30250-25/JUMBO-18

Ref:

DRAFT FOR INITIAL DISCUSSION

DATE

SENT VIA EMAIL

Mr. Oberto Oberti
Glacier Resorts Ltd.
c/o Pheidias Project Management Corporation .
660 – 1188 West Georgia Street
Vancouver, BC V6E 4A2
ooberti@obertiarchitecture.com

Dear Mr. Oberti:

As you know, the Environmental Assessment Office (EAO) is reviewing information to support the Minister of Environment's determination regarding if the Jumbo Glacier Resort was substantially started as of the potential expiry date of the environmental assessment (EA) certificate.

One of the issues raised in relation to the substantial start determination is whether the day lodge and service building sites are 'completely outside of the avalanche hazard area' as required by condition 36 of the EA certificate. EAO Compliance and Enforcement (C&E) recently sent you a letter requesting further information from you to inform the determination of the compliance status of that condition.

EAO originally anticipated completing the report to support the Minister's determination in early December. Although the impact, if any, of potential non-compliance with condition 36 on the substantially started question has not been determined, it would prudent to wait until there is greater clarity on the compliance status before proceeding.

After EAO C&E receives the required avalanche information and concludes the compliance status of condition 36, EAO will finalize the substantial start report to support the Minister. As noted in my letter to you of October 3, 2014, EAO will provide

Environmental
Assessment
Office

Mailing Address:
PO Box 9426 Stn Prov Govt
Victoria BC V8W 9V1

Location:
1st & 2nd Fl – 836 Yates Street
Victoria BC V8W 1L8

you with a copy of the report prior to it providing it to the Minister as the statutory decision maker.

Please contact me if you have any questions regarding this letter or the substantial start determination process.

Yours truly,

DRAFT FOR DISCUSSION PURPOSES ONLY

Paul Craven
Executive Director of Policy and Quality Assurance

Enclosure(s)/attachment(s) *if applicable*

cc: Name, Title
 Organization
 email address *if needed



File: 30250-25/JUMBO-18

Ref:

DRAFT FOR INITIAL DISCUSSION

DATE

SENT VIA EMAIL

Bill Green (and another letter to SIB)

Dear Mr. Green:

As you know, the Environmental Assessment Office (EAO) is reviewing information to support the Minister of Environment's determination whether the Jumbo Glacier Resort (Project) was substantially started as of the potential expiry date of the environmental assessment (EA) certificate. One of the issues raised in relation to the substantial start determination is whether the day lodge and service building sites are 'completely outside of the avalanche hazard area' as required by condition 36 of the EA certificate.

EAO Compliance and Enforcement (C&E) is investigating whether the Project is compliant with condition 36.

Although the impact, if any, of potential non-compliance with condition 36 on the substantially started question has not been determined, I believe it would prudent to wait until there is greater clarity on the compliance status before proceeding. Accordingly, the substantially started determination will be delayed.

After EAO C&E concludes the compliance status of the condition, EAO will finalize the substantial start report to support the Minister. As noted in my letter to you of October 3, 2014, EAO will provide you with a copy of the report prior to it providing it to the Minister as the statutory decision maker.

Please contact me if you have any questions regarding this letter or the substantial start determination process.

Environmental
Assessment
Office

Mailing Address:
PO Box 9426 Stn Prov Govt
Victoria BC V8W 9V1

Location:
1st & 2nd Fl – 836 Yates Street
Victoria BC V8W 1L8

Yours truly,

DRAFT FOR DISCUSSION PURPOSES ONLY

Paul Craven
Executive Director of Policy and Quality Assurance

Enclosure(s)/attachment(s) *If applicable*

cc: Name, Title
 Organization
 email address *if needed



File: 30250-25/JUMBO-21

Ref:

DRAFT FOR DISCUSSION PURPOSES

DATE

SENT VIA EMAIL

Mr. Oberto Oberti
Glacier Resorts Ltd.
c/o Pheidias Project Management Corporation .
660 – 1188 West Georgia Street
Vancouver, BC V6E 4A2
ooberti@obertiarchitecture.com

Dear Mr. Oberti:

As you are aware, concerns have been raised whether the foundations for the day lodge and the service building recently constructed by Glacier Resorts Ltd are in compliance with condition 36 of the environmental assessment (EA) certificate for the Jumbo Glacier Resort (Project). Condition 36 states that "residential and commercial structures will be located completely outside the avalanche hazard area." Based on the recent complaints and information reviewed through compliance oversight, Environmental Assessment Office (EAO) Compliance and Enforcement (C&E) is investigating to determine whether the day lodge and service building locations meet the requirements of condition 36.

Thank you for the information you have provided from Peter Schaerer in particular the "Snow Avalanche Hazards at Jumbo Glacier Resort" report dated 26 November 2014 (Report). In the Report, Mr. Schaerer states that 'a larger [avalanche] than had occurred in the past or an avalanche with an irregular flow direction could hit the Lodge' and "When the Lodge is built, it will be essential to prevent the formation of large avalanches." We note that Mr. Schaerer's Report does not specifically address the location of the service building. He concludes that avalanche control by explosives must be applied at the Wolverine/Pink Panther avalanche path near the Day Lodge and be supported by trained personnel and a snow safety plan. These statements and others in the Report indicate that the day lodge location may be subject to a risk of avalanche and that there may be options for mitigation. The Report recommends

Environmental
Assessment
Office

Mailing Address:
PO Box 9426 Stn Prov Govt
Victoria BC V8W 9V1

Location:
1st & 2nd Fl – 836 Yates Street
Victoria BC V8W 1L8

further study noting that the conclusions of the Report may not be accurate due to incomplete observational data.

The term "avalanche hazard area" is not defined in the EA certificate; however, we understand the Guidelines for Snow Avalanche Risk Determination and Mapping in Canada from the Canadian Avalanche Association (Guidelines) set out the generally accepted standard for evaluating avalanche risk.

The Guidelines state that, "(t)here are two classes of occupied structures: residential and other permanently occupied structures; and industrial plant and temporarily occupied structures. Both classes require a zoning plan based on a combination of expected impact pressures and return periods of avalanches."

Given the proximity of the building sites to historical avalanche paths and based on the Guidelines, Mr. Schaerer's Report and advice from government subject matter experts, we have concluded that we do not yet have sufficient information to determine if the day lodge and service building sites are in compliance with condition 36.

EAO's view is that Glacier Resorts Ltd requires a zoning plan consistent with the Guidelines to ensure the locations of any commercial and residential buildings are compliant with condition 36. As noted in the "Land Managers Guide to Snow Avalanche Hazards in Canada" by the Canadian Avalanche Association, the BC Ministry of Transportation and Infrastructure policy recommends that the zoning plan be conducted by a professional engineer (P.Eng.) in good standing with the Association of Professional Engineers and Geoscientists British Columbia in addition to professional member status with the Canadian Avalanche Association.

EAO C&E's understanding is that Glacier Resorts Ltd does not currently have a zoning plan; however, if we are incorrect and a zoning plan has been prepared, please provide it to us to inform our investigation. If the required zoning plan has not been completed, please provide one as soon as practicable.

Please note that while EAO is currently investigating if the day lodge and service building locations are compliant with condition 36, Glacier Resorts Ltd is responsible for ensuring that 'all commercial and residential buildings are completely outside of the avalanche hazard area'.

If you have additional information to inform EAO C&E's investigation into condition 36, please provide it to eao.compliance@gov.bc.ca.

Yours truly,

DRAFT FOR DISCUSSION PURPOSES ONLY

Autumn Cousins
Manager, Policy and Compliance

Enclosure(s)/attachment(s) *If applicable*

cc: Name, Title
 Organization
 email address *if needed

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Wednesday, December 3, 2014 5:19 PM
To: Caul, Doug D ABR:EX
Subject: FW: Peter Schaerer's review of the RK Heli-ski attacks to the JGR project
Attachments: Peter Schaerer - Jumbo Glacier Resort Avalanches Nov 2014.pdf

This is the first time we got the report – December 1, 2014 at 6:26. Autumn sent it to Transportation the following morning (to Mike B).

Whether FLNRO had it before then I don't know.

Paul

From: Cousins, Autumn EAO:EX
Sent: Monday, December 1, 2014 7:53 PM
To: Craven, Paul EAO:EX
Subject: FW: Peter Schaerer's review of the RK Heli-ski attacks to the JGR project

Sent from my Windows Phone

From: Oberto Oberti
Sent: 2014-12-01 6:36 PM
To: Brown, Psyche FLNR:EX
Cc: Humphrey, Gordon J FLNR:EX; Cousins, Autumn EAO:EX; Milne, Andrew EAO:EX; Mark Read; Arne Dohlen; grantcostello@jumboglacierresort.com
Subject: Peter Schaerer's review of the RK Heli-ski attacks to the JGR project

Hello Psyche,

As discussed, I am sharing Peter Schaerer's review of the latest RK Heli-Ski attacks on the JGR project. Feel free to use it as you see fit.

Kind regards

Oberto

--
oberto oberti architecture and urban design inc.

660 - 1188 West Georgia Street
Vancouver, BC V6E 4A2
www.obertiarchitecture.com

Tel: (604) 662-7796
Fax: (604) 662-7958

CAUTION:

This message is confidential. It may also be privileged. If you have received it by mistake, please let us know by email reply and delete it; you may not copy or disclose its contents to anyone. Our work is copyrighted and may not be modified, repurposed or distributed without prior written authorization by us. Please note the integrity of email cannot be guaranteed on the Internet. Thank you.



Page 152 to/à Page 154

Withheld pursuant to/removed as

DUPLICATE

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Monday, December 8, 2014 8:33 AM
To: Caul, Doug D ABR:EX
Cc: Lewthwaite, Jennifer EAO:EX
Subject: FOR REVIEW: Jumbo Draft Letters
Attachments: draft ss letter.docx; draft ss letter knc.docx; draft letter re compliance.docx

Hi Doug,

Here are the draft letters for your review. 1 letter from C & E compliance re: condition 36. 2 letters from me re: substantially started (certificate holder and KNC (a similar letter will be drafted for the Shuswap). I will be sharing will Transportation, FLNRO, JAG as well today.

Paul

Page 156 to/à Page 162

Withheld pursuant to/removed as

DUPLICATE

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Wednesday, December 3, 2014 5:17 PM
To: Cousins, Autumn EAO:EX; Milne, Andrew EAO:EX
Subject: FW: Avalanche Material
Attachments: Peter Schaerer - Jumbo Glacier Resort Avalanches Nov 2014.pdf; ATT00001.htm; Avalanche Risk Assessment Recommendation.docx; ATT00002.htm

Here is the transportation report they have completed but without benefit of the latest report from Mr. Schaerer. Doug will want to know with these two documents – what would our recommendation be?

Let's discuss tomorrow.

Paul

From: Caul, Doug D EAO:EX
Sent: Wednesday, December 3, 2014 4:11 PM
To: Craven, Paul EAO:EX
Subject: Fwd: Avalanche Material

Plse call me when u get a chance.
Dc

Doug Caul
Associate Deputy Minister
Environmental Assessment Office

Begin forwarded message:

From: "Duncan, Dave TRAN:EX" <Dave.Duncan@gov.bc.ca>
To: "Caul, Doug D EAO:EX" <Doug.Caul@gov.bc.ca>
Cc: "Main, Grant TRAN:EX" <Grant.Main@gov.bc.ca>
Subject: Avalanche Material

Hi Doug,

As discussed on the phone please find the attached BN and report from Peter Schaerer.

Thank you.

Page 164 to/à Page 171

Withheld pursuant to/removed as

DUPLICATE

Pizarro, Kirsten EAO:EX

From: Caul, Doug D ABR:EX
Sent: Wednesday, December 3, 2014 4:11 PM
To: Craven, Paul EAO:EX
Subject: Fwd: Avalanche Material
Attachments: Peter Schaerer - Jumbo Glacier Resort Avalanches Nov 2014.pdf; ATT00001.htm; Avalanche Risk Assessment Recommendation.docx; ATT00002.htm

Please call me when u get a chance.
Dc

Doug Caul
Associate Deputy Minister
Environmental Assessment Office

Begin forwarded message:

From: "Duncan, Dave TRAN:EX" <Dave.Duncan@gov.bc.ca>
To: "Caul, Doug D EAO:EX" <Doug.Caul@gov.bc.ca>
Cc: "Main, Grant TRAN:EX" <Grant.Main@gov.bc.ca>
Subject: Avalanche Material

Hi Doug,
As discussed on the phone please find the attached BN and report from Peter Schaerer.
Thank you.

PETER SCHAERER

Apt.103 -105 West Kings Road
North Vancouver BC; V7N 2L7
Telephone: 604-987-3716
e-mail: pschar@shaw.ca

SNOW AVALANCHE HAZARDS AT JUMBO GLACIER RESORT

Report prepared for:

Oberti Resort Design, a division of Oberto Oberti Architecture and Urban
Design Inc. of Vancouver BC.

26 November 2014

OBJECTIVE

On 12 November 2014, Oberto Oberti requested Peter Schaerer to determine whether snow avalanches at the planned resort village in the Jumbo Valley could affect;

- a) the residential areas;
- b) the day lodge north of the resort village.

This report contains the conclusions of an analysis of the avalanche hazard.

DOCUMENTATION

The runout zones of possible maximum avalanches were estimated from information on topographic maps (scales 1:7500 and 1:20,000) that included the locations of the planned village and the day lodge; air photos; oblique photos of the avalanche paths; dynamic and terrain models for avalanche speeds and runout distances. An analysis of avalanche risks of this nature typically would include field observations of terrain features, observations of vegetation damage from avalanches and the consideration of observed avalanches. Unfortunately no observations on the ground could be carried out in November 2014 because snow had covered the area and access, furthermore observations of past avalanches were not available. Because the observational data are incomplete, the conclusions may not be accurate, but they express fairly the hazard to the planned developments.

In 1991, Peter Lev had mapped hazardous avalanche areas in the Jumbo Creek Valley. His map shows well the location of avalanche paths, but maximum avalanches, for example with a 100- to 300-year return period, might run longer distances than are shown on the map.

EAST SIDE OF RESORT VILLAGE

Frequent small avalanches start on the rock face below the mountain ridge. Probably most of them stop on the 26° incline below the rocks, but their impact and load on an instable snowpack on the lower slope could start small and medium size avalanches. Such avalanches

would either stop in the forest or, when running in depressions and ski glades, stop on a gentler slope (incline 20° to 23°) approximately 400 m from the village at the maximum.

WEST SIDE OF RESORT VILLAGE

Numerous avalanches start in a large bowl with irregular terrain at the Jumbo Peak ridge. Small avalanches would stop on low inclines in the bowl, but larger ones appear to move into a channel at the south side of the bowl. The avalanches, in particular those of wet snow, could advance in the channel as far as Jumbo Creek in the valley bottom. The plan of the village shows that no residential buildings are planned in the vicinity of the channel.

The query is whether large avalanche might not be confined in the channel, but would spill to the wide and logged area above the village. The slope incline of this area is too low for avalanches to start there, but avalanches in motion that run over the confining ridge of the channel could advance through a strip of forest and over the logged area. The standing forest contains tracks that could have been made by avalanches, but observations on the ground need to confirm this. Medium size avalanches (size 3 of the Canadian classification) that advance into the logged area would stop about 200 m distance from the village edge, and larger ones could reach the village. As a conclusion now, the absence of wide avalanche tracks in the remaining forest and a low slope incline of the logged area suggest that avalanches have not in the past and probably will not reach the west side of the resort village,

DAY LODGE

The Day Lodge, now under construction, is located 200 m up-valley from the Village. A large avalanche path, named "South Wolverine" on the 1991-map and "Pink Panther" on recent maps, covers the slope west of the Lodge. Avalanches start below the ridge of Jumbo Peak (elevation 2600 m) in deep wind-transported snow. The avalanche track on unconfined terrain has an average incline of 28° which allows avalanches to develop enough speed for reaching and crossing the valley floor. The air photo shows that avalanches have destroyed the forest over a distance of 130 m on the valley floor and probably have run farther into the forest without braking trees. The models of runout distance for an avalanche with an estimated 100-year return period yield a runout distance of 250 m across the level valley floor.

The Lodge location is in the forest and, according to the Google earth photo received, is approximately 20 m from the trim line that avalanches had produced. Oblique photos of the site show large fir trees between the lodge and the open avalanche path. Observations at numerous other avalanche paths however have demonstrated that owing to variations of the starting location, irregular ground surfaces, and previous snow deposits, the avalanche flow directions often are unpredictable and avalanches could break through forest at the side and spread wider in the runout zone than is evident from forest damage. At the Pink Panther avalanche path in question, avalanches might spread because the topographic maps do not show terrain features that might confine them. In conclusion, though no damaging avalanche

has reached the Lodge site, a larger one than had occurred in the past or an avalanche with an irregular flow direction could hit the Lodge.

When the Lodge is built, it will be essential to prevent the formation of large avalanches. This could be achieved by controlling with explosives frequently the formation of instable snow packs in the starting zone. Several explosive devices with permanent equipment on site and remote control are on the market, for example Gazex, Daisybell, Wyssen.

The avalanche control with explosives will require a safety plan and trained, experienced and licensed persons.

CONCLUSIONS

1. Avalanches are not expected to reach the east side of the resort village.
2. Probably no avalanches will reach the west side of the resort village. But because of the uncertainty of large avalanches spilling to the logged slope, it is recommended that, prior to development in this part of the resort, ground observations and avalanche observations be made for further review. Control by explosives might be considered in the bowl above if necessary.
3. No residential buildings should be placed within 50 m of the creek channel south in the west side of the resort village.
4. Avalanche control by explosives must be applied at the Wolverine/Pink Panther avalanche path near the Day Lodge and be supported by trained personnel and a snow safety plan.

BRIEFING NOTE FOR INFORMATION

DATE: December 3rd, 2014

PREPARED FOR: Doug Caul, Associate Deputy Minister, Environmental Assessment Office
Paul Craven, Exec Director, Policy and Quality Assurance, EAO

ISSUE: Questions have been put forward to the EAO regarding potential snow avalanche risk to the Day Lodge location of the Jumbo Glacier Resort (JGR), where a concrete foundation slab was poured in early October, 2014.

Background

As a key part of the application process, the developer commissioned extensive hazard mapping reports for planning, preparation, application and approval of a Master Development Agreement. Locator and Atlas maps were produced for ski area, subdivision and road access for the Resort.

Avalanche Mapping is typically done at three different levels of analysis

1. Locator Map – maps path location and direction, but not extent
2. Atlas Map – maps the path location and extent of start zone, path and runout
3. Risk Map – detailed analysis that determines risk associated with building in locations within and adjacent to an avalanche path.

MoTI are not aware of any detailed Risk Mapping for the Resort, where it may be required (locations that may be at potential risk).

A preliminary engineering risk analysis, core to risk mapping, has also recently been completed by Peter Schaerer eminent avalanche expert who conducted the majority of the avalanche mapping and avalanche recommendations for JGR planning processes. Mr. Schaerer is a Life member of APEGBC, now retired, Civil.

The developer has responded to recent comments of potential avalanche risk to the Day Lodge location, with a comment from Peter Schaerer, with the following:

1. *The day lodge is placed in an area that is outside the lateral boundary of past avalanches, and future larger avalanches will be prevented by explosive devices.*
2. *The resort village is not within reach of avalanche run outs.*

History

The Ministry of Transportation and Infrastructure (MoTI) has had a core role in the snow avalanche requirements for the JGR since applications were put forward to government in the early 90s. The primary focus MoTI was for road access requirements; engineering and safety, including the snow avalanche location and safety requirements for the access road. MoTI also provided some avalanche safety related guidance to other Ministry's in the process of defining core requirements for resort approval.

Recommendations

The developer should commission an engineering avalanche risk evaluation for the Day Lodge location, and should a risk be identified recommend mitigation options to ensure safety.

Land Management in British Columbia

In the case of natural hazards the approving authority may require reports to address any matters that are of concern (i.e. natural hazards, including avalanche). If a hazard is identified, the following is standard practice in BC.

1. Natural hazard is identified by a variety of means – mapping, known history, previous studies, and site inspections.
2. At the request of the approving authority the developer is required to hire a PEng (experienced in the hazards identified)
3. MOTI in cooperation with APEGBC has developed criteria for assessment of hazards within BC. Specific to avalanche, MOTI has adopted the criteria set out by CAA that must be considered in the professional reports. These standards have also been adopted by most Regional Districts in BC and many jurisdictions throughout Canada, for more than a decade.
 - Report is to consider the return period of 300 years for life threatening events. The report is required to identify the red/blue/white zones.
 - i. Red Zone – no development
 - ii. Blue Zone – minimal with restrictions on inhabited buildings, potential for further investigation (an avalanche management program is one option for consideration, also, building practices)
 - iii. White Zone – No risk – no restrictions
4. Should hazards be identified then consideration is given to the need for mitigation:
 - If mitigation is required specified works would have to be in place prior to final approval.

Expertise in land use planning in snow avalanche terrain is readily available in BC. The Canadian Avalanche Association has members who specialize in identifying and evaluating avalanche terrain for a variety of purposes. In instances where public risk acceptance is low, such as the determination of appropriate locations for development of occupied structures, engaging the expertise of a professional engineer specializing in snow avalanche assessments is usually considered.

A number of publications regarding land use in avalanche terrain are available to guide land managers who wish to ensure their obligations under a variety of BC acts or regulations are met. The following list of publications will provide preliminary guidance to land managers but the selection of appropriate expertise will remain a key element of successful planning for use of avalanche terrain.

- *Land Managers Guide to Snow Avalanche Hazards in Canada*, 2002 Canadian Avalanche Association ISBN 0-9685856-5-5
- *Guidelines for Snow Avalanche Risk Determination and Mapping in Canada*, 2002 Canadian Avalanche Association ISBN 0-9685856-4-7
- *Natural Hazards in British Columbia*, 1996 Ministry of Transportation and Highways, ISBN 0-7726-2773-8

Avalanche Hazard Identification and Reports commissioned by JGR

Peter Schaerer PEng of Stethem and Associates

s.13

- 2003 Preliminary recommendations for avalanche control
 - Resort and the access road.
 - Avalanche hazard management recommendations

JGR and Professional Consultants
- 2004-2006 Compilation of Avalanche Mapping for the Development, MDA process
 - Ski area and ski lift facilities

s.13

 - Avalanche mapping was overlaid on project proposal maps


s.13

s.13 accurately. Mapping was appropriate for preliminary planning and approvals.

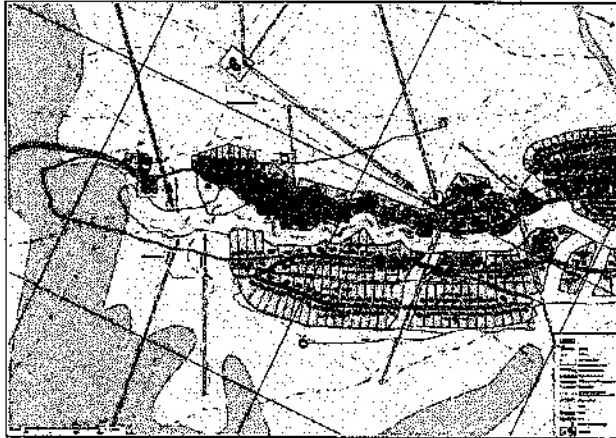
s.13

- Nov 2014 A preliminary engineering risk analysis, core to risk mapping, was recently completed by Peter Schaerer at the request of the developer, his conclusions are as follows:
 1. Avalanches are not expected to reach the east side of the resort village.
 2. Probably no avalanches will reach the west side of the resort village. But because of the uncertainty of large avalanches spilling to the logged slope, it is recommended that, prior to development in this part of the resort, ground observations and avalanche observations be made for further review. Control by explosives might be considered in the bowl above if necessary.
 3. No residential buildings should be placed within 50 m of the creek channel south in the west side of the resort village.
 4. Avalanche control by explosives must be applied at the Wolverine/Pink Panther avalanche path near the Day Lodge and be supported by trained personnel and a snow safety plan.

Summary of Avalanche Mapping for Jumbo Glacier Resort

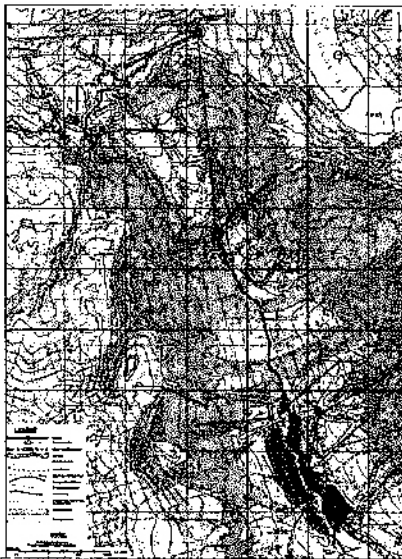
<p>s.13</p> 	<p>Atlas mapping</p> <ul style="list-style-type: none"> • scale 1:24,000 with 100ft contours (based on map 82K/7 at 1:50,000); • mapping was compiled typical for avalanche atlas development <p>s.13</p>
---	---

s.13



November 2014 – Pheidias Mapping

- Detailed map identifying resort property development proposed locations, and current locations of foundations of constructed base facilities
- s.13



November 2014 – Pheidias Mapping

- Detailed map identifying resort property development proposed locations, and current locations of foundations of constructed base facilities
- s.13

Copyright

Google Earth photo,

Identifying locations of Day Lodge and
Maintenance Service Building

Page 181 to/à Page 186

Withheld pursuant to/removed as

s.13

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Monday, December 1, 2014 10:11 PM
To: Caul, Doug D ABR:EX
Subject: FW: Peter Schaerer's review of the RK Heli-ski attacks to the JGR project
Attachments: Peter Schaerer - Jumbo Glacier Resort Avalanches Nov 2014.pdf

Fyi. This was received from Jumbo Glacier Resorts today.

From: Cousins, Autumn EAO:EX
Sent: Monday, December 1, 2014 7:53 PM
To: Craven, Paul EAO:EX
Subject: FW: Peter Schaerer's review of the RK Heli-ski attacks to the JGR project

Sent from my Windows Phone

From: Oberto Oberti
Sent: 2014-12-01 6:36 PM
To: Brown, Psyche FLNR:EX
Cc: Humphrey, Gordon J FLNR:EX; Cousins, Autumn EAO:EX; Milne, Andrew EAO:EX; Mark Read; Arne Dohlen; grantcostello@jumboglacierresort.com
Subject: Peter Schaerer's review of the RK Heli-ski attacks to the JGR project

Hello Psyche,
As discussed, I am sharing Peter Schaerer's review of the latest RK Heli-Ski attacks on the JGR project. Feel free to use it as you see fit.
Kind regards
Oberto

--
oberto oberti architecture and urban design inc.
660 - 1188 West Georgia Street
Vancouver, BC V6E 4A2
www.obertiarchitecture.com

Tel: (604) 662-7796
Fax: (604) 662-7958

CAUTION:
This message is confidential. It may also be privileged. If you have received it by mistake, please let us know by email reply and delete it; you may not copy or disclose its contents to anyone. Our work is copyrighted and may not be modified, repurposed or distributed without prior written authorization by us. Please note the integrity of email cannot be guaranteed on the Internet. Thank you.



Page 188 to/à Page 190

Withheld pursuant to/removed as

DUPLICATE

SNOW AVALANCHE RISK ASSESSMENT

CEDAR BOULEVARD LANDSLIDE, HIGHWAY 3, SUNSHINE VALLEY, BC

Prepared for:
British Columbia Ministry of Transportation and Infrastructure

Prepared by:
Dynamic Avalanche Consulting Ltd.
Box 2845
Suite 201, 103 2nd St. E.
Revelstoke, BC V0E 2S0
250.837.4466

July 26, 2011



1.0	Introduction	1
1.1	Scope	1
1.2	Limitations	1
2.0	Background	2
3.0	Avalanche Characteristics and Risk Criteria	3
3.1	Avalanche Frequency and Magnitude	3
3.2	Avalanche Risk Zoning for Occupied Structures	4
4.0	Methods	5
5.0	Analyses	6
5.1	Terrain	6
5.2	Snow Supply	7
5.2.1	Selection of Representative Weather Data	8
5.2.2	Snow Available for Avalanche Formation	9
5.3	Maximum Avalanche Size Potential	11
5.4	Statistical and Dynamic Model Estimates of Runout and Impact Pressure	12
5.4.1	Statistical Model Runout Estimates	12
5.4.2	Dynamic models	13
6.0	Assessment of Potential Avalanche Risk	14
6.1	Residential Structures at Cedar Boulevard	14
6.2	Cedar Boulevard and the Cul-de-Sac	15
6.3	Highway 3	15
6.4	Powerline and Poles	15
7.0	Review of Baumann (2011) Report	16
7.1	Snow supply and maximum avalanche size estimates	16
7.2	Avalanche Size	17
7.3	Avalanche Runout	17
8.0	Conclusions and Recommendations	18
	Appendix A: Site Photographs	21
	Appendix B – Path Profiles	25
	Appendix C – Sunshine Valley Cedar Boulevard Landslide Map	27

1.0 Introduction

This report on snow avalanche risk at the Cedar Boulevard Landslide was prepared for the British Columbia Ministry of Transportation and Infrastructure (BC MoT). BC MoT requested Dynamic Avalanche Consulting Ltd. (DAC) evaluate the potential for snow avalanches within a recent landslide scar at Sunshine Valley, BC to affect Highway 3, residences along Cedar Boulevard and other adjacent facilities. This landslide occurred on May 26, 2011 and removed much of the vegetation and surficial material for an approximate slope length of 225 m.

This report provides a summary of observations made by DAC during a site visit on July 8, 2011, analysis of climate data to estimate snow supply, estimates of avalanche frequency, magnitude and runout, and comments and recommendations with respect to avalanche risk and mitigation strategies for affected facilities. Additionally, we provide a review of the snow avalanche assessment completed for this site by Baumann Engineering (Baumann, 2011) for Fraser Valley Regional District (FVRD).

1.1 Scope

The objectives of this assessment are to:

1. Determine the extent of potential snow avalanche hazard affecting residences, Cedar Boulevard and the adjacent cul-de-sac, powerline(s), Highway 3, and any other nearby facilities;
2. Review and comment on the Baumann (2011) report, most notably in relation to areas managed by the BC Ministry of Transportation and Infrastructure (BC MoT); and
3. Provide recommendations for management of any avalanche risk identified at this site.

1.2 Limitations

This assessment focuses on avalanches hazardous to vehicles on roadways and highways, residential structures and permanent infrastructure (e.g. powerline poles). Small avalanches hazardous to persons on foot above the roadways are not necessarily discussed or accounted for in this report. Such avalanches could be a concern to occupants of the residences below the slope. It should be expected that the frequency of small avalanches could be greater than the avalanches described in this report.

This assessment is not intended to be a formal risk assessment for the residential properties located on Cedar Boulevard, particularly the properties affected by the landslide. The primary purpose of this report relates to the potential avalanche risk to areas managed by BC MoT.

The potential future effect of climate change on snow avalanches is uncertain. The results presented in this report rely primarily on the historic effects under the current climate regime, which could be affected by climate change in the future. Climate change is considered in this report by applying the scale-free climate model called Climate BC [Wang et al. (2006¹)].

¹Wang, T. et al. 2006. Development of scale-free climate data for western Canada for use in resource management. *International Journal of Climatology*. 26: 383-397 (2006); also see: <http://www.genetics.forestry.ubc.ca/cfcg/climate-models.html>.

2.0 Background

On May 26th, 2011 a landslide occurred above residences located at Cedar Boulevard in Sunshine Valley, BC. This community is located 18km southeast of Hope, BC along Highway 3, which connects Hope to Princeton, BC (Figure 1).

The landslide removed the forest cover and surficial materials from the slope and exposed areas of bedrock. Three residential properties (Lots 15201, 15211 and 15221) were impacted by the landslide debris, severely damaging three residential structures. These properties remained under an evacuation order at the time of the site visit by DAC on July 8, 2011. Some flooding and debris deposition also occurred on Lot 15191.

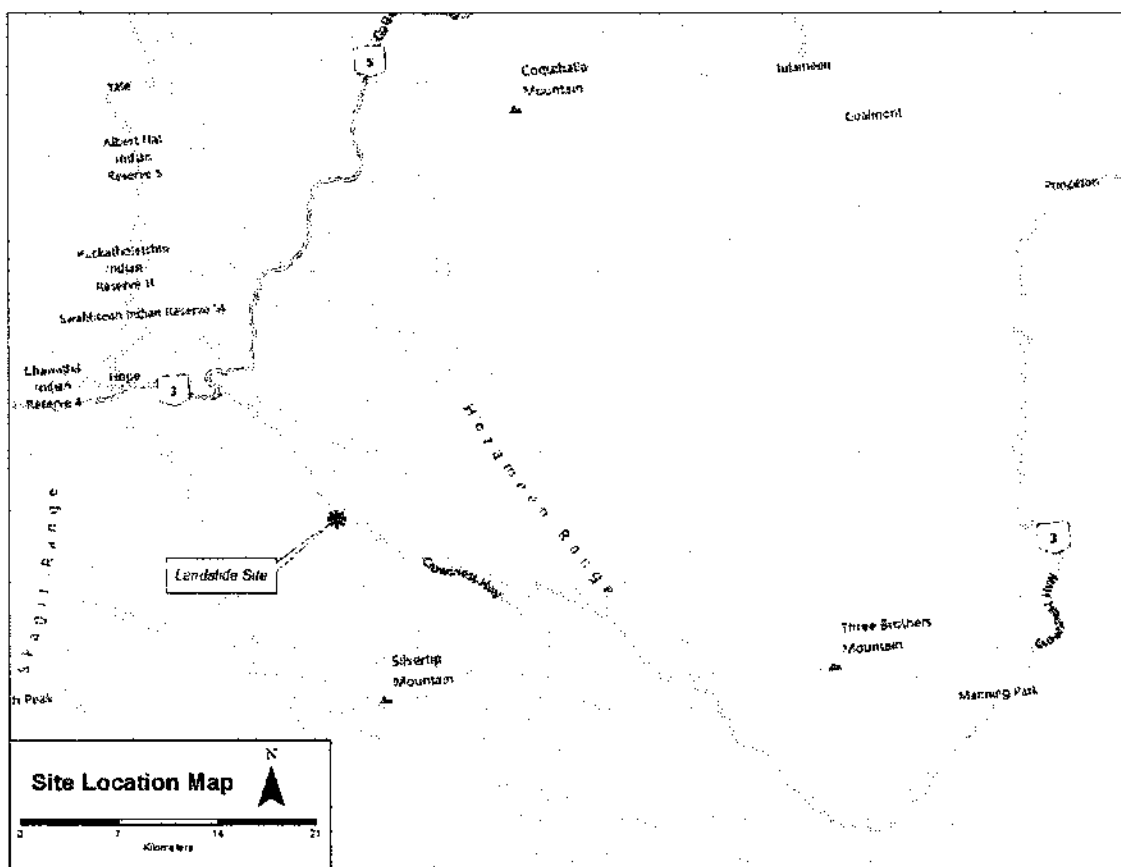


Figure 1. Regional map showing the Sunshine Valley landslide site.

Golder Associates (Golder, 2011²) completed a geotechnical hazard assessment of the Sunshine Valley landslide for FVRD where they identified a potential snow avalanche risk at the site. Golder recommended that "an assessment by a qualified snow avalanche specialist be conducted to determine the hazard from snow avalanches to the subject properties as well as to the neighbouring properties".

² Golder Associates (2011), *Landslide Hazard Assessment, Cedar Boulevard, Sunshine Valley, BC. Report prepared for FVRD*, dated June 7, 2011.

Following the landslide investigation by Golder, FVRD retained the services of Bauman Engineering to assess potential avalanche risk to the roads, inhabited structures and other infrastructure. Baumann (2011³) provided five recommendations, which are paraphrased as:

1. No new houses should be built at the base of the landslide slope unless protective works or retention structures are installed;
2. Existing houses should not be occupied during the winter, defined from late November to middle of May or when there is more than 50 cm of snow present;
3. An avalanche safety management plan should be prepared to address the risk to highway and sub-division workers (presumably by BC MoT and/or FVRD);
4. The Cedar Boulevard cul-de-sac should be relocated to the east or marked with avalanche danger signs and closed when there is more than 50 cm of snow present; and
5. The powerline should be re-located to the north or the poles protected by structures.

In their conclusions and recommendations listed above, Baumann (2011) identified a potential avalanche risk to the travelling public and workers on Highway 3 and the cul-de-sac, which fall under the responsibility of BC MoT. Based on these recommendations, BC MoT retained DAC to provide a second opinion on potential avalanche risk at this site, and if a hazard is identified to provide recommendations for measures to mitigate avalanche risk to acceptable levels.

3.0 Avalanche Characteristics and Risk Criteria

3.1 Avalanche Frequency and Magnitude

Frequency of avalanches depends on **snow supply** and **terrain**. **Snow supply** is determined by (1) frequency of snowfalls and amount of snow, and (2) wind transport of snow into the starting zone of avalanches. Frequency is a measure of the avalanche return period and is identified in this report using the return period (e.g. T=10 years) in years or frequency in average number of events per year (e.g. 1:10 years). Snow and weather conditions vary from year to year and the frequency of avalanches is not uniform.

Magnitude relates to the destructive potential of an avalanche. A description of destructive potential and typical runout location for a given magnitude of avalanche is provided in Table 1.

Magnitude is often related to frequency; in general large destructive avalanches occur on a less regular basis, while small ones occur on a regular basis. Magnitude is also related to location in the overall path. At the top of the avalanche path (starting zone) a higher frequency will be encountered than at the toe (runout zone).

This study focuses on avalanches hazardous to the travelling public in vehicles on the highway or the Cedar Boulevard cul-de-sac. Small terrain features that could produce avalanches hazardous to persons on foot are discussed but are not the main focus of this report.

³ Bauman Engineering (2011), *Snow Avalanche Assessment of Cedar Boulevard Landslide Area*. Report prepared for Fraser Valley Regional District, dated June 20, 2011.

Table 1. Canadian Classification System for Avalanche Size (McClung & Schaerer, 2006⁴)

Size	Destructive Potential	Typical Mass (tonnes)	Typical Path Length (m)	Typical Impact Pressure (kPa)
1	Relatively harmless to people.	< 10	10	1
2	Could bury, injure or kill a person.	10 ²	100	10
3	Could bury a car, destroy a building, or break a few trees.	10 ³	1000	100
4	Could destroy a railway car, large truck, several buildings, or a forest with an area up to 4 hectares.	10 ⁴	2000	500
5	Largest snow avalanches known; could destroy a village or a forest of 40 hectares.	10 ⁵	3000	1000

Within this report, avalanche risk is described in terms of the estimated magnitude and frequency of avalanches hazardous to traffic and workers in vehicles on the roadways. The typical risk criteria applied by MoT for new highway construction for a moving motor vehicle on a maintained roadway, which would include Highway 3 and the Cedar Boulevard cul-de-sac, are:

1. 10-year (1:10) return period for avalanches not typically hazardous to vehicles (size 2 and smaller); and
2. 30-year (1:30) return period for avalanches hazardous to vehicles (larger than a Size 2 avalanche).

These criteria apply a higher standard of care than the minimum suggested by the *Guidelines for Snow Avalanche Risk Determination and Mapping in Canada* (Canadian Avalanche Association (CAA, 2002⁵) which recommends the typical threshold of a 30-year return period for avalanches greater than Size 2, which could bury a car (Table 1).

3.2 Avalanche Risk Zoning for Occupied Structures

The risk criteria for residential structures differ significantly from the risk criteria for highways and roads. A higher standard of care is recommended due to the permanency of residential structures and exposure time of the occupants to avalanche risk compared to those travelling in vehicles on a highway. The zones recommended by CAA (2002) for land-use planning of occupied structures are:

- **White Zone** (low risk): An area with an estimated avalanche return period of greater than 300 years, or impact pressures less than 1 kPa (comparable to a gale force wind) and a return period greater than 30 years. Construction of new buildings, including permanently occupied structures, normally permitted.
- **Blue Zone** (moderate risk): An area between the Red and White Zones where, for return periods between 30 and 300 years, the product of frequency and impact pressure is less

⁴ McClung, D. & P. Schaerer. 2006. *The Avalanche Handbook*. The Mountaineers Books. Seattle. 342 pp.

⁵ Canadian Avalanche Association. 2002. *Guidelines for Snow Avalanche Risk Determination and Mapping in Canada*. McClung, D., Stethem, C., Schaerer, P., Jamieson, B. (eds.) Canadian Avalanche Association.

than 0.1 kPa/years and the impact pressure is greater than or equal to 1 kPa. Construction of new buildings, such as industrial plants and temporarily occupied structures, possibly permitted with specified conditions.

- **Red Zone (high risk):** An area where the return period is less than 30 years and/or impact pressures are greater than or equal to 30 kPa, or where the product of impact pressure (kPa) and the reciprocal of the return period (years) exceeds 0.1 for return periods between 30 and 300 years. Construction of new buildings *not* normally permitted.

The line between the White and Red Zones (or Blue Zones where present) represents a boundary that destructive avalanches could reach on the average of once in 300 years. Within the Red Zone, avalanches would be powerful enough to destroy wood frame buildings, break trees and deposit deep snow. Powder avalanches could travel beyond this boundary into the White Zone where they could produce minor damage such as broken tree branches, broken windows and blowing snow inside buildings. Due to the low frequency of powder snow exceeding the hazard line, the risk of such damage is considered acceptable.

For residential developments in Canada, common practice is to restrict the construction of homes (or permanently occupied structures) where destructive avalanches with a return period of 100 to 300 years are expected

An important consideration in the discussion above is that the criteria apply to avalanches considered destructive to the residential structure itself, not the residents on foot outside of a structure. Size 2 avalanches are not normally destructive to structures by definition (Table 1), so typically only avalanches > Size 2 are considered for residential zoning purposes.

4.0 Methods

The landslide area was reviewed using Google Earth, Bing maps aerial imagery and GIS data sourced from GeoBC⁶ and FVRD. Imagery of the site showed the landslide site in its formerly forested condition and was consequently of limited use. Similarly, the scale of the landslide is such that TRIM topographic data (20 m contours) was of limited use.

Information in the reports by Golder (2011) and Baumann (2011) was reviewed prior to and following the field assessment.

A field assessment was conducted on July 8th, 2011 by Alan Jones, P. Eng. and Chris Argue, Dipl. T. of DAC. The field assessment involved a detailed survey of the landslide scar, adjacent forested areas, potential avalanche runout zones at the toe of the slope, and adjacent infrastructure including residences, roads and powerlines. The field survey included:

- GPS measurements with accuracy typically in the range of ± 6 m to 10 m, but occasionally as poor as ± 20 m. This was a recognized limitation of the survey

⁶ Web link: geobc.gov.bc.ca/

considering the relatively small size of the landslide (slope length of 225 m) compared to the accuracy of the survey;

- Elevations surveyed using a calibrated altimeter accurate to ± 1 m. The high accuracy of the altimeter survey compensated for the inaccuracy of the GPS survey, providing a higher degree of confidence in the survey compared to GPS measurements alone;
- Distances measured with a laser rangefinder with an accuracy of ± 1 m; and
- Slope angles measured using a Suunto clinometer with an accuracy of $\pm 1^\circ$.

Post-field assessment work included:

- Climate analysis;
- Frequency-magnitude estimation;
- Modelling of avalanche motion, runout and impact pressures using statistical and dynamic avalanche models;
- Preparation of maps and images; and
- Preparation of this report.

5.0 Analyses

5.1 Terrain

The top of the landslide scar is located at approximately $49^\circ 16' 43''$ N latitude, $121^\circ 14' 48''$ W longitude and 836 m asl. The path descends approximately 150 m vertical distance from the top of the starting zone to the residences over a slope distance of approximately 250 m.

The starting zone for potential avalanches consists of irregular bedrock and soil debris creating approximately 30 cm of surface roughness that snow needs to fill in before a relatively smooth surface can form for avalanches (Appendix A, Photograph 1). The starting zone averages 17 m wide and is approximately 30 m long measured along the slope. The starting zone is located approximately between 836 m and 815 m elevation and has an average incline of 40° .

The upper track ranges from 815 m to 758 m elevation and consists of an irregular bedrock surface with 30 cm of surface roughness. The incline in the upper track varies from 50° to 34° and widens to 45 m (Photograph 2).

A bench is present from 758 m to 748 m elevation where landslide debris accumulated (Photograph 3). Surface roughness from debris averages 100 cm, and this bench would serve to catch smaller avalanches initiating from above. Below this bench the path is split by a natural bedrock rib (Photo 4) into west and east channels (Photograph 8). In the event of an avalanche, the majority of avalanche flow would be expected to travel down the east channel.

The east channel plunges steeply (approximately 50°) down to 714 m where the incline decreases to $20\text{--}30^\circ$ within a 20 m wide channel (Photograph 5). The β -point (where the incline first decreases to 10° and avalanches start slowing down) is at the toe of the slope near 700 m elevation. The back of the residence on Lot 15201 is 21 m from this transition (β -point).

The west channel is initially less steep than the east channel down to 734 m where it steepens to over 50° down to 714 m elevation (Photograph 6). The incline decreases from 38° to 27° above 688 m, which is the toe of the slope and β -point for this channel. The back of the residence on Lot 15231 is 11 m from the β -point.

The terrain slopes gently to the Highway 3 from the toe of the slope except for a 6 m section between the cul-de-sac and the highway. The distances in the west channel from the toe of the slope to Cedar Boulevard and Highway 3 are 33 m and 62 m, respectively. Similarly for the east channel the distances from the toe of slope to Cedar Boulevard and Highway 3 are 53 m and 77 m, respectively. Photograph 7 shows west channel and the upper path relative to Highway 3. The full path profiles are included in Appendix B.

5.2 Snow Supply

Snow supply is determined by: (1) frequency of snowfalls and amount of snow, and (2) wind transport of snow into the starting zone of avalanches. Because the landslide is located below treeline and is sheltered from wind by the surrounding mature forest, the frequency and amount of snow fall is the most relevant factor for snow supply at this site.

Data from the Environment Canada (EC) Canadian Daily Climate Data (CDCD) and the River Forecast Centre (RFC) were used to determine the expected snow supply at the landslide. Initially, four stations were considered for our analyses (Table 2).

Table 2. Weather Stations in proximity to the Sunshine Valley landslide.

Station ¹	Distance from Landslide (km) ²	Elevation (m)	Latitude	Longitude	Period of Record (# years)
Hope Slide 1113580	3	701	49°16'	-121°13'	1967-1974 (7)
Hope Slide 1113581	1	687	49°17'	-121°14'	1975-2004 (29)
Sumallo River West 3D01C	3	801	49°15'	-121°14'	1992-2011 (20)
Spuzzum Creek 1D19P	51	1197	49°39'	-121°39'	1999-2010 (9)

Notes:

¹Hope Slide is a weather station maintained by EC; Sumallo River West is a manual snow course station and Spuzzum Creek is an automated snow pillow site, both maintained by the RFC.

²Sunshine Valley landslide is located at 49°16'43" North Latitude, -121°14'48" East Longitude, and 836 m elevation.

The dates and numbers of years of data are listed in Table 2. Hope Slide station was moved approximately 2.3 km to the northwest in 1975, hence two different station numbers. The data for the two stations is very comparable, so we combined the dataset for analysis.

5.2.1 Selection of Representative Weather Data

In order to determine how each data set represents conditions at the site it is important to consider proximity to the landslide both in distance and elevation. The Hope Slide stations and Sumallo River West station are both located close to the landslide (≤ 3 km) and are at a comparable elevation (≤ 150 m difference). The Spuzzum Creek station is located relatively far from the landslide (51 km) and is 361 m higher in elevation.

The higher elevation and geographical location at Spuzzum Creek result in a much higher snow supply than the landslide site which is located in a *rain shadow* provided by the Coast Range Mountains. This is clearly illustrated in Figure 2 which displays mean annual precipitation for the area surrounding Sunshine Valley.

Figure 3 shows the average maximum snowpack and the statistical extreme snowpack depths (Gumble distribution) for each station listed in Table 2. Figure 4 shows monthly mean maximum snowpack depth for each station. There is good agreement between the Hope Slide and Sumallo River West stations while the Spuzzum Creek station shows a significantly deeper snowpack notably in April when the Spuzzum Creek snowpack is peaking. By the beginning of March, the snowpack at Hope Slide and Sumallo River is decreasing. The difference in snowpack depth can largely be attributed to differences in elevation and geographic location.

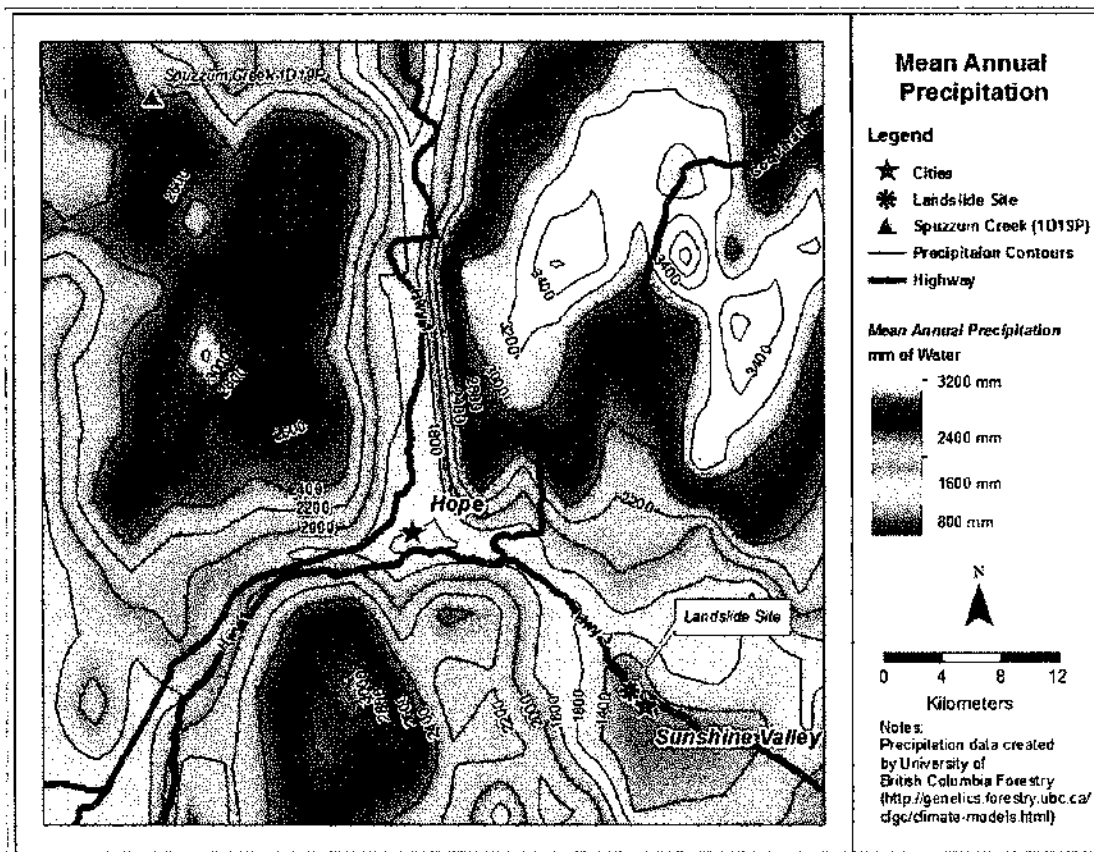


Figure 2. Mean annual precipitation map highlighting differences in snow climate.

After considering the substantial differences in snow supply between the Spuzzum Creek station and the other two available stations, it is reasonable to conclude that the Spuzzum Creek station does not represent snow supply at the site and is not used in the analysis.

Given the similarity between the Hope Slide station and the Sumallo River West station data (6.7% difference of mean maximum snowpack depth) and that the Hope Slide station is located only 1 km from the site, the Hope Slide station was used for snow climate analysis in our report.

5.2.2 Snow Available for Avalanche Formation

The mean monthly maximum and statistical maxima for the Hope Slide stations are shown in Figure 5. Peak snowpack height occurs during December-January while the potential avalanche

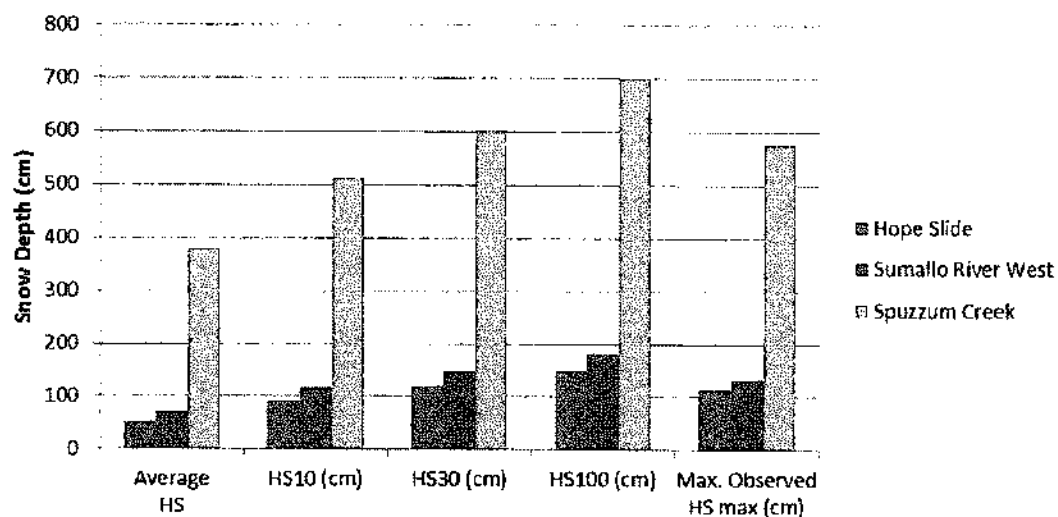


Figure 3. Comparison of maximum annual snowpack depths.

Notes: HS=average max. height of snow., HS10=10 year max., HS30=30 year max., HS100=100 year max..

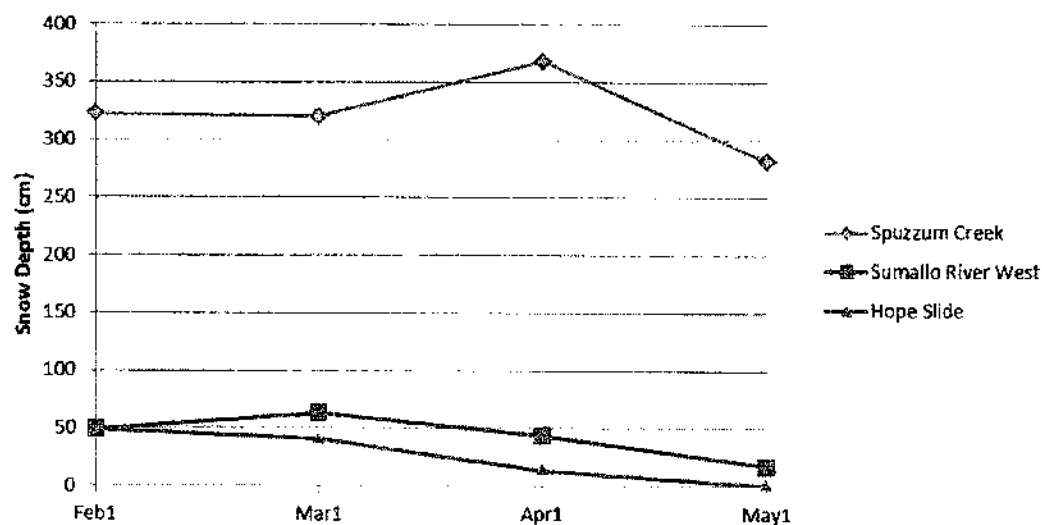


Figure 4. Monthly mean maximum snowpack depths.

season extends from December through February and, during exceptional years, into March as the snowpack depth remains above the threshold snowpack depth for avalanches.

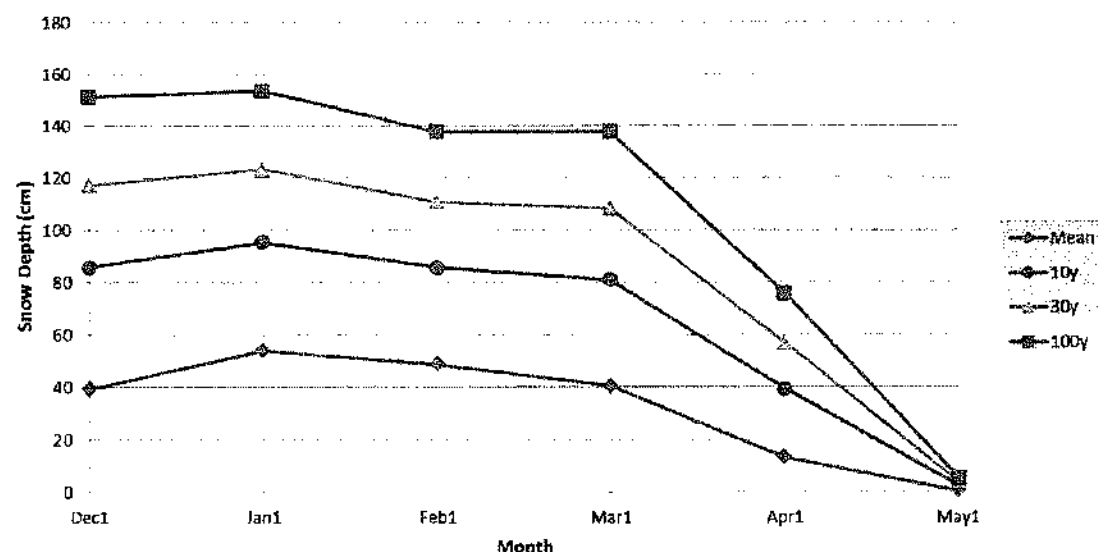


Figure 5. Maximum snowpack depth by month at the Hope Slide Station.

A minimum of 30 cm of snow is required to produce a smooth snow surface for avalanches at this site (Table 3), likely closer to 60 cm once small trees start to re-grow which will occur several years from now. After the ground surface is covered with the minimum depth of snow, another 30-50 cm depth of snow is usually required for avalanches to start (CAA, 2009⁷). Thus, approximately 60-80 cm of snow depth would be required at this site before a potential snow avalanche hazard could develop.

Table 3. Threshold snowpack depths (From McClung and Schaerer, 2006)

Snow Depth (cm)	Ground Characteristics
30	Relatively smooth ground cover; fine scree, bedrock, grass
60	Average terrain; boulders, small trees, shrubs, irregular surfaces
100	Rough terrain; large boulders, stumps, logging debris

A potential snow avalanche hazard (i.e. above the minimum depth of 60 cm) will not develop at this site annually (Figure 5). Rather, a sufficient snow depth for avalanche formation is expected to occur approximately 1 in 10 years (return period of 10 years), during December-March.

Sunshine Valley is located in a *maritime snow climate* (McClung and Schaerer, 2006). Avalanches in a maritime climate generally occur during storm

periods with intense precipitation or as a result of rain-on-snow occurring at the end of storms. The steep terrain (40°) in the starting zone will likely slough during significant storms, resulting in small avalanches that may stop on either of the benches in the path. Buried structural weaknesses deep in the snowpack are very unlikely at this site due to the relatively warm temperatures at low elevation. Thus, deep slab avalanches are very unlikely at this site.

⁷ CAA, 2009. Introduction to Snow Avalanche Mapping. Course manual.

Maximum 1-day and 3-day snowfall amounts were analysed using extreme value (Gumbel) statistics to estimate the maximum potential snow available for avalanching during a storm (Table 4). The Climate BC model estimated a 15% increase in winter precipitation (December 1st to March 1st) from the 1971-2000 climate normal to 2050 CGCM A2x model values. This amount was added to the storm amounts to account for potential climate change effects.

Table 4. Historical storm snow totals at Hope Slide station.

	1 Day Maximum		3 Day Maximum	
	Depth (cm)	+15%*(cm)	Depth (cm)	+15% (cm)
Observed Maximum	61	~	89	~
Mean (of annual maximum)	30	35	50	58
10-year	45	52	74	86
30-year	55	63	91	105
100-year	66	76	109	125

*15% increase assumed due to climate change for 2050 CGCM A2x model.

Summarizing the data in Table 4, 1-day maximum storm snow amounts would be in the range of 35-76 cm for varying return periods, 3-day storm snow amounts are in the range of 58-125 cm. Storm snow would settle into a slab during a 3-day storm, totalling less than 100 cm for the 100-year event.

5.3 Maximum Avalanche Size Potential

Two methods are commonly applied in Canada to estimate avalanche size potential: (1) Rational Method and (2) Maximum Slab Method (CAA, 2009). The Maximum Slab Method estimates avalanche volume (and mass) as a function of the starting zone area and the slab depth that slides. The Rational Method estimates the volume of snow that may avalanche based on the combined surface area of the starting zone and the track, the water equivalent of the 30-year maximum annual snowfall in the starting zone and the density of avalanche snow in motion. Table 5 summarizes our results for estimating the maximum avalanche size at this site for varying return periods using very conservative input parameters.

Table 5. Estimated mass of a potential maximum avalanche at the Sunshine Valley Landslide.

Return Period (Years)	Method (Tonnes)		Average (Tonnes)
	Maximum Slab	Rational	
10	273	257	265
30	375	514	445
100	480	856	670

Note: Maximum height of snowpack is assumed to be 1.1 m, 1.4 m and 1.7m for 10, 30, and 100 year return periods, respectively, surface roughness is assumed to be 0.3 m.

Size 2 and 3 avalanches have order-of-magnitude masses of 100 tonnes and 1000 tonnes, respectively (Table 1). Combining these mass estimates with the typical path length (100 m for Size 2, 1000 m for Size 3) and the authors' experience results in a maximum estimated Size 2

avalanche for 10 and 30 year return periods, and Size 2.5 for a 100-year or longer return period avalanche. Given the relatively low snow supply combined with the small terrain, we do not believe that this avalanche path can produce a Size 3 or larger avalanche.

5.4 Statistical and Dynamic Model Estimates of Runout and Impact Pressure

Avalanche runout distances were estimated using a combination of statistical and dynamic avalanche runout models. Some models are better suited for particular avalanche paths or regions, and by using several methods, the uncertainty associated with these models due to statistical variation and input parameter assumptions can be reduced.

5.4.1 Statistical Model Runout Estimates

The Alpha-Beta (Nixon and McClung, 1993⁸) and Runout Ratio (McClung and Mears, 1991⁹) statistical models were used to estimate the avalanche path runout distance. Both models use the reference β -point where the slope incline first decreases to 10°. The reference β -angle is the angle measured from the horizontal between the β -point and the top of the starting zone. The β -point is located at the toe of the slope on the properties, 700 m in the east channel and 688 m elevation in the west channel.

Both runout ratio and alpha-beta statistical runout estimates were calculated for non-exceedance probabilities (P) of 0.5 and 0.85 using model parameters for the Coast Mountains. A non-exceedance probability of 0.5 means that half the paths in the reference data set would exceed a given runout while the other half would not. A non-exceedance value of 0.85 is more conservative, assuming that only 15% of the paths in the dataset would exceed a given runout.

Table 6a. Statistical model runout estimates (Δx metres) past the β -point (toe of slope)

Model	West Channel		East Channel	
	P=0.5	P=0.85	P=0.5	P=0.85
Alpha Beta	33	52	32	51
Runout Ratio	25	55	23	50
Average	29 m	54 m	27 m	50 m

Table 6b. Distance from β -point (toe of slope) to Cedar Boulevard and Highway 3

	West Channel	East Channel
Cedar Blvd.	33 m	53 m
Highway 3	62 m	77 m

⁸ Nixon, D.J. and McClung, D.M., 1993. Snow avalanche runout from two Canadian mountain ranges. *Annals of Glaciology*, 18, 1-6.

⁹ McClung, D.M. and Mears, A.I., 1991. Extreme value prediction of snow avalanche runout. *Cold Regions Science and Technology*, 19(2), 163-175.

Tables 6a and 6b show that, given sufficient snow supply, in theory there is potential for extreme avalanches in the landslide scar to reach the southern edge of Cedar Boulevard. It should be kept in mind that this would be an exceptional (extreme) event that could reach this far. The dataset used to develop these statistical models deals only with extreme avalanches, which is useful for residential zoning applications. In practice, given the geographical location, low snow supply and nature of the terrain in the landslide scar, this is considered a very unlikely event.

What is important here with respect to Highway 3 is that the more conservative estimate of $P=0.85$ demonstrates that an extreme avalanche event would not reach Highway 3, which is located at least 10 m beyond (i.e. runout distance of 62-77 m) the theoretical reach (50-54 m) of a 100-year+ design avalanche.

With respect to the residential structures, there is potential for the theoretical design avalanche to reach the residences at their current locations. The residence in the east channel path is located 21 m from the toe of the slope, while the residence in the west channel is approximately 11 m from the toe. It was difficult to confirm this distance in the west path since the area was full of woody debris. Regardless, if a design (e.g. 100-year or higher) avalanche were to occur in either the east or west channel in its currently de-forested state it could reach the residences.

5.4.2 Dynamic models

Avalanche runout, velocity and impact pressures were estimated by applying the PCM (Perla and others, 1982¹⁰), PLK (Perla and others, 1984¹¹) and DAN-W (Hung, 2009¹²) models of avalanche motion. These models depend strongly on estimated friction coefficients, and confidence in these model estimates is generally lower than for information from field work.

For both the east and west channels the dynamic models estimate runout of approximately 40 m past the toe of the slope for a theoretical maximum avalanche, but a more likely value is 30 m. These estimates are comparable to the runouts provided in Table 5a for the statistical models. This would place the theoretical runout position slightly into Cedar Boulevard for the west channel, but short of the road in the east channel. The dynamic models indicate that avalanches do not reach Highway 3 in either channel, which is consistent with the statistical model results (Tables 6a and 6b).

The modelled avalanche speeds at the residences in the east channel are on the order of 7-8 m/s. The speed at the residence in the west channel is higher, possibly on the order of 12 m/s, since it is located closer to the toe of the slope. Without completing a detailed analysis of potential impact pressures, it is reasonable to assume pressures could be as high as 10-20 kPa for the theoretical design avalanche at the residences. These values are consistent with those shown in Table 1 for a Size 2 avalanche (10 kPa). The potential impact pressures are certainly

¹⁰ Perla, R., T.T. Cheng and D.M. McClung. 1982. A two-parameter model of snow-avalanche motion. *Journal of Glaciology* 28(94), 197-207.

¹¹ Perla, R.I. K.Lied and K. Kristensen. 1984. Particle simulation of snow avalanche motion. *Cold Regions Science of Technology* 9, 191-202.

¹² Hung, O. A. (2009). Two numerical models for landslide dynamic analysis. *Computers & Geosciences*, Vol 35(5), 978-992.

not on the order of a Size 3 avalanche (100 kPa). An impact pressure of 5 kPa could push in doors; a pressure of 30 kPa could destroy a wood frame structure (McClung & Schaerer, 2006).

It is important to emphasize that the information discussed above is preliminary and not meant for residential zoning purposes. It is presented to highlight potential avalanche risk to structures in the area for the purpose of making recommendations for management of risk and potential future work required.

6.0 Assessment of Potential Avalanche Risk

6.1 Residential Structures at Cedar Boulevard

The analyses presented in Section 5.0 indicate that should the landslide scar remain in its currently de-forested state, there is potential for a Size 2 or 2.5 avalanche to impact residential areas along Cedar Boulevard. In consideration of the low snow supply, avalanches of this size are not expected to occur in this path with a frequency greater than 1 in 10 years. Over time this hazard will decrease as the forest regenerates in the landslide scar.

An avalanche in this path could potentially affect parts of Lots 15191, 15201, 15221 and 15211. Lot 15231 is not likely to be affected by avalanches in the west channel. Modelling of avalanche motion indicates that if such an avalanche were to occur, it could run out beyond the toe of the slope and affect one or more of the existing residential structures on these properties.

CAA (2002) provides guidelines for avalanche risk zoning for occupied structures, with the thresholds of 30 kPa for impact pressure and 300 years for return period. Preliminary analyses show that impact pressures from a design avalanche on this site could be on the order of 10-20 kPa, which is lower than the 30 kPa threshold within a 100-300 year time frame. Thus, parts of these properties may lie within the Blue risk zone, as defined by CAA (2002). The criteria only apply in the case of avalanches that could be destructive to structures; it is not clear that this path is capable of producing impact pressure sufficient to damage a house. This would need to be established by further detailed analyses for avalanche risk zoning purposes.

Based on this assessment, we recommend that avalanche risk zoning should be completed for any new construction within Lots 15191, 15201, 15221 and 15211. Development could occur in areas designated as White (low risk) zones, but should be restricted in areas identified within the Blue (moderate) or Red (high) risk zones.

If the existing structures in Lots 15191, 15201, 15221 and 15211 are to remain being used for residential purposes and avalanche risk zoning not completed, a seasonal restriction should be enacted that excludes winter-time occupation. The restriction should apply during the period of November 15 through April 15. This corresponds the dates in the historical records when snowpack depth may exceed the threshold depth for avalanche formation.

Mitigation of avalanche risk may be possible by extensive re-vegetation of the landslide scar or by structural means, but that would require additional assessment at a future date in order to permit future development of these properties.

6.2 Cedar Boulevard and the Cul-de-Sac

Analyses of potential avalanche runout using statistical and dynamic models indicate that there is potential for a very infrequent (e.g. 100 years or higher return period) design (Size 2.5) avalanche to affect part of Cedar Boulevard and the cul-de-sac. This effect could occur in the west channel, but is very unlikely in the east channel where there is a longer runout distance from the toe of the slope to the road. In the time that it takes for such an exceptional avalanche to occur, the landslide scar will likely be naturally re-vegetated, mitigating the risk naturally. Thus, the risk to the travelling public and workers in vehicles on Cedar Boulevard is lower than indicated by the models.

The landslide scar is capable of producing Size 2 avalanches or, at most, a Size 2.5 avalanche in a design case. The CAA (2002) guidelines recommend using a 30 year return period for avalanches > Size 2 as the threshold to initiate action for transportation routes. Since the return period for such an avalanche is much higher than 30 years and the landslide scar is not capable of producing a Size 3 avalanche, mitigation of avalanche risk is not considered necessary or recommended for Cedar Boulevard.

It is important to note that although half sizes (i.e. Size 2.5) are commonly used in the avalanche size classification system, the CAA (2002) guidelines explicitly only consider the main size classes of 1, 2, 3, 4 and 5. A Size 2.5 avalanche falls within the definition of a Size 2 avalanche under the CAA (2002) guidelines.

6.3 Highway 3

All of the analyses completed in our report indicate that there is no potential for snow avalanches to reach Highway 3 from this landslide scar. We modelled avalanches using very conservative statistical and dynamic model estimates and none of the models indicated the potential for avalanches to travel to the highway.

As discussed above for Cedar Boulevard and the cul-de-sac, even if an avalanche could conceivably travel to the highway, it would be very infrequent (e.g. 100 years or higher return period) and be a Size 2.5; neither of these criteria exceed the CAA (2002) or BC MoT threshold to initiate action for transportation routes.

The avalanche risk from the landslide scar to the travelling public and workers on Highway 3 is considered negligible, and mitigation of avalanche risk is not necessary or recommended.

6.4 Powerline and Poles

Four power/phone transmission line poles were observed during the field survey along the south edge of Cedar Boulevard (Appendix A, Photos 7 and 8). The locations of these poles are shown on the map attached to this report. Two of the poles are located in a well forested, protected location between the main landslide channels, and the other two are located on the north side of Cedar Boulevard away from the main flow path of the east and west channels.

The relevant avalanche risk criteria are shown in CAA (2002, Table 7.2) for utility or energy corridors. The line is part of the distribution network to the properties and is not part of the main

energy transmission corridor. Thus, the lower 10 year return period threshold for avalanches > Size 2 is considered appropriate for this line.

Similar to Cedar Boulevard and the cul-de-sac, analyses of potential avalanche runout using statistical and dynamic models indicate a potential for a very infrequent (e.g. 100 years or higher return period) design avalanche to affect this area. A design avalanche would be Size 2.5, which is lower than the threshold of > Size 2 avalanches. An avalanche of this size is very unlikely to affect a powerline pole in this area. Consequently, the risk to this infrastructure from avalanches within the landslide scar is considered negligible and mitigation of avalanche risk is not considered necessary or recommended.

No other significant infrastructure was identified during the field investigation or subsequent analyses.

7.0 Review of Baumann (2011) Report

The Baumann (2011) report was reviewed as part of this project, both as a source of background information for our report and to comment on their conclusions and recommendations. The following sections provide commentary on sections of Baumann (2011) that are believed to lead to incorrect conclusions and inappropriate recommendations.

7.1 Snow supply and maximum avalanche size estimates

Baumann (2011) correctly applied and analysed the Sumallo River snow survey data for this site to estimate snow supply, which results in design snowpack heights of 1.7 m, 1.4 m and 1.1 m for 100, 30 and 10 year return periods respectively. These results are consistent with our climate analyses. The Environment Canada Hope slide data, which is located at Sunshine Valley, was mentioned by Baumann (2011), but should have been used as the main source of data since it is the most representative climate station for the landslide area.

On Page 4, Baumann (2011) incorrectly applied the Spuzzum Creek snow pillow data to adjust the snow supply data upwards by 25% to unreasonably high values (2.6 m and 2.2 m for 300 year and 100 year return periods). Figures 2 and 4 in our report illustrate why it is inappropriate to use the Spuzzum Creek data to estimate snow supply in Sunshine Valley which is located at lower elevation in a rain shadow and has a much lower precipitation. The peak avalanche season at Sunshine Valley is not in mid-April as Baumann (2011) suggests, but rather December-March. Thus, the Hope Slide climate data is applicable to the landslide site without the adjustment provided in Baumann (2011).

On Page 5, Point 11, Baumann (2011) correctly states that a 300-year avalanche should be considered for inhabited structures. He incorrectly states that a 100-year avalanche should be used for avalanches that affect highways; it is actually a 30-year avalanche > Size 2 avalanche that is the typical threshold to initiate action for a highway. The important point here is that 30-year snowpack depths are typically applied to estimate maximum snow supply, not 100 or 300 year+ snowpack depths as assumed by Baumann (2011).

There is a distinct difference between a design snowpack depth (usually assumed to be 30-years) and a design avalanche; the two are not necessarily correlated. Large avalanches can occur in winters with shallow snowpack depths, and the relationship is much more complicated than simply assuming larger design snowpack depths as Baumann has done.

The result is an over-estimation of snow supply that results in an over-estimation of avalanche size (volume and mass) throughout the report.

7.2 Avalanche Size

Baumann (2011) assumes a reasonable value of 6500 m² for the combined area of the starting zone and track, and then simply multiplies this entire area by the incorrectly high snowpack depths discussed in Section 7.1 above. He then assumes that the entire snowpack is removed to ground, resulting in a Size 4 avalanche potential for this site. A full depth ground release is not likely to occur at this site for several reasons discussed in our report. First, the site is located in a maritime snow climate at low elevation which does not typically form a weak basal layer required to initiate a full depth ground release. Second, as Baumann (2011) indicates (Page 7, Point 15) and contradicts himself with, the steep starting zone (40°) will result in frequent sloughing and small avalanches through the winter during storm periods. Thus, deep snowpack depths and deep slab will not develop on this slope, and avalanches that remove the full winter snowpack are very unlikely on this slope.

On Page 7, Point 16 Baumann (2011) assumes that the snowpack would have a density of 600 kg/m³, which is denser than a typical large avalanche deposit and an excessively high value to apply for an average snowpack density. Table 5.5 of McClung and Schaerer (2006) shows typical deposit densities for a wet avalanche of 500-600 kg/m³, which describes the deposit not the slab. Average slab density is shown in McClung and Schaerer (2006) Figure 4.3.1 in the range of 50-450 kg/m³, averaging 200 kg/m³.

A review of the Sumallo River snow course data provides a mean March 1 snowpack density of 325 kg/m³. Simply adjusting Baumann's avalanche mass by this lower density results in a theoretical 100-year avalanche of 4,600 tonnes (compared to his 8,500 tonnes) and 300-year avalanche of 5,400 tonnes (compared to his 10,000 tonnes). This adjustment to a reasonable density would reduce the mass of the potential theoretical avalanche by 45%, which takes it from a Size 4 to Size 3 based solely on the typical mass criterion in the size classification (Table 1). This mass is still much too high for this avalanche path, but at least demonstrates that Size 4 avalanches will not occur in this path.

7.3 Avalanche Runout

On Page 8, Point 18 Baumann (2011) suggests that the surface roughness is very low (10 cm) and thus assumes the entire snowpack slides for the entire path. Our field review and typical practice (e.g. Table 3) indicated that an irregular bedrock and soil debris surface will create approximately 30 cm or more of surface roughness that snow needs to fill in before a relatively smooth surface can form for avalanches. This value should be removed from the potential snow available for sliding (as we have done in our report) and also reduces the frequency for Size 2

avalanche formation to less than 1 in 10 years (Section 5.2.2 of this report). This surface roughness will increase rapidly the next few years as vegetation re-establishes on this slope.

In estimating avalanche runout distances on Page 8, Baumann (2011) assumes an angle of repose of 30° for the snow. Large avalanches typically have an angle closer to 20° and whatever comes off this slope would be expected to spread into a dispersed deposit once it reaches the base of the slope. Using the estimates Baumann provides in Point 18, the height of the deposit at the toe of the slope would be 21 m. This height of snow deposit at the base of a 150 m vertical fall height slope is simply unrealistic.

We agree that avalanche runout onto the properties may be on the order of 30-40 m for an extreme avalanche, but that would be due to the dynamic flowing properties of snow avalanches, not the spreading effect of a large debris cone. The flow height of a small avalanche from this slope would be expected to be on the order of 1 m.

Baumann (2011) on Page 8, Point 18 incorrectly applies the criterion that "avalanche slidepaths with more than a 25° runout angle to the edge of a road could potentially reach the highway at unacceptable frequencies". This criterion comes from an agreement between the BC Ministry of Transportation and Ministry of Forests to determine when an avalanche assessment might be required when forest harvesting occurs above a public highway. It is nothing more than a screening tool. In some cases a 25° runout angle is relevant; in others it is not. In the case of the Sunshine Valley landslide, the runout angle for even the most extreme (e.g. non-exceedance probability, $P > 0.9$) avalanches is $> 30^\circ$, so the criterion used by Baumann is irrelevant. By that logic, the safe location would be in the river, 325 m horizontal slope distance from the top of the starting zone; this is an unrealistic runout distance for a path of this size.

Finally, in Point 20 Baumann incorrectly uses the term "mean runout". We assume that he is referring to a non-exceedance probability of $P = 0.5$, which is not a "mean runout" value. Rather, it is a reference value compared to all of the extreme (i.e. 100 year +) runouts in the Coast Range dataset. This is an extreme runout position, not a "mean" runout position. The runout distance for the maximum limit used by Baumann of 99 m corresponds to $P = 0.99$ (i.e. only 1% of the runout ratios in the dataset exceed a given value), which is in the author's opinion provides an overly conservative and unrealistic runout value for this path. A non-exceedance probability of 0.99 is more applicable to sites with exceptional runout potential due to factors such as wind-loading of snow into the starting zone, channelized runout and/or low-friction runout zone, etc. None of these factors are applicable to this site, so non-exceedance probabilities of 0.5 or 0.85 are more than adequate.

8.0 Conclusions and Recommendations

1. The scar produced by the May 26, 2011 landslide at Cedar Boulevard created a small avalanche path capable of producing Size 2 to 2.5 avalanches. The frequency of Size 2 avalanches in this path is less than 1 in 10 years based on snow supply and surface roughness in the starting zone and path. The frequency of a Size 2.5 avalanche in this path is lower than 1 in 10 years, likely on the order of 100 years.

2. Avalanche risk will naturally decrease over time as the forest cover in the landslide scar re-grows by natural means.
3. A low frequency Size 2.5 avalanche could potentially affect parts of Lots 15191, 15201, 15221 and 15211. Avalanche risk zoning should be completed for any new construction in these lots, which would identify White (low risk) zones; development should be restricted in areas identified as Blue (moderate) or Red (high) risk zones. These areas were not identified in our report, but parts of these lots are likely within a Blue Zone.
4. If the existing structures in Lots 15191, 15201, 15221 and 15211 are to remain in use for residential purposes and avalanche risk zoning is not completed, a seasonal restriction should apply during the period of November 15 through April 15. This corresponds with the dates in the historical records when snowpack depth may exceed the threshold depth for avalanche formation.
5. Mitigation of avalanche risk may be possible by extensive re-vegetation of the landslide scar or by structural means, but that would require additional assessment at a future date in order to permit future development of these properties.
6. Models indicate the potential for a very infrequent (e.g. 100 years or higher return period) design (Size 2.5) avalanches to affect part of Cedar Boulevard and the cul-de-sac. The CAA (2002) guidelines recommend a 30-year return period for avalanches > Size 2 as the threshold to initiate action for transportation routes. Since the return period is much higher than 30 years and the landslide is not capable of producing a Size 3 avalanche, mitigation of avalanche risk is not considered necessary or recommended for Cedar Boulevard.
7. All of the analyses completed in this report indicate that there is no potential for snow avalanches to reach Highway 3 from this landslide scar. Even if an avalanche could conceivably travel this distance to the highway, it would be very infrequent (e.g. 100 years or higher return period) and be a Size 2.5; neither of these criteria exceed the CAA (2002) or BC MoT threshold to initiate action for transportation routes. The avalanche risk from the landslide scar to the travelling public and workers is considered negligible, and mitigation of avalanche risk is not necessary or recommended.
8. Four powerline poles are located along the south edge of Cedar Boulevard. Since this line is part of the distribution network to the properties rather than the main energy transmission line, a 10-year return period threshold for avalanches > Size 2 is considered appropriate. There is potential for a very infrequent (e.g. 100 years or higher return period) Size 2.5 avalanche to affect this area, which is lower than the threshold to initiate mitigation. The avalanche risk to the line and poles is considered negligible and mitigation of avalanche risk is not considered necessary or recommended.

9. No other significant infrastructure was identified during the field investigation which requires an avalanche risk assessment.

With respect to our review of the Baumann (2011) report, we make the following conclusions:

1. From the list of five recommendations in the Baumann (2011) report, we agree with the intent of Recommendations 1 and 2. Recommendation 1 refers to restrictions for new construction of residences (i.e. avalanche risk zoning) while Recommendation 2 deals with restrictions on existing residential structures. However, we disagree with the dates given for occupancy restrictions. As per our Recommendation 3, set dates should be applied for restrictions (e.g. November 15-April 15) that are not dependent on the snow on ground since that is subject to interpretation; the suggested middle of May restriction is unnecessary according to our review of snow climate data.
2. Baumann (2011) grossly over-estimates the avalanche size potential and frequency of avalanches at this site, and incorrectly applied the Canadian snow avalanche size classification system. This stems from inappropriate application of snow climate data, overestimation of the potential snow volume in a design avalanche, and incorrect snow density. The landslide scar is not of a suitable scale to produce the avalanche mass and volume suggested by Baumann (2011), especially a Size 4 avalanche.
3. We disagree with Recommendations 3, 4 and 5 of Baumann (2011). The threshold return period and critical avalanche size criteria are not exceeded for Cedar Boulevard, the cul-de-sac or Highway 3, according to CAA (2002) guidelines. Consequently, we believe that implementation of an avalanche safety management plan is not warranted for this location, nor are the other mitigation measures recommended by Baumann (relocating the cul-de-sac, placing avalanche danger signs, closing the road, powerline relocation or protection). We believe these recommendations are an unnecessary result of the gross over-estimation of potential avalanche size and frequency for this path.

Report prepared by:

DYNAMIC AVALANCHE CONSULTING LTD.



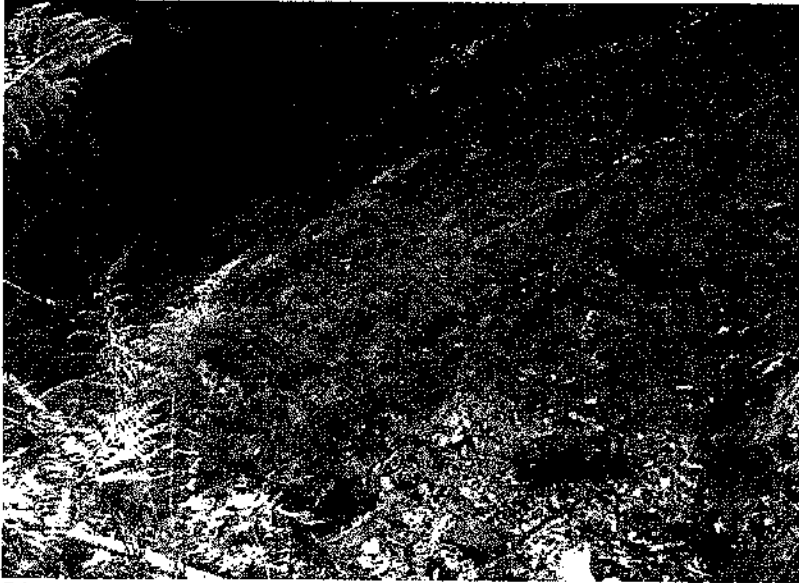
Alan Jones, P. Eng.
Principal

Reviewed by:



Kevin Fogolin, RPF
Principal

Appendix A: Site Photographs



Photograph 1. Starting zone, note irregular surface roughness of approximately 30 cm.



Photograph 2. Steep section of the upper track, immediately below the starting zone.



Photograph 3. Upper bench with landslide debris creating surface roughness of > 100 cm.



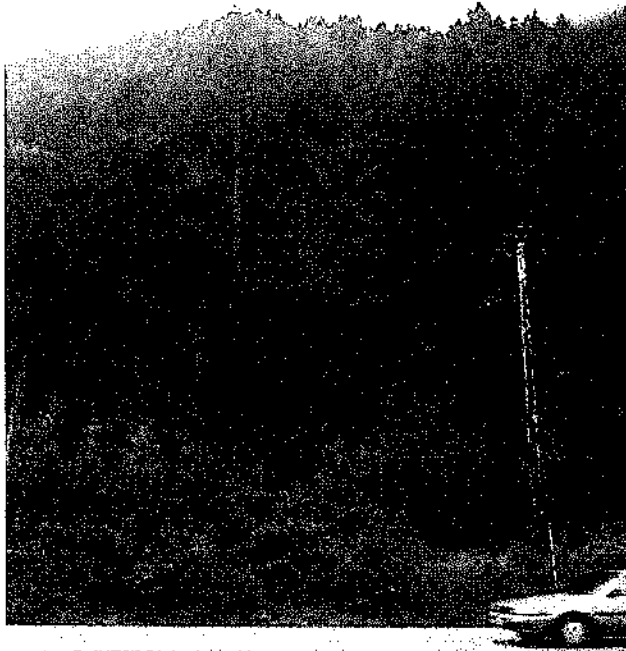
Photograph 4. Upper part of landslide showing initiation point and bedrock ridge that splits the landslide into east and west paths. [Photo credit: Golder (2011)].



Photograph 5. Looking down the East channel from the lower part of the track.



Photograph 6. Looking up the West channel from the toe of the slope.



Photograph 7. West channel and upper path observed from Highway 3.



Photograph 8. Path splits into east (left) and west (right) channels [Photo credit: Golder (2011)]

Appendix B – Path Profiles

East Channel

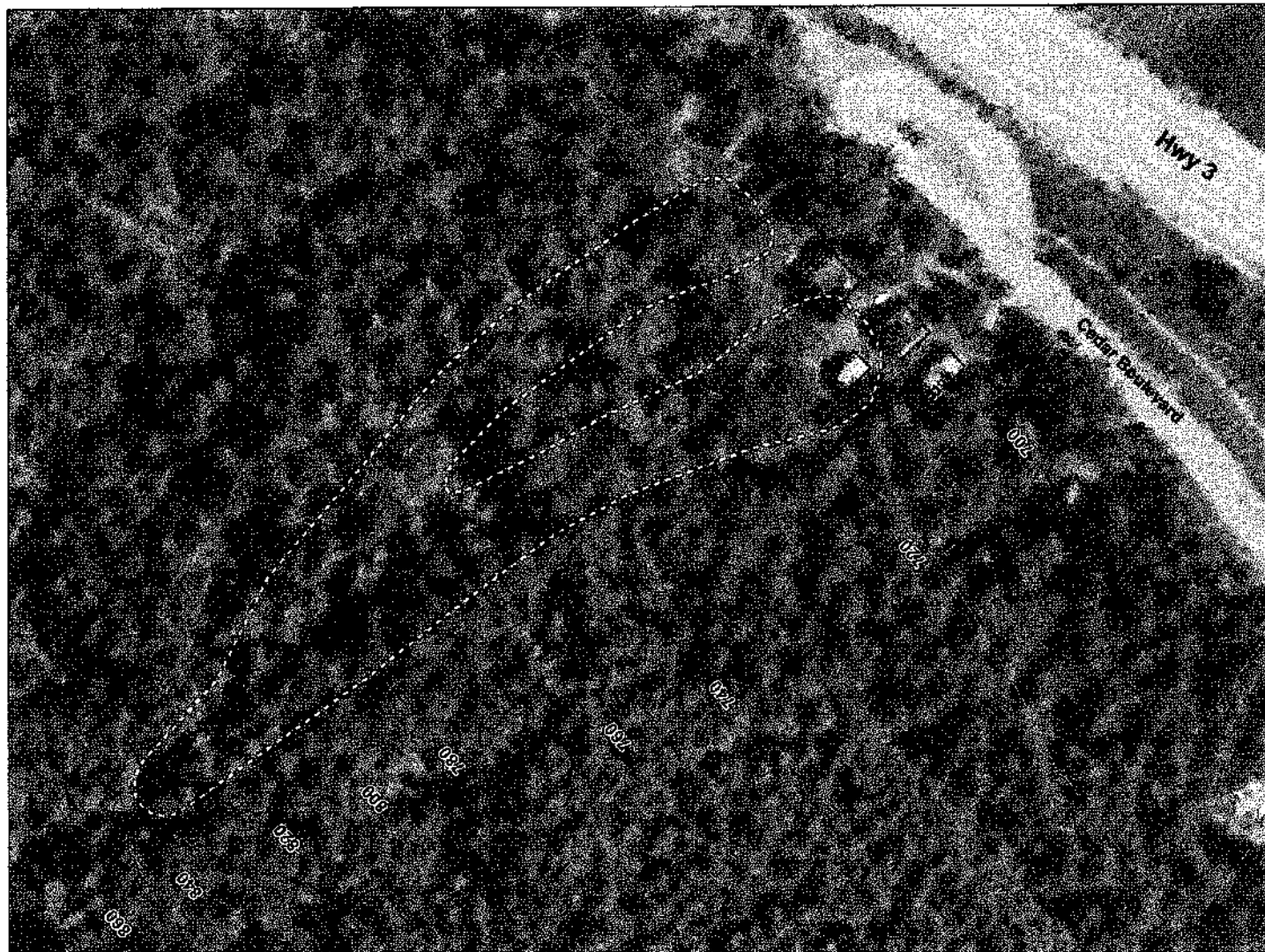
Sunshine Valley Landslide: East Channel										
Date: 11/07/2011		Observers: AJ CA								
Base Information:		Field survey: 06/07/2011								
Air Photos: None										
Other Sources: Google Earth (for distance measurements)		Calculate 5								
Segment	Elevation (m)	Horizontal Distance (m)	Width (m)	Vertical Distance (m)	Slope Distance (m)	Incline (deg)	Total Distance X (m)	Total Distance Y (m)	Ground/Terrain Features & Comments	Alpha/Beta Points
	836						0	0	Top of landslide	
1		25	17	21	30	40			Start zone; 30m surface roughness, max slab 30m long x 17m wide	
	815						25	21		
2		16	24	19	25	49			Steep bedrock	
	796						41	40		
3		19	34	16	25	40				
	780						60	56		
4		15	41	10	18	34				
	740						75	66		
5		11	45	12	16	49				
	758						86	78	Toe of steep bedrock, start of major deposit, major surface roughness with downed trees and debris	
6		23	55	10	25	24				
	748						109	88	Path splits here, main channel flows east	
7		29		33	44	49			East channel begins here.	
	715						138	121		
8		33	20	12	35	20			Steep bedrock (width for east channel), confined in moderately deep gully.	
	703						171	133	Top of major deposition zone of landslide	
9		6	13	3	7	27				
	700						177	136		Beta
10		21		3	21	6				
	697						198	139	Back of house (Lot 15201)	
11		10		1	10	6				
	696						208	140	Front of house (Lot 15201)	
12		22		3	22	8				
	693						230	143	South edge of pavement in cul-de-sac	Alpha
13		11		2	11	10				
	691						241	145	Top of bank above Hwy 3	
14		13		7	15	28				
	684						254	152	South fog line Hwy 3	
15		15		0	15	0				
	684						269	152	North fog line Hwy3	
16				684						

West Channel

Sunshine Valley Landslide West Channel									
Date: 10/35		Observers: AJ CA							
Base Information:		Field survey: 08/07/2011							
Air Photos: None									
Other Sources: Google Earth (for distance measurements)		Calculate 6							

Segment	Elevation (m)	Horizontal Distance (m)	Width (m)	Vertical Distance (m)	Slope Distance (m)	Incline (deg)	Total Distance X (m)	Total Distance Y (m)	Ground/Terrain Features & Comments	Alpha/Beta Points
1	836	25	17	21	30	40	0	0	Top of landslide Start zone, 30cm surface roughness; max slab 30m long x 17m wide	
2	815	16	24	19	25	49	25	21	Steep bedrock	
3	796	19	34	16	28	40	41	40		
4	780	15	41	10	18	34	60	56		
5	770	11	45	12	18	48	75	66		
6	758	23	55	10	25	24	86	78	Toe of steep bedrock, start of major deposit, major surface roughness with downed trees and debris	
7	748	33	25	16	37	26	109	88	Path splits here, main channel flows east West channel begins here.	
8	732	11	20	18	21	59	142	104	Steep bedrock (width for west channel)	
9	714	10	8	8	13	38	153	122	Thickest area of deposit. Slope angle likely gentler below this point.	
10	706	12	8	8	14	34	163	130		
11	698	20	10	22	27		175	138		
12	688	5	0	5	0		195	148	Toe of slope	Beta
13	688	11	1	11	6		200	148	Back of house (Lot 15233)	
14	687	17	2	17	7		211	149	Front of house (Lot 15233)	
15	685	23	1	23	2		228	151	South edge of pavement in cul-de-sac	Alpha
16	686	6	2	6	18		251	152	Top of bank above Hwy 3	
17	684	15	0	15	0		257	154	South fog line Hwy 3	
18	684	0	0	0	0		272	154	North fog line Hwy 3	

Appendix C – Sunshine Valley Cedar Boulevard Landslide Map



Sunshine Valley Cedar Boulevard Landslide

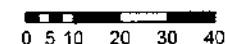
Legend

- Approximate Landslide Extent
- Power Pole
- Lot Boundary
- Building
- Contour 20m

N



Scale 1:1,000



Meters

NOTES:

Contours generated from GeoBase
DEM (20m)

Image georeferenced from FVRD
(approx 1.2 m RMSE)

Lot boundaries digitized from FVRD
Lot boundaries adjusted to fit image
and may not represent legal boundaries

Contour Interval 20 meters



Suite 201 - 103 Second St. E
Box 2845 Revelstoke, BC, Canada
V0E 2S0 tel:250.837.4466

Date: 25/07/2011

Design: ASJ

Drawn: CFA

Page 221 to/à Page 223

Withheld pursuant to/removed as

DUPLICATE

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Friday, November 28, 2014 4:11 PM
To: Caul, Doug D ABR:EX
Cc: Lewthwaite, Jennifer EAO:EX
Subject: JUMBO Authorizations Timeline
Attachments: JUMBO Authorizations Timeline.docx

For Monday. Will send to other participants (except Transportation).

Paul

Glacier Resort Ltd. ("Jumbo") Timeline of Authorizations

March 1993	Interim Agreement between the Proponent and Province, committing the Proponent to the EA review process and the Province to "negotiate and in good faith attempt to conclude" a Master Development Agreement (MDA) for the proposed development.
November 1994	East Kootenay CORE process assigns "high recreation and tourism values" to area. Project subject to Environmental Assessment (EA) review.
March 1995	Kootenay Boundary Land Use Plan approval of project subject to an EA.
July 1995	Interim Agreement between Proponent and the Province renewed
July 12, 1995	Environmental Assessment Act review commenced.
October 12, 2004	Environmental Assessment Certificate (EAC) granted with conditions.
October 2005	Review of Proponent's Master Plan commenced under the All Seasons Resort Policy.
July 12, 2007	Proponent's Master Plan approved by Mountain Resort Branch.
January 26, 2009	EAO grants 5 year extension of EAC.
June 2009	MRB advises KNC that they consider consultation on Master Development Agreement ("MDA") complete as per the Consultation Agreement and that Ministry would now proceed to a decision.
March 2011	The KNC write directly to Premier Clark, asserting opposition to the proposed ski resort.

March 2012	MRB announces approval of MDA
May 2012	A Road Use Permit was issued to the Proponent to allow for the use the Jumbo Forest Service Road for industrial purposes, including maintenance and upkeep of the road.
February 19, 2013	Jumbo Glacier Mountain Resort Municipality incorporated
August 2014	Jumbo Glacier Mountain Resort Municipality council adopts zoning bylaw allowing Master Plan infrastructure to be constructed in the municipality.
August 2014	Permit from BC Safety Authority for Ski Lifts
August 11, 2014	Land Act and Forest Act tenures established for various base area improvements, including: a day lodge, a water reservoir, a service building, and two lifts. The timber harvesting authorization also includes the removal of timber from base area roadways.
September 24, 2014	Building permits issued by Jumbo Glacier Mountain Resort Municipality
October 12, 2014	EAC set to expire unless project is deemed to have been substantially started by the Minister of Environment.

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Friday, November 28, 2014 3:45 PM
To: Caul, Doug D ABR:EX
Cc: Lewthwaite, Jennifer EAO:EX
Subject: Options paper for Monday
Attachments: Options paper.docx

Doug,

I will be sending to all on this afternoon's call as well. I have left off legal considerations column we discussed – I do not think it fits well at this stage.

Paul

Timing of C& E Review and Substantially Started Determination

Options

1. Proceed with substantially started determination with the following possible outcomes:
 - Conclude that further information is required;
 - Determine that the project is substantially started – excluding consideration of the Day Lodge
 - Determine that the project is NOT substantially started – including consideration of the Day Lodge
2. Delay substantially started determination until compliance determination is made with respect to the Day Lodge

Proposed Timeline/Approach For Option 2

	Timing	C &E Review of Avalanche Hazard Area Condition	Substantially Started Determination	Communications
1.	November 26		Advise we are delayed in preparing our draft substantially started report to Minister. Complete	Communication with Jumbo Glacier Resorts/ KNC and Shuswap Indian band
2.	Ongoing		Address issue of whether Day Lodge relocation was under proper tenure (FLNRO) Near completion	
2.	ASAP	Preliminary response to EAO C & E from FLRNRO/Transportation re: inquiry on condition compliance - which provides basis/rationale on continuing inquiry. Insufficient information at this time to determine whether siting of the Daylodge is within or		Internal Communication only

		outside the Avalanche Hazard Area		
3.	ASAP	EAO C & E advises Jumbo Glacier Resorts that after an initial review we have determined we require further information. Confirm whether they have any additional information (list what information we have from them)		Only communicated to Jumbo Glacier Resorts as it is part of a C & E
4.			Advise that determination will be delayed pending more information with regard to compliance with Avalanche Hazard Area condition.	Communication with Jumbo Glacier Resorts/ KNC and Shuswap Indian band. Communications on the process have been posted on the EAO Website Possible broader communications opportunity
5.	ASAP	Province (EAO or FLNRO or both) seeks a preliminary opinion from an Avalanche expert whether they can give an opinion re: siting of Daylodge or whether further work is required. If further work required, what is recommended work .		Part of C& E investigation.
6.	Target – Mid December	Expert prepares opinion.		
7.	Following expert advice	<u>Dependant on the answer from the expert</u> If expert can confirm location is not within avalanche hazard area,		Part of C & E investigation

		<p>then advise that project is in compliance. Proceed to step 9.</p> <p>If expert cannot provide conclusive opinion, letter to Jumbo Glacier Resorts from C & E advising that further information required as per opinion and requesting a study be obtained by Jumbo Glacier Resorts (prepared on certain terms and conditions acceptable to the Province i.e. independent review)</p>		
8.	Following receipt of further information (if required)	Study Received		
9		Compliance determination completed		Determination is communicated to Jumbo Glacier Resorts. Following due process - could be made public
10.			Substantially started determination resumes	
11.			Final report shared to parties including determination on compliance	
12.			Referred to Minister for Decision	

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Thursday, November 27, 2014 2:12 PM
To: Cousins, Autumn EAO:EX; Leake, Greg EAO:EX
Cc: Pizarro, Kirsten EAO:EX; O'Connor, Lisa EAO:EX
Subject: RE: Request from MO: Jumbo Information

I would suggest something different with respect to question 1. I take it this is not for communication purposes

Perhaps.....

Question 1: The term 'avalanche hazard area' was used during the environmental assessment review of this project in 2004 (which began in 1995). It is not a standard industry term used currently and its use in the assessment report appears to mean something different an avalanche path; a historical avalanche path. Might be closer to say an avalanche zone. It appears that the current industry practice with buildings is to do an assessment and identify colored zones (red; blue and white) based on expect impact pressures from an avalanche and their expected return periods. Our preliminary thinking is that an avalanche hazard area would equate to areas where construction of certain buildings would be prohibited or restricted (red and blue). This is what we are seeking advice on from experts but it seems to be the direction this is heading.

Question 2:

- The full Master Plan is here: http://www.for.gov.bc.ca/mountain_resorts/resort_plans/approved/Jumbo.htm.
- The avalanche maps in the Master Plan are found here (page 8 and 21) (: http://www.for.gov.bc.ca/ftp/mountain_resorts/external/!publish/web/resort_plans/approved/Jumbo/2_A_avalanche_studies.pdf and here (page 58 is the map he may be most interested in): http://www.for.gov.bc.ca/ftp/mountain_resorts/external/!publish/web/resort_plans/approved/Jumbo/5-A_JumboRouteStudy.pdf .
- Please note that government agencies recently determined that these maps are:
 - preliminary,
 - have not been prepared to industry standards for this stage of the development;
 - focussed on roads primarily; and
 - may have a margin of error of 150-200m.

From: Cousins, Autumn EAO:EX
Sent: Thursday, November 27, 2014 1:39 PM
To: Leake, Greg EAO:EX; Craven, Paul EAO:EX
Cc: Pizarro, Kirsten EAO:EX; O'Connor, Lisa EAO:EX
Subject: RE: Request from MO: Jumbo Information

Paul should review this before it goes to MO, but here is a draft response for his consideration. I dropped Doug off this email trail for now until Paul has reviewed.

Question 1: EAO recently learned that 'avalanche hazard area' is not an industry standard term. As part of the investigation into condition 36, EAO C&E is working with subject matter experts to interpret this term and define it based on the Canadian Avalanche Association's recommended practices.

Question 2:

- The full Master Plan is here: http://www.for.gov.bc.ca/mountain_resorts/resort_plans/approved/Jumbo.htm.

- The avalanche maps in the Master Plan are found here (page 8 and 21) (: http://www.for.gov.bc.ca/ftp/mountain_resorts/external/!publish/web/resort_plans/approved/Jumbo/2_A_avalanche_studies.pdf and here (page 58 is the map he may be most interested in): http://www.for.gov.bc.ca/ftp/mountain_resorts/external/!publish/web/resort_plans/approved/Jumbo/5-A_JumboRouteStudy.pdf .
- Please note that government agencies recently determined that these maps are:
 - preliminary,
 - have not been prepared to industry standards for this stage of the development;
 - focussed on roads primarily; and
 - have a margin of error of 150-200m.

From: Leake, Greg EAO:EX

Sent: Thursday, November 27, 2014 1:13 PM

To: Cousins, Autumn EAO:EX; Craven, Paul EAO:EX

Cc: Pizarro, Kirsten EAO:EX; O'Connor, Lisa EAO:EX; Caul, Doug D EAO:EX

Subject: Request from MO: Jumbo Information

Paul and Autumn:

Matt would like to know the following:

- Commitment #36 says that the proponent has committed "that the proposed residential and commercial structures will be located completely outside the avalanche hazard area".
 - He would like to know the definition or description of "the avalanche hazard area".
- Commitment #37 says "that every attempt will be made to locate the ski run departure and arrival stations outside the mapped and potential avalanche runs as shown in the Master Plan layout".
 - He would like to see the Master Plan referred to.

G.

Greg Leake

Director

Client Communications & Engagement

BC Environmental Assessment Office

(250) 387-2470

Pizarro, Kirsten EAO:EX

From: Caul, Doug D ABR:EX
Sent: Thursday, November 27, 2014 2:09 PM
To: Lewthwaite, Jennifer EAO:EX
Cc: Craven, Paul EAO:EX
Subject: Re: MMP and MST meeting Monday

If this has been set, let's get the MOTI folks in for the first 15-20 minutes.

Paul - plse plan to attend. Don't make a trip just for this if telepresence is the plan. I am thinking an agenda something like:

- MOTI - tech info
- context setting (sub st, approvals and authorizations, rk and c and e question)
- next steps incl timing and messaging.

I had a chat with MMP today and she is good with the emerging plan and add a couple of thoughts to the mix.

Let's connect this afternoon when I return with Greg.

Dc

Doug Caul
Associate Deputy Minister
Environmental Assessment Office

> On Nov 27, 2014, at 7:25 AM, "Lewthwaite, Jennifer EAO:EX" <Jennifer.Lewthwaite@gov.bc.ca> wrote:

>

> Nothing yet - when I talked to Julia she said something about lining up MOTI too and they hadn't found a time. I'll call when I get in.

>

> Sent from my iPhone

>

>> On Nov 26, 2014, at 11:52 PM, "Caul, Doug D EAO:EX" <Doug.Caul@gov.bc.ca> wrote:

>>

>> Hey Jen. Any word on this for Monday re Jumbo? Plse chase.

>>

>> Thanks

>> Dc

>>

>> Doug Caul

>> Associate Deputy Minister

>> Environmental Assessment Office

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Monday, November 24, 2014 12:02 PM
To: Caul, Doug D ABR:EX
Cc: Lewthwaite, Jennifer EAO:EX
Subject: FW: avalanche material
Attachments: Jumbo Glacier Resort and new RK Heli-Ski allegations; Jumbo Glacier Resort and the avalanche paths; avalanche exerpt from JGR-Response-to-Ktunaxa-et-al-Nov21-2014-r(2).xps; Environmental Assessment Office_.pdf

This is the material Autumn sent to Mike. It includes JGR's latest response.

Paul

From: Cousins, Autumn EAO:EX
Sent: Saturday, November 22, 2014 4:23 PM
To: Boissonneault, Mike TRAN:EX
Cc: Craven, Paul EAO:EX; Milne, Andrew EAO:EX
Subject: avalanche material

Hi Mike

Thanks again for sharing your expertise with us on Monday. If you are free to come to our Assoc DM's office for the meeting that would be great – always easier in person than by phone if that works for your schedule. If you'd like to meet up with me and Drew in advance of the meeting we'll make sure we're available.

You may already have some of these but I've attached a few things to inform our discussion.

- Complaint from rk heliski (Environmental Assessment Office.pdf)
- Oberto Oberti responses (emails X 2 plus one .xps document)

Thanks
Autumn

Pizarro, Kirsten EAO:EX

From: Oberto Oberti <ooberti@obertiarchitecture.com>
Sent: Wednesday, November 19, 2014 4:19 PM
To: Brown, Psyche FLNR:EX
Cc: Humphrey, Gordon J FLNR:EX; Cousins, Autumn EAO:EX; Milne, Andrew EAO:EX; Tommaso Oberti; Peter Schaerer
Subject: Jumbo Glacier Resort and new RK Heli-Ski allegations

Dear Psyche,
Peter Schaerer ^{s.22} not working on any other project, but he was kind enough to come again to my office and to review the RK Heli-Ski avalanche report and the Jumbo Glacier Resort project material, with which he has had familiarity since 1991. He has spent several days studying the topography as well as the drawings and the photographic material. Following his latest review he authorized me to quote him as follows:

- 1. The daylodge is placed in an area that is outside the lateral boundary of past avalanches, and future larger avalanches will be prevented by explosive devices.*
- 2. The resort village is not within reach of avalanche run outs.*

We also hope to be able to continue to avail ourselves of his expertise in the preparation of the management plans before Glacier Resorts Ltd. opens the ski area.

We are preparing our full responses to Paul Craven at the Environmental Assessment Office for Friday, as requested.

Kind regards
Oberto

--

oberto oberti architecture and urban design inc.
660 - 1188 West Georgia Street
Vancouver, BC V6E 4A2
www.obertiarchitecture.com

Tel: (604) 662-7796
Fax: (604) 662-7958

CAUTION:

This message is confidential. It may also be privileged. If you have received it by mistake, please let us know by email reply and delete it; you may not copy or disclose its contents to anyone. Our work is copyrighted and may not be modified, repurposed or distributed without prior written authorization by us. Please note the integrity of email cannot be guaranteed on the Internet. Thank you.





October 30, 2014

To:
Ms. Autumn Cousins
Manager, Policy and Compliance
BC Environmental Assessment Office,
via Email to autumn.cousins@gov.bc.ca and eco.compliance@gov.bc.ca
PO Box 9426 Stn Prov Govt
Victoria, BC V8W 9V1

From:
Mr. Graham Holt, ACMG, Professional member CAA
General Manager, RK Heliski
Invermere, B.C.

RE: Extreme Avalanche Hazard at New Jumbo Glacier Resort (JGR) Daylodge Building Site

RK Heli-Ski Panorama Inc. has prepared a summary report in order to provide accurate and detailed information with respect to the "substantial construction", for Jumbo Glacier Resort (JGR).

Our company has operated for 44 years providing heli-ski adventures to clients from 52 different countries. The purpose of this report is to communicate to you our most recent and important findings with respect to the public avalanche danger and the new location of the JGR daylodge and service buildings in an obvious high frequency, high magnitude avalanche path. We believe that the location is in direct contravention of the EA Certificate condition #36: "...the proposed residential and commercial structures will be located completely outside the avalanche hazard area".

RK Heliski has been a land steward of the Jumbo Region for a remarkable 44 years. We have diligently monitored wildlife and worked with government agencies with respect to species at risk and other environmental initiatives. RK also has been professionally engaged in the exchange of information regarding transportation (BC Ministry of Transport), forestry, public safety and other topics of concern in the region for many years, far before the Jumbo Glacier Resort was started. It is our professional opinion and our direct experience that avalanches will continue impacting public safety on the Toby Creek Road, Jumbo Creek Forest Service Road and the Upper and Lower Jumbo Valley. We serve our community as a search and rescue agency for backcountry user groups, commercial business or stakeholders. Over the past four decades, we have provided numerous rescues where the outcome would have been different if we were not in the area.

Box 695
Invermere, BC V0A 1K0
Canada
1-800-661-6060 tf / 250-342-3889 p / 250-342-3466 fx





We are uniquely and expertly qualified to comment on public safety in this remote wilderness area, most specifically with respect to avalanche danger. It is in this regard that we write to you.

On Sept.5, 19, and Oct. 25 2014, we toured the Upper Jumbo Valley to witness the state of affairs with JGR. To our shock, we saw a valley being destroyed by this last ditch effort to show substantial progress on this project. **We noted that the building site for the daylodge was changed at the last minute; this new location is now within a large and active avalanche path.** Given the new location for the building site, we would like to share RK's valuable 44yr history of witnessed natural avalanches and explosive triggered avalanches that will provide significant evidence to show that this new lodge location poses a significant public safety and related infrastructure risk.

Please note that although the video footage ([YouTube, here](#)) and supporting photographs included in this letter are from explosive triggered avalanches, the Jumbo area also experiences numerous naturally occurring avalanches that produce the same or more destructive potential, as those illustrated in this letter. The potential for similar, naturally occurring size 4 avalanches is clear and is evident historically through typical avalanche mapping techniques, trim line evaluations from previous events as well as tree coring to determine stand age throughout the valley.

Class 4 avalanches are defined as follows:

<https://www.avalanche.ca/cac/library/research-and-articles/Avsize>

Size 4 Avalanches

Could destroy a railway car, large truck, several buildings or up to 4 hectares of forest.

Typically:

- Mass: 10,000 tonnes
- Run: 2,000 meters
- Force: 500 kilopascals

Every year, RK Heliski witnesses numerous natural large scale avalanches in the Upper and Lower Jumbo Valley. The location of JGR-building sites, workers, guests are at significant risk from large scale avalanches.

RK Heliski maintains a data base of yearly weather in the Upper Jumbo Valley, which is at the height of the Purcell Mountain range with peaks of over 10 000ft.

- Weather systems from the West cross over these 10 000ft peaks, producing heavy snowfalls.
- Typical storm cycles can range from 24hrs-days/weeks, with snowfall accumulations of over 2.5m during these time periods.

Box 695

Invermere, BC V0A 1K0

Canada

1-800-661-6060 tf / 250-342-3889 p / 250-342-3466 fx





- Avalanches are common during these time periods.
- Snowfall can range between <1-8cm/hr
- Significant storm cycles can produce snowfall deposits of 1.5m or greater in 48hrs

Attached within this document are photos taken within the Upper Jumbo Valley of an explosive control run completed by RK staff following a significant storm cycle. We do not complete avalanche control work after every storm as our operation allows us to choose terrain with a lower risk of avalanche potential thus limiting our exposure and vulnerability for workers and guests. On some occasions, we may choose to control the terrain (reduce the potential risk through helicopter bombing), to ensure the safety of guests, workers and the aircraft (this is a common practice done throughout the heliski industry). A stationary facility such as the daylodge in the new proposed site, would not have the option of avoidance. In the Purcell Mountain range, it's expected that you can have these size 4 avalanches or larger, naturally occur at anytime of the year when the conditions are optimal.

RK Heliski regularly uses avoidance of certain terrain during these time periods because the avalanche potential cannot be mitigated due to weather. This is a luxury not available in the case of a permanently and dangerously sited building, as is the case with the newly constructed and hastily relocated daylodge.

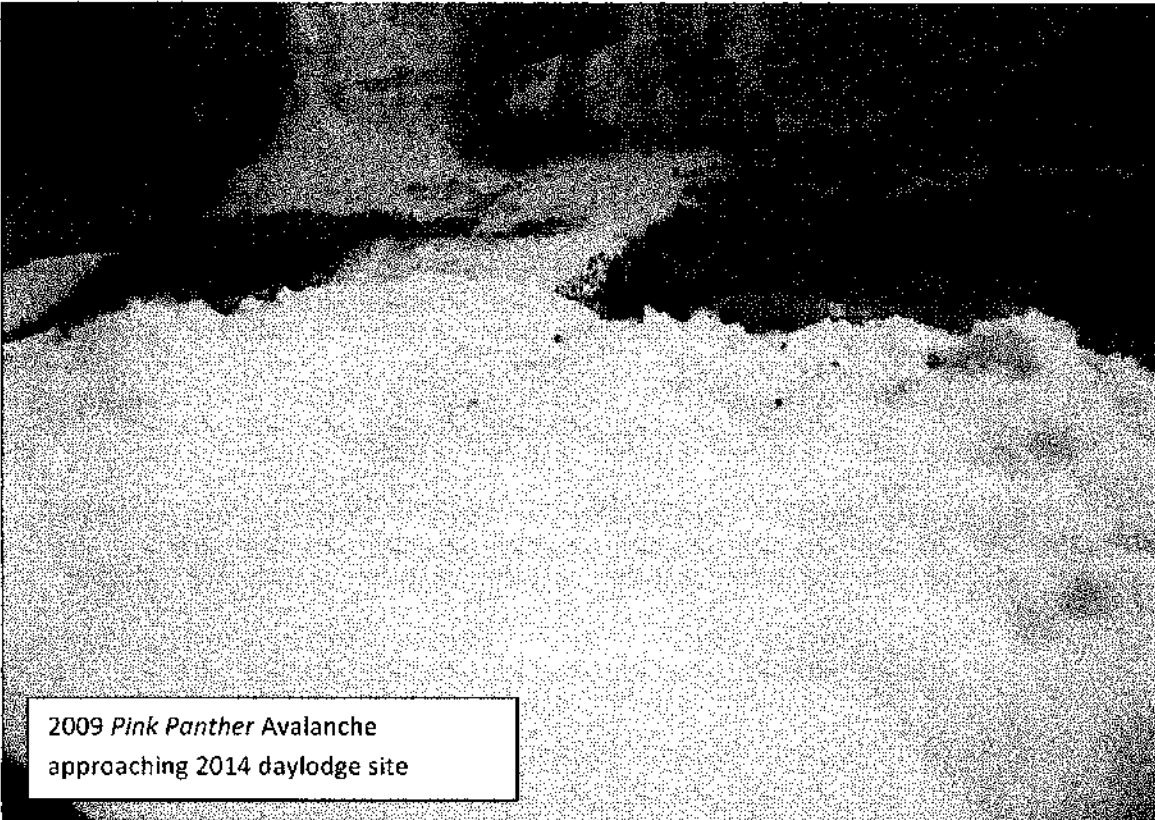
New JGR Daylodge siting in Class 4 avalanche path – Pink Panther

Below is a Google Earth snapshot and supporting KML file which outlines the current JGR daylodge building site and smaller building site (service building) in relation to historical avalanches. **The red square in the following images is the current location of the daylodge building site for Jumbo Glacier Resort** (see also photograph page 6 for building location sites approved in the JGR development plans).

The included photos are from 2009 during an explosive controlled avalanche in a ski run named "Pink Panther" for reference. Glacier Resorts Ltd. recently removed a significant number of trees that used to limit the vulnerability from avalanches at this site. Now that there are no trees in the valley bottom due to JGR clearing the area for its building sites, anything at this site will be at a higher degree of exposure, vulnerability and associated risk of avalanches. The building sites, workers and potential guests are at a very high degree of risk from avalanches impacting the area.

Box 695
Invermere, BC V0A 1K0
Canada
1-800-661-6060 tf / 250-342-3889 p / 250-342-3466 fx





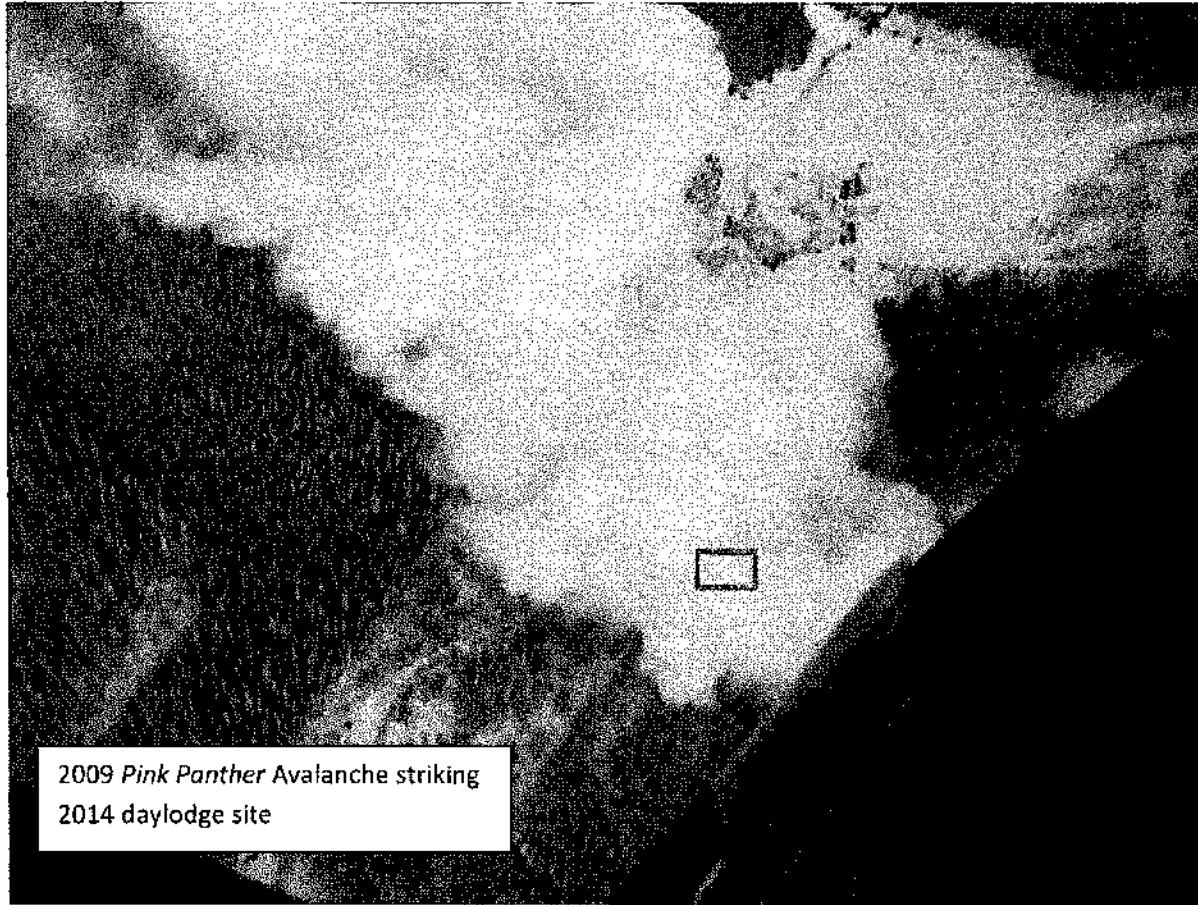
2009 *Pink Panther* Avalanche
approaching 2014 daylodge site

Box 695
Invermere, BC V0A 1K0
Canada
1-800-661-6060 tf / 250-342-3889 p / 250-342-3466 fx





The size 4 avalanche shown here from 2009 was a dry powder avalanche; estimated speed at maximum velocity approximately 200 km/hr.



See also attached high resolution photographs, photograph #s 018, 014, 016, and photo titled "towards building site south view".

Box 695
Invermere, BC V0A 1K0
Canada
1-800-661-6060 tf / 250-342-3889 p / 250-342-3466 fx





The Google Earth snapshot below shows the precise GPS'd location of the main building site and the smaller building site that were undertaken this summer of 2014 by Glacier Resorts Ltd. The Blue outline represents the current avalanche path. The red outlines the 2009 avalanche that covers the building sites.

Copyright

The other outline highlighted avalanche path in the Google Earth snapshot is the avalanche path called "Rod's" (shown in Purple). This current outline, shows the avalanche potential over time and large tracks of forest that have been obliterated towards the original proposed building site for JGR (see photo 29).

The hyperlink below shows the size 4 avalanche on the Google Earth map above from Mt. Karnak. In the last 15sec of the video, you see the area where the existing building site is for JGR (lower left of video). This avalanche hit the valley bottom and climbed up the other side of the valley by another 300m (Pink Panther avalanche path). Significant avalanche debris flowed left or South, downstream towards the

Box 695
Invermere, BC V0A 1K0
Canada
1-800-661-6060 tf / 250-342-3889 p / 250-342-3466 fx





building site. Avalanche debris deposits in the valley floor were approximately 5-15m in depth. This video was from 2013-February. Size 4 avalanche. <http://youtu.be/8kyu-l6vDYY>

While the direct risk of severe avalanche in the Jumbo Valley is of clear concern, this is not the only example we wish to bring to your attention.

Rocket Slide Path – Km 14 Toby Creek Road

The Google Earth image below is an avalanche path that produced a natural size 4 avalanche in January (see two attached high resolution photos of the “Rocket” slide path impacting the Toby Creek Road in January 2014). The location was at km 14 of the Toby Creek Road and blocked access ***beyond for the entire winter***. This is one avalanche example of many last winter that had destructive force to obliterate mature stands of trees, widening and lengthening potential avalanche paths to historical run outs. Last winter, there were many historical events that impacted the Toby Creek Road and the Jumbo Creek Forest Service Road.

Copyright

Box 695
Invermere, BC V0A 1K0
Canada
1-800-661-6060 tf / 250-342-3889 p / 250-342-3466 fx





Toby Creek Damming – KM 18

Another significant example was the damming of Toby Creek at km 18, with a deposit of 15-20m of avalanche debris that backed up Toby Creek for a period of 10 days as well as stacking mature trees and avalanche debris on Toby Creek Road (again blocking access until this past June). We felt that this had potential to back up flood water, posing a risk downstream. Our concern was the rapid erosion of the backed up flood water of the dam caused by the avalanche debris and the potential safety risk downstream towards the community of Panorama village. This avalanche caused enough concern to warrant contacting provincial emergency services to investigate the damming of Toby Creek, so that downstream, innocent public, hiking, cross country skiing or snowshoeing would not be at risk.

Copyright

Box 695
Invermere, BC V0A 1K0
Canada

1-800-661-6060 tf / 250-342-3889 p / 250-342-3466 fx





Conclusion:

While RK Heliski delivers adventures of a lifetime for our clients, we also maintain the highest standards of safety for employees and guests. Public safety is our highest priority. We provide a trained wilderness emergency response capability and we are proven land stewards of the area. In short, we are uniquely and expertly qualified to comment on avalanche hazard in the Jumbo Valley.

We state very clearly, Jumbo Glacier Resort infrastructure, workers, and potential guests are at risk of large scale avalanches that cannot be mitigated. EAO Certificate condition #36 states: "The Proponent has committed that the proposed residential and commercial structures will be located completely outside the avalanche hazard areas". With the amended daylodge siting, this condition has been dangerously violated.

Thank you for your time and consideration.

If you need any additional information, please feel free to contact me.
250 342 3889

Sincerely,

Graham Holt
General Manager
RK Heliski

Cc:

Kathryn Teneese, Chair, Ktunaxa Nation Council
Norm Macdonald, MLA-Columbia River-Revelstoke
Doug Caul, EAO Associate Deputy Minister
Paul Craven, EAO –Executive Director of Policy and Quality Assurance
Minister of Environment, Honourable Mary Polak
Minister of Community, Sport and Cultural Development, Coralee Oakes
Psyche Brown, Sr. Manager, Mountain Resorts Branch

Box 695
Invermere, BC V0A 1K0
Canada
1-800-661-6060 tf / 250-342-3889 p / 250-342-3466 fx



Pizarro, Kirsten EAO:EX

From: Oberto Oberti <ooberti@obertiarchitecture.com>
Sent: Thursday, November 6, 2014 4:11 PM
To: Brown, Psyche FLNR:EX
Cc: Humphrey, Gordon J FLNR:EX; Hunter, Bill FLNR:EX; Cousins, Autumn EAO:EX; Milne, Andrew EAO:EX; Mark Read; Arne Dohlen; 'grantcostello@jumboglacierresort.com'; Tommaso Oberti; Angelus Nzeyimana; Oana Frentoni
Subject: Jumbo Glacier Resort and the avalanche paths
Attachments: P4.a RESORT BASE AREA & AVALANCHES.pdf; P4.2 JUMBO VALLEY PLAN.pdf; JGR Daylodge & Service Bldg Location[1].pdf

Hello Psyche,

We are disappointed that project opponents have caused panic as if the project had not had the benefit of the best expertise in terms of avalanche experts, and as if the design had placed the resort in the paths of avalanches, despite the nine years of review under the EA Act, and the review under CASP for the Master Plan approval.

We are attaching more drawings that show the avalanche paths and the resort village location, which is well protected by the mountain's topographic configuration, as proven also by experience.

Regarding the untrue claim that the daylodge was placed in an area that had been cleared by avalanches, we are enclosing the lodge position relative to the picture of the site before construction, showing clearly the tree cover of the site, as well as the extreme boundary of the big avalanche quoted by the heli-ski guide that currently manages RK Heli-Ski, a company that has become a declared project opponent, and that after the EA certificate sued, appealed and lost again with a unanimous decision of three judges.

We would like to know if we have to advise the Ministers and provide them with these maps for their information and use, or you will do it.

Kind regards

Oberto

--

oberto oberti architecture and urban design inc.

660 - 1188 West Georgia Street

Vancouver, BC V6E 4A2

www.obertiarchitecture.com

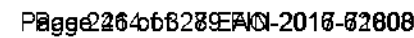
Tel: (604) 662-7796

Fax: (604) 662-7958

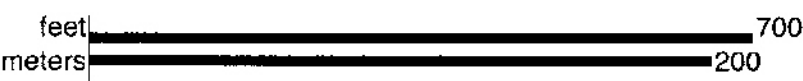
CAUTION:

This message is confidential. It may also be privileged. If you have received it by mistake, please let us know by email reply and delete it; you may not copy or disclose its contents to anyone. Our work is copyrighted and may not be modified, repurposed or distributed without prior written authorization by us. Please note the integrity of email cannot be guaranteed on the Internet. Thank you.





Google earth



Pizarro, Kirsten EAO:EX

From: Caul, Doug D ABR:EX
Sent: Tuesday, November 18, 2014 1:06 PM
To: Craven, Paul EAO:EX
Cc: Lewthwaite, Jennifer EAO:EX; Leake, Greg EAO:EX
Subject: 104763_Response_EAO_Prop_Submission_Process_Nov2014
Attachments: 104763_Response_EAO_Prop_Submission_Process_Nov2014.docx

Hi Paul – here is my suggested change on this. What MMP was driving at in a consideration of what they said they would do under the MDA compared to what they actually did.

Also – I recall from our conversation with her another of the features she will want to hear from us when the time comes to brief her. That is the ability to compare the way other recently built ski resorts have proceeded in the early stages of their development. I think this gets captured under the “...development of a ski resort” part of the letter.

Call me if you are concerned with the change I made to the letter otherwise, lets get it out and posted on the website today.

Thanks
DC



File: 30250-25/JUMBO-18

Ref: 104763

November 15, 2014

SENT VIA EMAIL

Oberto Oberti
President
Pheidias Project Management Corporation
660-1188 West Georgia St
Vancouver BC V6E 4A2
ooberti@obertiarchitecture.com

Dear Mr Oberti:

Thank you for your November 10, 2014 submission related to the pending determination as to whether the Jumbo Glacier Resort Project (Project) has been "substantially started" in accordance with section 18 of the *Environmental Assessment Act* (Act). I have now forwarded your submission to the Ktunaxa National Council (KNC) and the Shuswap Indian Band for their consideration as per the process outlined in my October 3, 2014 letter. I have requested they provide any comments in response ~~respond to to your submission EAO with any concerns~~ by November 21, 2014.

For your information, please find attached materials we have obtained or received from a number of sources, not included in the submissions, that we consider relevant to the substantially started determination, namely :

- A copy of the Environmental Assessment Office (EAO) report from the site inspection of the Project conducted by EAO officials October 13, 2014.
- A list of documents obtained or received by EAO related to this matter (Table 1 below).

We have now had the opportunity to conduct a preliminary review of the submissions and are of the view that additional information would be of assistance to use in our determination, specifically;

- Any further geotechnical information related to the Daylodge, Service Building and Lift in addition to the Geotechnical Report provided by Golder Associates, dated April 28, 2014

Environmental
Assessment
Office

Mailing Address:
PO Box 9426 Stn Prov Govt
Victoria BC V8W 9V1

Location:
1st & 2nd Fl – 836 Yates Street
Victoria BC V8W 1L8

- Any further information related to the strength of concrete that has been achieved to the Daylodge, Service Building and Lift
- Engineer of Record Certification for each phase of development, to date.

Please provide this information, and any other similar information, you consider relevant to the substantially started determination by November 21, 2014.

Upon completion of our review, we intend to draft a report for the Minister. --Note that emphasis will be placed on activities undertaken since the issuance of the certificate and in particular physical works that have altered the environment permanently. This includes construction activity as planned for under and activity such as permitting the Master development plan and agreement process, and other permitting activity that is required before construction could begin.

The report will also consider other factors, including:

- Studies and other preparatory work related to construction and undertaken following the issuance of the Environmental Assessment Certificate;
- Other permitting activity where construction has not taken place; and
- Financial efforts related to all of the above.

We regard all these factors as relevant for the Minister to consider although the weight given to them may vary. In assessing this factors, we will also consider the questions posed in the EAO User Guide and included in my October 3, 2014 letter to you.

Also as noted in my October 3rd, 2014 letter, these factors matters will be considered in the context of the ~~the~~ development of a ski resort.

We anticipate we will be in a position to share this report with you by November 26, 2014 and to provide you with a very brief period for you to identify any factual errors in the report.

Similar letters have also been sent to the KNC and the Shuswap Indian Band and all letters will be posted on the EAO website.

I trust the above is clear however, if you have any questions please do not hesitate to contact me at 250 387-6748 or by email at Paul.Craven@gov.bc.ca.

Yours truly,

Paul Craven
Executive Director, Policy and Quality Assurance

Attachments: Table 1 - Documents Received Related to the Substantial Start
Determination of Jumbo Glacier Resort Project.

Table 1: Documents Received Related to the Substantial Start Determination of Jumbo Glacier Resort Project.

Source	Document Type	Document Name
BC Safety Authority	Passenger Ropeway Installation Permit	2014 Install Permit Chair 1
EAO	Substantially Started Inspection Report	Sub Start Inspection pdf
Forests Lands and Natural Resource Operations	Jumbo Road Survey (McELHANNEY)	239010RD10
		239010RD1110
		239010RD1131
Glacier Resorts Ltd	Well Report	1314470328-001-R-Rev1-Well Testing Report-27Oct_14
Jumbo Glacier Resort Municipality	Farnham Lodge Drawings	Farnham Glacier Lodge – Structural -BPA
		A-O Cover Sheet
		A-1 Project Siting
		A-2 Site Plan
		A-3 Foundation Plan
		A-4 Main Floor
		A-5 Second Floor Plan
		A-6 Messanine Plan
		A-7 Roof Plan
		A-D1 Wall Sections
		A-D2 Details
		A-E1 Elevations
		A-E2 Elevations
		A-N1 General Notes and Schedules
		Architects Letter of Assurance (Schedule B)
		A-S1 Sections
		Farnham Glacier Lodge Location
	Jumbo Creek Service Bldg Drawings	1356-Architectural for FDN Permit
		1356-Struct Issued for FDN Permit
	Jumbo Daylodge Drawings	Jumbo Daylodge for BP-2014
		2014-09-11 Jumbo Daylodge - Foundation
	Jumbo Daylodge Information	Jumbo Daylodge Permit Application
		Jumbo Daylodge Geotech
		Jumbo Daylodge Permit and Sign
		Jumbo Daylodge Schedules
	Farnham Lodge Application	Farnham Application
		Farnham Permit and Sign
		Geotech rp131-447-0328-001-L-Rev 1-Phedias Farnham Lodge 28APR_14[1]
	Jumbo Service Building	Jumbo Service Bldg Geotech rpt
		Jumbo Service Bldg Permit and Sign

	Information	Jumbo Service Bldg Permit Application
		Jumbo Service Bldg Schedules
	Farnham Lodge Schedules	Farnham Lodge Schedules
	Jumbo Area Zoning Bylaw	Zoning Bylaw #0011 - Sched A
		Zoning Bylaw #0011 - Sched.B
		Zoning Bylaw #0011 - Sched C
		Zoning Bylaw #0011 - Sched D
		Public Hearing Report
	Farnham Creek Area Zoning Bylaw	006 Zoning Sch.C
		Bylaw 006 Zoning Map
		Bylaw 006 Zoning

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Monday, November 17, 2014 7:57 AM
To: Caul, Doug D ABR:EX
Subject: Letter Re Susn Started
Attachments: 104763_Response_EAO_Prop_Submission_Process_Nov2014.docx

Doug,

Revised per our discussion on Friday.

Paul

Page 256 to/à Page 260

Withheld pursuant to/removed as

DUPLICATE

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Friday, November 14, 2014 3:00 PM
To: Caul, Doug D ABR:EX
Cc: Lewthwaite, Jennifer EAO:EX; Russell, Jim AGRI:EX; O'Connor, Lisa EAO:EX; Leake, Greg EAO:EX
Subject: Jumbo Subs Start Follow-Up Process Letter
Attachments: 104763_Response_EAO_Prop_Submission_Process_Nov2014.docx

Doug,

Here is the letter for review. Similar letter would go to all parties (except the information request). It is in track changes so you can see the changes from the previous draft. I want to talk to you about it once you have had a chance to take a look as I have some further thoughts. You can catch me on my cell [s.22](#)

Paul



File: 30250-25/JUMBO-18

Ref: 104763XXXXXX

November 15, 2014

SENT VIA EMAIL

Oberto Oberti
President
Pheidias Project Management Corporation
660-1188 West Georgia St
Vancouver BC V6E 4A2
ooberti@obertiarchitecture.com

Dear Mr Oberti:

Thank you for your November 10, 2014 submission related to the pending determination as to whether the Jumbo Glacier Resort Project (Project) has been "substantially started" in accordance with section 18 of the *Environmental Assessment Act* (Act).
-I have now forwarded your submission to the Ktunaxa National Council (KNC) and the Shuswap Indian Band for their consideration as per the process outlined in my October 3, 2014 letter. -I have requested they respond to EAO with any concerns by November 21, 2014.

For your information, please find attached materials we have obtained or received from a number of sources, not included in the submissions, that we consider relevant to the substantially started determination, namely :

- A copy of the Environmental Assessment Office (EAO) report from the site inspection of the Project conducted by EAO officials October 13, 2014.
- A list of documents obtained or received by EAO related to this matter (Table 1 below).

We have now had the opportunity to conduct a preliminary review of the submissions and are of the view that additional information would be of assistance to use in our determination, specifically:

- Any further geotechnical information related to the Daylodge, Service Building and Lift in addition to the Geotechnical Report provided by Golder Associates, dated April 28, 2014.

Comment [RJE1]: Removed as it was included with GRL SS submission

Environmental
Assessment
Office

Mailing Address:
PO Box 9426 Stn Prov Govt
Victoria BC V8W 9V1

Location:
1st & 2nd Fl— 836 Yates Street
Victoria BC V8W 1L8

- Any further information related to the strength of concrete that has been achieved to the Daylodge, Service Building and Lift
- ~~Geotechnical Memorandum provided by Golder Associates, dated July 22, 2014, with mark-up PDF drawings, designs of mini-piles and allowable pile capacity;~~
- ~~Testing for concrete as per CSA A23.2-09 "Method of test for concrete";~~
- ~~Testing for compressive strength of concrete after 28 days of curing for all 3 objects (Daylodge, Service Building and Lift); and~~
- Engineer of Record Certification for each phase of development, to date.

Please provide this information, ~~any and~~ any other information, you consider relevant to the substantially started determination by November 21, 2014.

Upon completion of our review, we intend to draft a report for the Minister, ~~on the status of the Project. Note that emphasis will be placed on activities undertaken since the issuance of the certificate and in particular physical works that have altered the environment permanently. This includes construction activity and activity such as permitting that is required before construction could begin.~~

The report will also consider other factors, including:

~~Be advised that in our determination we intend to focus on the following factors:~~

- ~~Construction activity and activity such as permitting that is required before construction could begin;~~
- Studies and other preparatory work related to construction and undertaken following the issuance of the Environmental Assessment Certificate;
- ~~Other permitting activity where construction has not taken place; and~~
- Financial efforts related to all of the above.

We regard all these factors as relevant for the Minister to consider although the weight given to them may vary.

As noted in my October 3rd, 2014 letter, In considering these matters factors will be considered in the context of the relevant background on the development of a ski resort will also be provided for context.

Formatted: Superscript

We anticipate we will be in a position to share this report with you by November 26, 2014 and to provide you with a very brief period for you to identify any factual errors in the report.

I trust the above is clear however, if you have any questions please do not hesitate to contact me at (250) 387-6748 or by email at Paul.Craven@gov.bc.ca.

Yours truly,

Paul Craven
Executive Director, Policy and Quality Assurance

Enclosures: Table 1 - Documents Received Related to the Substantial Start
Determination of Jumbo Glacier Resort Project.

Table 1: Documents Received Related to the Substantial Start Determination of Jumbo Glacier Resort Project.

Source	Document Type	Document Name
BC Safety Authority	Passenger Ropeway Installation Permit	2014 Install Permit Chair 1
EAO	Substantially Started Inspection Report	Sub Start Inspection pdf
Forests Lands and Natural Resource Operations	Jumbo Road Survey (McELHANNEY)	239010RD10
		239010RD1110
		239010RD1131
Glacier Resorts Ltd	Well Report	1314470328-001-R-Rev1-Well Testing Report-27Oct_14
Jumbo Glacier Resort Municipality	Farnham Lodge Drawings	Farnham Glacier Lodge -- Structural -BPA
		A-0 Cover Sheet
		A-1 Project Siting
		A-2 Site Plan
		A-3 Foundation Plan
		A-4 Main Floor
		A-5 Second Floor Plan
		A-6 Messanine Plan
		A-7 Roof Plan
		A-D1 Wall Sections
		A-D2 Details
		A-E1 Elevations
		A-E2 Elevations
		A-N1 General Notes and Schedules
		Architects Letter of Assurance (Schedule B)
		A-S1 Sections
		Farnham Glacier Lodge Location
	Jumbo Creek Service Bldg Drawings	1356-Architectural for FDN Permit
		1356-Struct Issued for FDN Permit
	Jumbo Daylodge Drawings	Jumbo Daylodge for BP-2014
		2014-09-11 Jumbo Daylodge - Foundation
	Jumbo Daylodge Information	Jumbo Daylodge Permit Application
		Jumbo Daylodge Geotech
		Jumbo Daylodge Permit and Sign
		Jumbo Daylodge Schedules
	Farnham Lodge Application	Farnham Application
		Farnham Permit and Sign
		Geotech rp131-447-0328-001-L-Rev 1-Phedias Farnham Lodge 28APR_14[1]
	Jumbo Service Building	Jumbo Service Bldg Geotech rpt
		Jumbo Service Bldg Permit and Sign

	Information	Jumbo Service Bldg Permit Application
		Jumbo Service Bldg Schedules
	Farnham Lodge Schedules	Farnham Lodge Schedules
	Jumbo Area Zoning Bylaw	Zoning Bylaw #0011 - Sched A
		Zoning Bylaw #0011 - Sched.B
		Zoning Bylaw #0011 – Sched C
		Zoning Bylaw #0011 – Sched D
		Public Hearing Report
	Farnham Creek Area Zoning Bylaw	006 Zoning Sch.C
		Bylaw 006 Zoning Map
		Bylaw 006 Zoning

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Thursday, November 13, 2014 12:12 PM
To: Caul, Doug D ABR:EX
Subject: RE: Jumbo letter

Yes. Of course. Submissions have now been exchanged. Confidentiality issue was resolved. We are going through submissions carefully to see what changes we may need to make to the letter. ETA on letter tomorrow morning.

Sent from my Windows Phone

From: Caul, Doug D EAO:EX
Sent: 11/13/2014 12:06 PM
To: Craven, Paul EAO:EX
Cc: Leake, Greg EAO:EX; Lewthwaite, Jennifer EAO:EX; Kennedy, Karla EAO:EX
Subject: Jumbo letter

Hi Paul – plse send the letter we plan to send and post on Monday re: substantially started to me tomorrow for a review in advance. Thanks.

Greg – good for you to be aware as it may elicit public commentary.

DC

Doug Caul

Associate Deputy Minister

Environmental Assessment Office

Pizarro, Kirsten EAO:EX

From: Caul, Doug D ABR:EX
Sent: Thursday, November 13, 2014 12:07 PM
To: Craven, Paul EAO:EX
Cc: Leake, Greg EAO:EX; Lewthwaite, Jennifer EAO:EX; Kennedy, Karla
Subject: Jumbo letter

Hi Paul – plse send the letter we plan to send and post on Monday re: substantially started to me tomorrow for a review in advance. Thanks.

Greg – good for you to be aware as it may elicit public commentary.

DC

Doug Caul
Associate Deputy Minister
Environmental Assessment Office

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Friday, November 7, 2014 11:33 PM
To: Caul, Doug D ABR:EX
Subject: FW: Jumbo Glacier Resort Construction Start Report
Attachments: JGR-Construction-Start-Report-r.pdf; JGR-ConstructionStart-Nov7-2014.pdf

FYI. Submissions from Jumbo. I have done a preliminary review. They are asking that we keep financial data confidential – I am checking implications on process re: KNC if we do. Also seeking more info from Mountain Resorts Branch re: Kicking Horse and Revelstoke – which are raised in the submission. They do also talk about their planned phased development. Our detailed analysis will begin once we have KNC's materials on Monday.

From: Tommaso Oberti [<mailto:toberti@pheidias.ca>]
Sent: Friday, November 7, 2014 4:16 PM
To: Craven, Paul EAO:EX
Cc: Cousins, Autumn EAO:EX; Milne, Andrew EAO:EX; Grant Costello; Oberto Oberti; Brown, Psyche FLNR:EX; Humphrey, Gordon J FLNR:EX
Subject: Jumbo Glacier Resort Construction Start Report

Hello Paul,

Please see the attached report and cover letter. A printed copy, including all the appendices, will arrive on Monday.

You can also download a higher resolution version of the report and its appendices from our FTP server at these coordinates:

website **s.15**

username: **s.15**
password: :

Please note that all of the financial information in the report is confidential — also please let me know if you have trouble downloading any of the documents.

With kind regards,

Tommaso Oberti
Vice President

--

Pheidias Project Management Corp.
Development Management & Design

<http://www.pheidias.ca>
660 - 1188 West Georgia Street
Vancouver, BC V6E 4A2

Tel: 604.662.8833
Mobile: 604.613.2949
Fax: 604.662.7958

CAUTION:

This message is confidential. It may also be privileged. If you have received it by mistake, please let us know by email reply and delete it; you may not copy or disclose its contents to anyone. Our work is copyrighted and may not be modified, repurposed or distributed without prior written authorization by us. Please note the integrity of email cannot be guaranteed on the Internet. Thank you.

Jumbo Glacier Resort

Making the “Substantially Started” Determination

November 7, 2014

Prepared for:
Glacier Resorts Ltd.

Submitted to:
Environmental Assessment Office of British Columbia

ABSTRACT

Jumbo Glacier Resort must be determined to be “substantially started” as of October 12, 2014 in accordance with its Environmental Assessment Certificate. This report informs the Environmental Assessment Office of British Columbia of the reasons and facts supporting such a determination.

Table of Contents

1. Introduction	5
2. What Is Being Started?	7
3. What <i>Has</i> Been Started?	9
4. Limiting Factors	10
5. Background.....	11
5.1. A Change to the EA Act and the Master Development Agreement	11
5.2. Farnham Glacier Start.....	12
5.3. Legal Actions Causing Delays	14
5.4. Impact of Road Closures & Constraints to Site Access	15
5.4.1. Removal of Bridge to Resort Base Site.....	15
5.4.2. Construction of a New Access Road.....	15
5.4.3. Decision to Improve the Existing FSR.....	16
5.4.4. Relocation of the Daylodge & Construction Start	18
6. Project Chronology: August 2004 to October 2014.....	19
7. Effort and Expense Summary	26
7.1. Effort	26
7.2. Expense Summary.....	27
8. Future Work	29
9. Conclusion.....	30

List of Appendices

1. Construction Photos
2. Daylodge Architectural & Structural Drawings
3. Pricing for Daylodge (Confidential)
4. Service Building Architectural & Engineering Drawings
5. Pricing for Service Building (Confidential)
6. Pump Well Testing Report
7. Farnham Glacier Lodge Architectural and Structural Drawings
8. Farnham Glacier Lodge Pricing (Confidential)
9. Farnham Glacier Soils Report
10. Lift 1.1 Drawings
11. Jumbo Valley Route Study
12. Avalanche Mapping
13. Opening Phase Drawings

1. Introduction

This report has been prepared on behalf of our client, Glacier Resorts Ltd., to provide the facts, context and reasoning of why the Jumbo Glacier Resort project has achieved a substantial start in compliance with the condition of the project's environmental assessment certificate signed on October 12, 2004.

We believe that the project meets the criteria to be considered "substantially started" as outlined by the EAO User Guide:

- There has been a significant investment in time, effort and resources to physically develop the main project elements required for a project opening;
- The work which occurred during the construction window this summer and early fall included permanent structures that are essential to the project's opening;
- All of the work done to date has been undertaken exclusively to achieve a project opening and provide access to the upper Jumbo Valley for public skiing and sightseeing.

Everything that could be done within the regulatory and physical constraints imposed on the project has been done. In order to inform this opinion and help make a determination that the project has "substantially started" we will provide:

- An explanation of what the project opening will be and a comparison to other resorts in British Columbia;
- A list of project elements that have been constructed to date;
- A history of the project's approval process and its impact on construction timelines since the awarding of the environmental assessment certificate in 2004;
- A timeline and summary of the work;
- A cost summary of the work done to date;
- An explanation of the remaining work required to achieve a project opening; and
- Supporting photographs, documents and drawings.

Copyright

View of Upper Jumbo Valley

2. What Is Being Started?

The goal of any project under the EA Act is to begin operations. Unlike a mine or a pipeline, which require most, if not their entire infrastructure to be built before operations can begin, ski resorts begin operations more modestly and are built incrementally over many decades. The phasing plan in the Jumbo Glacier Resort Master Plan spans 25 years, however there is nothing that stipulates the resort must be built in 25 years; it could be much longer.

Because of the incremental nature of development, the resort is designed to be profitable from the opening phase and is on track for a winter 2016 opening. The first stage (year one) of the opening phase will consist of a daylodge to accommodate day visitors, a service building, a quad chairlift (lift 1.1 in the Master Plan), and a platter lift. This would create a ski area with a vertical rise of 500m and access to heli-skiing quality snow and terrain. Many ski areas in British Columbia started modestly in this manner. Day skiers will arrive from Panorama and the resort will be on the map, especially for those looking for “slack-country” access to the upper Jumbo Valley.

The second stage of the opening phase, which is expected to be ready in the second year of operations, is analogous to the opening phase of Kicking Horse Mountain Resort and Revelstoke Mountain Resort, the two newest resort projects in British Columbia.

At Jumbo Glacier Resort, access will be provided via gondola to the summit of Glacier Dome, which has a spectacular viewpoint of Jumbo Glacier and the Lake of the Hanging Glacier for sightseeing tourists, and unlike any other resort in North America, will permit year-round glacier skiing on Glacier Dome. The main components of the opening phase (stage one and stage two) are:

- A daylodge at the resort base;
- A service building at the resort base;
- A quad chairlift (lift 1.1 of the Master Plan);
- A handle tow lift for ski school and to permit ski-in ski-out at the resort base;
- A gondola lift (lift 1.3 of the Master Plan);
- A teahouse/restaurant at the top of Glacier Dome; and
- A glacier T-bar for glacier skiing in winter and summer.

To provide context, Whistler Blackcomb, now the largest ski resort in North America, opened in 1965 with a four-person gondola, a double chairlift, two T-bars, a daylodge and mountain-top restaurant. Revelstoke Mountain Resort (2008) and Kicking Horse Mountain Resort (2000) also started similarly. Revelstoke was an expansion of an existing ski hill and opened with the construction of a daylodge, a single gondola and a quad chairlift. Kicking Horse’s opening phase saw the construction of a single gondola, a quad chairlift, a daylodge and a mountaintop restaurant.

A project start that includes the Glacier Dome gondola in the first year of operations remains possible; however, given the short construction window at the project site (which due to elevation and environmental prudence is much shorter than the above-mentioned resorts), it is improbable that construction of the Glacier Dome gondola can be completed at the same time that the stage one components are ready.

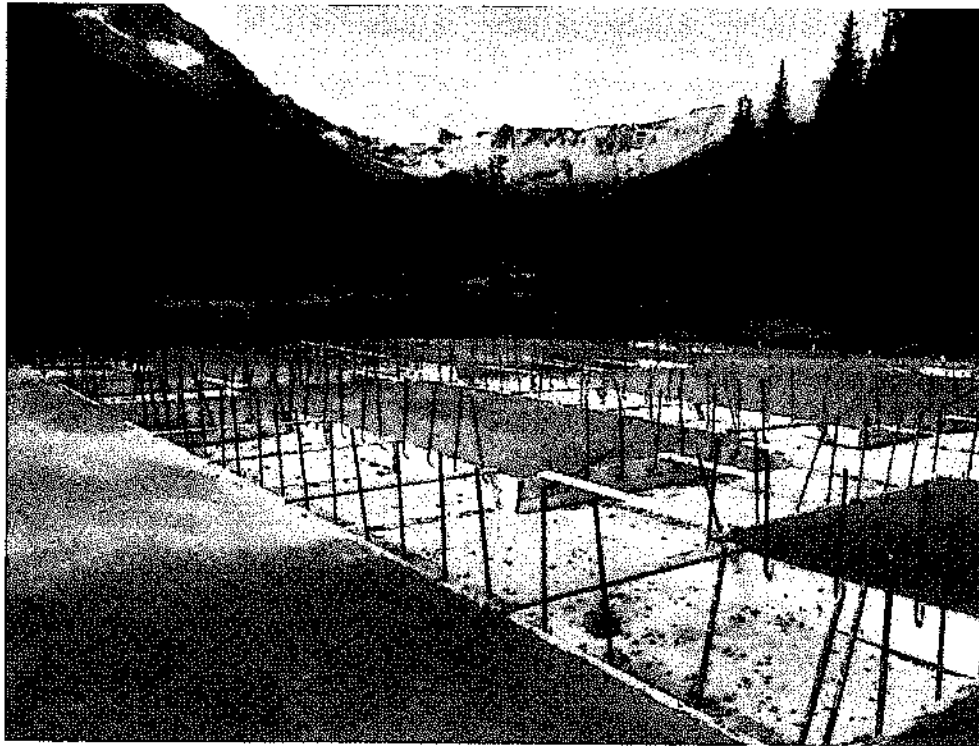
Given the 24 years of delays incurred by the project, and the millions of dollars spent in the approval process, the project's investors are anxious to generate revenue and begin operations as soon as possible.

Lift 1.1 provides access to the ski runs in Jumbo Creek that have been amongst the most popular heli-ski runs for the past 25 years. A first stage opening with only this lift and a ski school lift next to the daylodge (where a handle-tow lift purchased in 2008 will be placed) is possible in order to expedite the public opening of the project. Such an opening would compare well with the birth of limited ski areas like Whitewater, near Nelson. Pat Boyle, of Leitner Poma, after having surveyed the lift line and visiting its ski runs (already cut for the heli-skiers), said he was amazed by the terrain opened by this lift, which looks much bigger when seen on the ground than on the drawings.

The Lift 1.1 bottom terminal is situated near the first set of single-family dwellings, townhouses and the first condominium vacation homes. This first stage, when zoned at the beginning of next year as planned by the JGMRM, is an ideal small opening for a founders' club and an early offering memorandum, thus enabling the opening of the resort to the public.

The Glacier Dome gondola will follow the year after, as it is likely to require two summers to construct. The mountaintop restaurant and glacier T-bars will be built simultaneously.

It is important to understand both the concept and context of a functional opening phase in order to understand *what* is being started when determining if it has been "substantially started".



View of Glacier Dome from Daylodge

3. What Has Been Started?

All of the components of the first stage of the resort's opening phase are under construction.

The following has been constructed or purchased:

- The foundations and first floor slab of the daylodge at the resort base;
- The first floor slab of the service building at the resort base;
- The foundation anchors for a quad chairlift (lift 1.1 of the Master Plan);
- A handle-tow lift has been purchased;
- A seasonal bridge to span Karnak Creek within the resort base area has been purchased;
- A temporary bridge at kilometer 15.8 of the Jumbo Forest Service road was constructed and then removed once the permanent bridge was constructed.
- The permanent bridge at kilometer 15.8 of the Jumbo FSR has been constructed;
- A well to provide potable water to the resort has been drilled and tested;
- New roadways within the resort base to allow access to the daylodge, service building and parking areas have been constructed; and

- Improvements to the Jumbo FSR especially with regards to sediment and erosion control have been made.

In terms of volumes and materials, the following has been poured, installed or harvested:

- 325 tonnes (135 cubic meters) of concrete has been poured into the ground;
- 24.8 tonnes of rebar has been installed;
- 23,230 square feet of insulation has been installed;
- Approximately 100 tonnes of steel has been utilized for the bridges;
- Approximately 238 cubic meters of timber has been harvested;
- 18 km of road has been upgraded;
- Approximately 1 km of new road has been built, and
- A 53.6 mbg well has been drilled.

In addition to the physical components, the following works that are specific to the construction site have been done:

- Engineering design of a new 14 kilometer access road has been completed;
- Architectural and structural design of the daylodge and service building is complete;
- Architectural and structural design of the Farnham Glacier lodge is complete;
- Surveying of the Glacier Dome gondola and Lift 1.1 has been done;
- Pricing and construction planning for the daylodge and service building are ready for a fast track delivery of the building;

None of the above items would have been constructed, purchased or designed had it not been for the resort and they have no purpose other than to facilitate the opening of the resort to the public. Significant permanent structures are in place, including a bridge, the foundation slabs of two large buildings and the foundations of a major chairlift are in the ground.

Lift 1.1, the daylodge and the service building are the critical structures to enable the opening of the project. The work done to date represents an important step to open the project to the public and begin operations.

4. Limiting Factors

Despite the fact that the EA certificate was signed in October 2004, it did not constitute a project approval or "go-ahead". Permission to start construction was delayed for almost ten years by provincial and local government approving and permitting requirements. The delays and repeated and onerous review processes are unprecedented for a project of its kind in North America and were entirely beyond the control of the proponent.

Given these obstacles it has been a significant achievement to arrive at the level of construction that was achieved by October 12, 2014.

This is a brief summary of the reasons why:

- The project did not receive Provincial approval in the form of a Master Development Agreement until March 2012;
- The Province did not resolve the permitting structure for the project until November 2012, with the establishment of the Jumbo Glacier Mountain Resort Municipality as had been requested by the regional district.
- Answers to deal with blockades, legal challenges, and availability of access were not achieved until June 2014;
- Access to the project site needed to be re-established following the Ministry of Forests decision to remove the only access bridge within the CRA after the MDA was signed;
- Tendering of contracts and architectural and engineering design and permitting required time to be completed;
- Rezoning for the ski area and related facilities in the Jumbo Creek drainage was not completed until August 19th, 2014; and
- Environmental constraints limited the construction window to just under two months in 2014 (August 15th to October 12th).

The proponent overcame impossibly tight timelines to achieve a substantial amount of construction in a difficult and remote environment. The project remains on track for a December 2016 opening.

5. Background

An understanding of the facts and events following the issuance of the EA Certificate in 2004 and leading to and encompassing the 2014 construction season illustrates the time, effort and diligence required by the proponent to achieve a substantial start to the project despite an exceptionally tight time-frame following the completion of the approval process.

5.1. A Change to the EA Act and the Master Development Agreement

The project received an Interim Agreement in 1993 under the Commercial Alpine Ski Policy (CASP) process, which was followed by a land use decision by the East Kootenay CORE process. When the project was transitioned into the then-new EA Act process in 1995, the EA certificate, once obtained, would have been permanent. The EA Act had no deadlines for start of construction. In fact, Dr. Sheila Wynn, Deputy Minister in charge of the EAO, at a meeting with our clients and government staff on January 26th, 2000, stated emphatically that the EA Certificate, once obtained was the “green light” for the project.

The certificate for JGR was signed on October 12, 2004, and was announced to the proponent and public on October 14, 2004. The Master Plan was approved on July 12, 2007, but the Master Development Agreement (MDA), the final Provincial approval, did not follow the next year, as it did, for example, at Kicking Horse Mountain Resort or Crystal Mountain Ski & Golf Resort. Instead, after considerable delay (chronicled in the chronology below) it was signed in 2012, *five* years after the completion of the Master Plan process and *eight* years after the issuance of the environmental certificate.

Meeting the “substantially started” deadline by October 2014 became the primary challenge to be overcome after receiving the MDA in 2012. The deadline was a requirement that was instituted part way through the nine-year long Environmental Assessment (EA) Act review process for the project. The new provincial government elected in 2001 modified the EA Act requiring a substantial start of construction within five years of issuance of a certificate, with a one-time extension available. Previously there was no deadline and the newly instituted deadline became a target date for opponents who sought to delay the project.

Because of the delay in granting the MDA, GRL had only two years to apply for zoning, achieve building permits and start construction before the final EA Certificate deadline – far less time than the five years, *plus extension*, contemplated by the Act. Construction at most mountain resorts is subject to zoning, a fact that is not reflected in the Act, an omission that leads one to conclude that it is not written with the mountain resort industry in mind.

5.2. Farnham Glacier Start

While the project proponents waited for the Province to sign the MDA, the Province granted a license for summer skiing on Farnham Glacier, to allow Glacier Resorts Ltd. (GRL) to offer a sub-license at \$1 to the Calgary Olympic Development Association (CODA) to train Canadian national team skiers for the 2010 Winter Olympics.

GRL attempted to open summer skiing to other ski clubs by installing a small electrical ski lift and building the first permanent lodge at the resort. Construction start on the moraine of Farnham Glacier seemed to be an easy first step as it was not subject to some of the certificate conditions applicable to the Jumbo Creek drainage where the major development of the resort village is planned and approved.

In 2008, bulldozers began work on the construction road to the lodge, thus starting construction under the limited license within the five-year window of the EA certificate while waiting for the MDA, but work had to be stopped. The reason was that the director of planning of the regional district advised that an application for rezoning was required to install the single electrical lift that GRL had acquired. This surprising decision, reversing an earlier opinion, was communicated at the beginning of August 2008 when work was already under way and it created the apparent justification for a blockade by project opponents and for delays that made construction impossible.

It also became apparent that construction could not take place before a potentially long and controversial rezoning process took place at the regional district level. Such a process would also reopen the land use question, adding further duplication of process. Land use approval had been given by the Commission on Resources and the Environment process (CORE) process of 1993.

CODA continued its summer operations with removable buildings and services until the 2010 Olympics, using the sub-license with an uneconomical and environmentally challenging operation that relied on temporary structures, snowcats and helicopters to operate.

In the meantime, in 2009, GRL was granted its one-time extension of the EA certificate.

In March 2012, the Province signed the Master Development Agreement. The Jumbo Glacier Mountain Resort Municipality was created by letters patent signed by the Minister on November 20, 2012, which provided certainty to the zoning and building permit process.

In June 2013, the Jumbo Glacier Mountain Resort Municipality zoned a small area on the Farnham Glacier side, allowing GRL to restart the activities of 2008 so that the project could be started with a small opening phase focused on summer skiing on Farnham Glacier. GRL commissioned drawings for a lodge and applied for the building permit to start to build the structure of the lodge while Grant Costello started a Farnham Glacier Adventures (<http://farnhamglacier.com>) operation for GRL based on snowcat skiing and the installation of the lift acquired in 2008. Snowcat tours to the top of the glacier were also planned to expose the beauty of the area and tickets sold. A number of successful test tours were organized and carried out.

That summer, project opponents hosted a musical concert at the base of the glacier and then created a blockade, designed to prevent the project from achieving a substantial start by the following year. A hearing in court in Vancouver gave GRL the grounds for an injunction, and the opponents left without incident. By September 2013 GRL had regained access to the site, but by that time the construction window was lost. Even soil testing for the lodge, done at the end of September, was rendered very difficult by two feet of snow at the project site, where snowfall returns by late summer due to the high elevation.



Inaugural sightseeing tour group to Farnham Glacier, July 2013

5.3. Legal Actions Causing Delays

In addition to the delays caused by the 2013 blockade and the time it took to establish legal grounds for an injunction, the project has overcome a number of other delay tactics and legal challenges since the certificate was awarded in 2004.

In 2005, RK Heli-Ski Panorama (RK) requested a judicial review of the EAO process and of the decision of the Ministers to grant an Environmental Certificate. The case was heard for five days in court in Cranbrook, at the end of October 2005. Two lawyers from Vancouver represented RK, a lawyer from Victoria represented the Province and a Cranbrook lawyer represented the proponent. In November 2005, the judge rendered his decision upholding the Environmental Certificate.

RK had made the case that natural justice had been denied to the opponents, but it was clear that if there is any party that has been denied natural justice in this process, it is the applicant, not the opponents. RK appealed the decision. Three judges of the Court of Appeal of British Columbia unanimously confirmed the decision of the Cranbrook court, with a written decision that further vindicated the respondents.

The Jumbo Glacier Mountain Resort Municipality was established on November 20, 2012, providing a regulatory mechanism for a project start. Ten days later, on November 30th, 2012, the

Ktunaxa Nation Council initiated a Petition in the Supreme Court of B.C. to have the MDA quashed. Soon after an Eco Society based in Nelson started a legal action to have the Minister's decision regarding the creation of the Jumbo Glacier Mountain Resort Municipality reversed.

Although legal action against the municipality has yet to be started, the effect was to intimidate. We understand that a legal opinion given to the municipality suggested avoiding antagonizing the opponents and delaying the official community plan approval and the complete zoning for the project.

On April 3rd, 2014 the KNC Petition (heard for two weeks in Supreme Court in January 2014) was dismissed, renewing confidence for the project start. But the Ktunaxa have announced they will appeal the BC Supreme Court decision, which will likely cause further intimidation.

5.4. Impact of Road Closures & Constraints to Site Access

5.4.1. Removal of Bridge to Resort Base Site

In 2012, shortly after the MDA was completed for the project, without informing the Minister and without any consultation with GRL, regional Ministry of Forests staff based in Cranbrook, at the request of representatives of the Ktunaxa Nation Council (KNC) removed access to the project site by decommissioning a bridge at km 15.4 of the Jumbo FSR (the only bridge that is also part of the approved Master Plan), and by not installing a bridge that had already been built at km 11.1.

When GRL discovered this closure it complained, particularly on the basis that access was provided for forestry companies' work and for RK Heli-ski Panorama's logging and fuel deliveries without interruption until 2012, and access availability to the project site was one of the fundamental reasons for the choice of location for the project.

However, GRL expected that this latest challenge was surmountable because construction could begin from the Farnham Creek drainage. Development in the Jumbo Creek drainage was expected to begin with the construction of a new access road that utilized an old forestry road alignment on the northern side of the creek from the existing FSR. The new road could reach the project site without the need of bridges and would bypass the missing bridges at km 11.1 and 15.4. The thought was that the bridge at km 15.4, which is part of the master plan, could be put back once development of the village site progressed in future years.

At the same time, GRL requested and obtained a permit to use the existing FSR in Jumbo Creek for construction, despite the fact that the road had been interrupted at the top end at km 15.4, but expecting to have road access up to that interruption.

5.4.2. Construction of a New Access Road

To begin construction in the Jumbo Creek drainage, GRL focused on meeting the 197 conditions of the EA certificate, and began detailed engineering design of the new access road aligned along the northern side of Jumbo Creek as requested by provincial staff in Cranbrook. GRL

representatives and engineers from McElhanney Consulting Services met on site in July 2013 with MoT staff from Cranbrook.

Access via the route along the northern side of Jumbo Creek was what was the preferred route described in the approved Master Plan. It was chosen because it was straighter and required less avalanche monitoring than the existing FSR on the southern side of Jumbo Creek. However, both MoT staff and forestry staff required a final and approved engineers' design before allowing equipment and start of construction on this route.

GRL requested that the old forestry road be reopened, so it could be studied and ground-truthed by its engineers and environmental and archaeological consultants. The proponents' representatives visited the site with Gordon Cleland, a contractor based in Invermere, associated with the Shuswap Indian Band, and discussed doing some work in winter 2013/2014. Starting to reopen access in winter following the old forestry road route appeared feasible and to be a good idea from an environmental point of view, but the idea was abandoned because there was insufficient time to complete the permit process, which was still unclear at the time.

At the beginning of April 2014, the engineering design for the northern access to the project was finalized and reviewed by environmental consultants. Unfortunately there remained a disagreement with provincial staff regarding the minimum applicable standards for a mountain road. The issues were the width of shoulders, the maximum permissible gradients even for short sections, curvatures, and sections at reduced design speed. Essentially, the proposed design for the opening phase is similar (but better) to the standard of the road from Whistler to Lillooet, or of an improved forestry road, such as the access road to Panorama or Sun Peaks. However, provincial staff continued to require changes to a higher standard, despite assurances of "reasonableness" from the Assistant Deputy Minister.

In addition, despite the fact that the proposed road had been in the approved Project Report under EA and in the approved Master Plan, it appeared that that the design for this road would be treated like any new application, with Water Act notifications required, studies and designs for stream crossings to be submitted and approved before construction, and consultations with the First Nations required again. Also, the inability to access the site had hidden the fact (discovered by helicopter survey by the environmental consultants), that there was the likelihood of some wetlands in the area connecting the previous forestry road to the sawmill site at the resort village.

In May and June 2014, a review of all the issues related to this new access road and of the required approval processes made it obvious that the permitting process alone would take at least another year of studies, notifications, consultations and additional reviews.

5.4.3. Decision to Improve the Existing FSR

Meanwhile, the mountain resort municipality agreed to zone the upper part of Jumbo valley for the project's opening phase. It became obvious that to start any construction in the Jumbo valley and to access the resort site it was necessary to use the existing FSR and to reopen access to the project through it.

This required a new bridge over Jumbo Creek at km 15.4 of the FSR. A 30 days' notice was required and permission to install a bridge depended on freshet determinations for the permissible window of the year. Because of this window, construction of the access bridges that permitted access to the resort site could not occur prior to August 20th.

There was considerable confusion, exemplified by a letter received by GRL on July 24th, 2014, from the District Manager of the Ministry of Forests, Lands and Natural Resources Operations in Cranbrook, asking whether the permit to use the FSR should be cancelled, and there seemed to be an expectation that nothing would really happen until the northern access route application would be processed in the future.

GRL gathered all available information on the requirements to reopen the existing FSR thereby accessing the project site from the existing alignment. It engaged local engineers¹ and bridge builders². Despite the late start and the busiest time of the year for construction (limiting the availability of construction crews, machines and materials), a bridge was engineered, constructed, permitted, and delivered to the site by mid-August. At the same time a contractor was retained, a temporary bridge of the right length was found and installed and access to work on the permanent bridge was permitted.

However, a new issue threatened to close access to the site: there is a ford at km 11.1 of the FSR, previously used by fuel delivery trucks for RK Heli-ski Panorama and by trucks for forestry operations, that was now deemed to be not usable for the construction of JGR. Provincial staff advised that the kind of construction work planned for bridge installation at km 15.4 and for construction at the resort site would not be permitted without a bridge over the ford.

At km 11.1, a bridge with a concrete deck was made available by forestry staff, and might still be available for a permanent installation, but the concrete deck and its curing time of at least a week (closing the road for a week) were not a viable solution in the remaining time available to GRL and with the obligation to keep the road open to the public for recreation. It was too late to order a permanent bridge with a different type of deck, but a temporary bridge was found and installed.

The installation of the temporary bridge at km 11.1 and the temporary bridge at km 15.8 finally made it possible, at the end of August 2014, to access the site and begin work on the installation of the permanent bridge at km 15.8.

A precondition for construction start (one of the almost two hundred EA certificate conditions) was drilling for a well and proving adequate water. A drilling contractor was the first to enter the site, and immediately began drilling. The first well was successful and proved ample groundwater for the opening phase of the resort (while it is unusual for a first test well to be successful, this fact was not surprising in a glacial valley flanked by overhanging glaciers).

The construction drawings for the daylodge and for lift #1.1 were completed, approved and the locations given to the surveyors in order to stake the ground for the contractors. With access to the

¹ At Vast Resources Solution in Cranbrook

² RapidSpan and Johnston Construction

site now available the ground crew for surveying and locating buildings moved in. This resulted in a new surprise.

5.4.4. Relocation of the Daylodge & Construction Start

The surveyors discovered that a stream in the re-grown forest, running diagonally from Karnak Creek to Jumbo Creek, crossed the location of the daylodge. The one meter contour mapping derived from the aerial survey made by McElhanney Consulting Services, as well as all previous mapping and site investigations, had not shown this small stream among the trees. It could only have been discovered via ground-truthing. This added to the frustration of GRL of having had ground access to the site effectively negated since the signing of the MDA in 2012.

Relocation and a redesign of the north end of the project became immediately necessary. The available locations were severely limited by zoning and the previously approved land lease areas. Nevertheless, the daylodge location was moved near the previous location of the service building and the service building was moved further north, yet still within the polygon of the existing Land Act tenure.

The efficient municipal staff contracted from the Village of Radium Hot Springs by the Jumbo Glacier Mountain Resort Municipality approved the revised drawings quickly. By the time this was all done it was the middle of September, with snow on the ground and less than four weeks to the provincially mandated deadline of the EA certificate.

However at this point all the drawings and the permits were available and in two weeks construction access and excavation for the foundations of the daylodge of the service building and of the first lift were ready. Forming was done, insulation was placed on the ground to fit under the slabs and the reinforcing steel was delivered and put in place. Then on the night before the first concrete deliveries were scheduled on October 4th, the worst downpour of the summer (now beginning of fall) rendered the top section of the road inaccessible. Work on the road took precedence again and finally the concrete deliveries started again on October 8th. At this point **all the components for a minimum opening phase are started** and construction could and should continue, at least until the snow prohibits it. Road improvements should also continue until when weather permits it.

The Farnham Glacier opening option was postponed, primarily because access to that drainage was delayed by the necessity to remove avalanche debris on the Horsethief forestry road, and when access was made available in August it was discovered that the creek just before the lodge location had slightly changed course in the moraine and destroyed the culverts previously put under the access road by CODA. The environmental consultants, in discussions with provincial staff decided that the crossing required a bridge, and there was not enough time for the Water Act notifications, the design, and approval of the bridge, and the bridge construction and placement. The Jumbo Glacier Resort project will have its opening phase in the Jumbo Creek drainage, as originally envisioned by the master plan, and summer skiing will start at Glacier Dome.

6. Project Chronology: August 2004 to October 2014

The following is a chronology of relevant events that occurred from the time the EA Act process was concluded in August 2004 to the ten-year anniversary of the EA certificate in October 2014.

1. The quasi-judicial review done under the EA Act was concluded in August 2004 by the EAO, which issued a report and recommendations, which stated that the project is "in the broad public interest"
2. The Ministers took extra time to review the reports and finally issued an Environmental Certificate as recommended by the EAO, dated as of October 12, 2004, and presented to the public on October 14, 2004.
3. On October 12, 2004, the Shuswap Indian Band of Invermere reaffirmed its support for the Jumbo Glacier Resort project in a press release and publicly announced its separation from the Ktunaxa Kinbasket Tribal Council and its joining the Shuswap Nation Tribal Council, with the support of the 17 chiefs of the Shuswap Nation.
4. Project opponents referred the major issues reviewed during this entire process to the federal ombudsman in the Office of the Auditor General, the Commissioner of the Environment and Sustainable Development, and to the federal ministries, which responded in 2005 confirming the assessments made by the EAO.
5. RK Heli-Ski Panorama (RK) requested a judicial review of the EAO process and of the decision of the Ministers to grant an Environmental Certificate. The case was heard for five days in court in Cranbrook, in the end of October 2005. Two lawyers from Vancouver represented RK, a lawyer from Victoria represented the Province and a Cranbrook lawyer represented the proponent. In November 2005, the judge rendered his decision upholding the Environmental Certificate. RK had made the case that natural justice had been denied to the opponents, but it was clear that if there is any party that has been denied natural justice in this process, it is the applicant, not the opponents.
6. RK appealed the decision. Three judges of the Court of Appeal of British Columbia unanimously confirmed the decision of the Cranbrook court, with a written decision that further vindicated the respondents.
7. In the interim, work on the master plan under the Commercial Alpine Ski Policy (CASP) continued.
8. On July 12, 2007, following another two-year public review under CASP, the Province approved the Master Plan for Jumbo Glacier Resort.
9. While waiting to sign a Master Development Agreement (MDA), in early 2008, in order to facilitate training Canadian athletes and also the Canadian Olympic Development Association (CODA) program, the Province granted Glacier Resorts Ltd. a ten years'

license for skiing on Farnham Glacier, one of the four glaciers within the boundary of the Interim Agreement and of the Master Plan.

10. Glacier Resorts Ltd. gave a sub-license for half of the Farnham Glacier tenure at \$1 to CODA. CODA is training Olympic skiers from a temporary camp facility accessed extending a road from the Horsethief Creek drainage, utilizing diesel operated snow cats to carry the skiers uphill. Glacier Resorts Ltd. expected to offer a similar opportunity to other athletes, but to introduce lift service rather than snow cats.
11. In August 2008, despite the long history of the application and the ten-year license for skiing on Farnham Glacier, the applicant was surprised by the Regional District of East Kootenay's (RDEK) planner who indicated that the installation of a removable platter lift would require rezoning. This was after the proponent had previously been advised that it would not require a building permit from the regional district. This in practice placed a veto on the installation, as it was too late and unclear how to process a new application for rezoning, and assisted project opponents who blockaded the road preventing contractors from installing the lift. The platter lift was placed in storage.
12. In October 2008 the applicant concluded an extensive and precedent setting Impact Management and Benefits Agreement (IMBA) with the Shuswap Indian Band of Invermere.
13. In January 2009 the deadline for start of construction (October 12, 2009) in the EA Certificate was extended by another five years. The Ktunaxa Nation Tribal Council (KNTC) based in Cranbrook expressed opposition and asked the EA Office to deny the extension.
14. The applicant continued meetings with the Ktunaxa representatives and a draft IMBA with the KNTC was tabled as of April 2nd, 2009.
15. On July 3rd, 2009, KNTC representatives e-mailed Grant Costello cancelling future meetings and stating that: "We have gone through some critical meetings with respect to the Jumbo project. We have been directed by the leadership to: (i) organize a meeting with the Premier, Minister Krueger and Ktunaxa Nation leadership regarding the Jumbo area prior to the end of July; and (ii) temporarily suspend negotiations with GRL pending the convening of the meeting with the Premier and Minister Krueger, and further direction from the nation. Given this direction we are unable to meet with you next week as planned. We will contact you after we meet the Premier, etc. and the nation leadership provides further direction". However, KNTC representatives made representations to the RDEK opposing a motion re-instating the resolution of 1996 requesting the Province to create a Mountain Resort Municipality for JGR, once the Master Development Agreement is completed.
16. On August 7th, 2009, the Board of Directors of the RDEK voted to request the Province to designate a Mountain Resort Municipality for Jumbo Glacier Resort once a Master Development Agreement is signed and that a council of local citizens, supported by a locally based advisory group including First Nations, be appointed to govern the resort.

17. Project opponents claimed that there had not been an adequate public process leading to a local decision and that the vote of the directors was undemocratic, ignoring the fact that the East Kootenay CORE Table decision of 1994, prior to the Environmental Assessment Act review process, had been a public and entirely local land use decision. This decision had been favourable to the project and was the prior to condition of the entire process EA process. The opponents requested a new vote.
18. On September 4th, 2009, despite a request to overturn the August 7th vote, the Board of Directors of the Regional District of East Kootenay voted to request the Province that in the initial stage of a Mountain Resort Municipality for Jumbo Glacier Resort, before the establishment of a voting population, the mountain resort be represented in the Regional District by the Director of Area F.
19. On September 25th, 2009, the Minister of Community and Rural Development responded to the requests of the RDEK confirming in a final manner that the Ministry would act accordingly (<http://www.scribd.com/doc/63145363/Appendix-17-Letter-Norm-Walter-Sept-25-2009>).
20. On October 9th, 2009, the Minister of Tourism, Culture and the Arts, wrote to Pheidias Project Management Corporation to explain that the Province is waiting to complete a potential accommodation of the Ktunaxa Nation by December 1, 2009, before deciding to sign a Master Development Agreement.
21. On December 4th, 2009, Mayor David Wilks, who sponsored the motion in favour of Jumbo Glacier Resort in August, was elected Chairman of the Regional District of East Kootenay with an expanded majority of ten Directors, from a total of fifteen Directors.
22. On April 21, 2010, the Minister of Tourism, Culture and the Arts wrote to Pheidias Project Management Corporation that the Province was still finalizing consultations with the Ktunaxa Nation Council, and the Province "expects this step to be completed in the near future."
23. On September 15th, 2010, Pheidias wrote to the Minister of Aboriginal Affairs noting that Wildsight's requests that the Province should not "fast track" the approval process are egregious, and that in the 20th year of process it is time to conclude negotiations and process.
24. On October 6th, 2010, the Minister of Tourism, Culture and the Arts wrote to Pheidias Project Management Corporation that the Province was still dealing with two matters, including First Nations consultations, but stated "I can assure you that the Ministry expects to complete these items in the near future".
25. On October 22th, 2010, a press release announced, "the Ktunaxa Nation and Province Sign an Engagement Agreement". The press release noted that "\$1.65 million will be provided to the Ktunaxa Nation ...to more effectively engage the Province on land and resource development decisions" and stated also: "The Ktunaxa nation would like to commend the Province for their commitment in developing this approach for land and

resource management, and we look forward to demonstrating a co-operative relationship that can be a model for others to follow".

26. On October 25th, 2010, the Provincial cabinet was shuffled and Ministers' responsibilities were changed. New letters were written to the new Ministers, with information packages.
27. On November 15th, 2010, Representatives of the Ktunaxa Nation Council under the lead of Troy Sebastian (previous NDP candidate in the same riding as Minister Bill Bennett) conducted a demonstration in Victoria in front of the Parliament Building in order to declare the Jumbo Valley sacred ground to the Ktunaxa First Nation and persuade the Province not to conclude the approval process for the Jumbo Glacier Resort project, formally started under bipartisan provincial policy in July 1991. This was followed by a full-page ad in the Vancouver Sun and the Province.
28. On December 16th, 2010, following a letter written on November 11, 2010, Chief Paul Sam of the Shuswap wrote another letter to the Premier condemning the action of the Ktunaxa and refuting the new claim of sacred.
29. On February 4th, 2011, Vancouver Media Coop published an article by the Sinixt Nation under the title "Jumbo Deception" condemning the opposition of the Ktunaxa to the JGR project.
30. On March 5th, 2011, Daphne Bramham of the Vancouver Sun commented with a full-page article on page 3, entitled, "After 21 years it's time for Jumbo decision," with the following subtitle, "Final verdict likely won't make everyone happy, but government has more than enough information at its disposal."
31. On March 14th, 2011, Glacier Resorts Ltd., wrote a letter to the Minister of Forests, Lands and Natural Resources, welcoming the new government's emphasis on jobs and families, emphasizing how this environmentally sustainable project accomplishes long standing provincial policy objectives, and enclosing a signed copy of the final draft of the Master Development Agreement as received from provincial staff on completion of the approval processes.
32. In June 2011, Glacier Resorts Ltd. submitted a management plan to take over glacier skiing operations on Farnham Glacier, previously offered by WinSport Canada (formerly known as CODA), which operated under a sub-license from Glacier Resorts Ltd. The initial operation was set up as a summer training site for Canadian ski team in preparation for the 2010 Winter Olympics. Restarting operations would allow the continuation of an Olympic legacy for the benefit of B.C. ski clubs and the public.

An approval of the management plan by the Province was received on July 22nd, 2011, but it was conditional on confirmation of compliance with the Province's Strategic Engagement Agreement signed in October 2010 with the Ktunaxa Nation Council. This apparent approval was, in effect, not an approval since notification of compliance with the Province's Strategic Engagement Agreement was not received until October 2011 – too late for summer operations. By August 2011, when it had become clear that a

recommencement of summer skiing operations, even if only via snow cats, was not going to be permitted in time, the local contractors had to renounce their planned work on Farnham Glacier.

33. On June 26, 2011, on the eve of the 20th anniversary of the Province's formal acceptance of the Expression of Interest, a group of local community leaders from the Columbia Valley wrote to Premier Clark urging the Province to finalize Jumbo Glacier Resort's approval process in a fair and honourable manner by signing the MDA.
34. Correspondence with the Minister of Forests, Lands and Natural Resources Operations indicated that what is left is for the Minister to execute the Master Development Agreement, terminating unforgivable delays, denials of public policy implementation, and equivocations on correct information. Justice and democratic policy implementation also require that his colleagues respond to the request to create a mountain resort municipality made by the Regional District in 1996, after the completion of the East Kootenay CORE Table land use designation process, at the start of the EA Act process, and restated in 2009. This would permit the implementation of the approved Master Plan as well as the infrastructure as per the environmental certificate. By now it was clear that the complaints of those who stated that the project has been "fast tracked" were rather unfounded.
35. On October 16, 2011, the new managers of France Neige International expressed a renewed desire of the French ski industry to participate in the development of Jumbo Glacier Resort, which they recognized as the best new ski project available in North America. The French interest dates from 1993, when Jean Pierre Sonois, Chairman of the Board and CEO of la Compagnie des Alpes, Eric Guilpart, Vice President Business Development, and Francis Crouzet, Ingenieur INSA-Directeur Technique, came to see the project site and skied into Jumbo Valley with the designer of the project – confirming it as the best potential ski resort in North America. France Neige International invited to key project representatives as well as key local, provincial, and First Nations representatives to visit the French Alps and the work of the Compagnie des Alpes to learn about the French ski industry and its ski areas.
36. On February 6th, 2012, a B.C. delegation, including Bill Bennett MLA representing the Province of B.C., started a weeklong visit to the French Alps and the resorts of la Compagnie des Alpes as guests of France Neige International. The visit included a very successful presentation to key French industry representatives, including the senior representatives of la Caisse des Depots and Consignations, principal owners of la Compagnie des Alpes.
37. On March 20th, 2012, the Minister of Forests, Land, and Natural Resources Operations announced the execution of the Master Development Agreement by the Province, completing a process began in 1993 with the Interim Agreement.
38. On March 26th, 2012, a French group representing France Neige International and la Compagnie des Alpes came to B.C. visiting and skiing the area of the Jumbo Glacier

Resort project. They were also met by a group of project opponents, who generated a flow of negative correspondence to their head offices.

39. On June 8th, 2012, the Board of Directors of the Regional District of East Kootenay reaffirmed again the unanimous 1996 request (restated in 2009 by majority vote) to the Province to create a Mountain Resort Municipality following the execution of the Master Development Agreement.
40. In August 2012, without any consultation with the Shuswap Indian Band and with Jumbo Glacier Resort project representatives (but, as discovered later, at the request of representatives of the Ktunaxa Nation Council) the regional office of the Ministry of Forest, Lands and Natural Resources Operations in Cranbrook closed road access to the project site, just past the start of the Jumbo Pass trail, at kilometer 15.4 of the Jumbo Creek Forestry Service Road. An earth dam was placed on the road to block passage, instead of the bridge, with a prominent sign indicating the official road closure. This particular bridge is the only one that had become part of the approved Master Plan, and is inside the boundary of the Controlled Recreation Area and of what was the proposed boundary of the mountain resort municipality to be created by the Province.
41. On November 20th, 2012, twenty-two years after the start of the application process for the most sustainable ski area in North America, in a location with the best and most reliable snow, and with unique access to high alpine glaciers, the just and final conclusion of the Provincial process was obtained with the formation of the Jumbo Glacier Mountain Resort Municipality.
42. On November 30th, 2012, the Ktunaxa Nation Council (KNC) launched a Petition in the Supreme Court of British Columbia to have the Master Development Agreement quashed.
43. Project consultants started planning construction access by the reactivation of the forestry road on the north side of Jumbo Creek, with a small connection of new road near the project site. This would avoid the need of the bridge at km 15.4 of the FSR. Also, start of construction on the Farnham Glacier side, reopening summer skiing as CODA did, was planned.
44. On February 19th, 2013, the Mayor and Council of the Jumbo Glacier Mountain Resort Municipality held the first meeting, in the council chamber of the Village of Radium Hot Springs.
45. After a Public Hearing held on May 13th, 2013, on May 21st, 2013, the Jumbo Glacier Mountain Resort Municipality passed the first rezoning bylaw that would permit start of construction of the project in the Farnham Glacier drainage. Soil testing, design development and preliminary work were planned and started in order to begin construction of a lodge and to prepare summer skiing on Farnham Glacier, replacing with permanent facilities the camp operated by CODA before the 2010 Winter Olympics.
46. A blockade by protesters in August 2013, removed in September after necessary legal steps were taken to obtain an injunction, effectively caused the loss of the season for

construction and summer skiing. Also, the option of an opening phase with summer skiing that could be made too short again by disruptions by protesters or by late openings of road access, started to look less prudent, given the timelines imposed by the EA certificate, than the opening of the planned year round operations from the Jumbo Creek drainage, even if more demanding.

47. Engineering design to obtain the permits to reopen access to the Jumbo Creek resort site became an urgent requirement. A meeting on site on August 1st, 2013 with the project representatives, the engineering consultants and Ministry of Transportation staff seemed to indicate a consensus on route alignment and road standards. This appeared to be a big step forward in order to finalize the engineering design of the alternative route, on the north side of Jumbo Creek, outlined in the route study submitted at various times of the approval process.
48. The Petition from the Ktunaxa Nation Council to have the project's Master Development Agreement (MDA) quashed was heard in the Supreme Court of British Columbia in the first two weeks of January 2014.
49. On April 3rd, 2014, the decision of the Supreme Court was rendered. The Petition was dismissed with a 117-page decision, confirming the MDA and the 23 years' approval process of the project. This seemed to give the final green light to the project – almost nine and a half years after the issuance of the EA certificate.
50. In May and June 2014, following more conversations with provincial staff in Cranbrook, it was realized that the alternative route on the north side of Jumbo Creek required more studies, notifications and consultations again before permits could be obtained. In particular, provincial staff advised that the northern route alignment required consultations with the Ktunaxa First Nation, with an unclear timeline. Consequently it became obvious that construction work for the project in the Jumbo Creek drainage could only start in 2014 if the existing forestry road access could be reopened.
51. Applications for creek crossings and discussions for the placement of temporary bridges as required to obtain the use of the existing forestry road were started in consultation with the Ministry of Forests, Lands and Natural Resources Operations (MFLNRO) in Cranbrook.
52. In June 2014, at the request of the proponent the Jumbo Glacier Mountain Resort Municipality agreed to prepare the zoning of the ski area and related facilities in the upper Jumbo Creek drainage. The Public Hearing was held on August 6th, 2014, and the zoning was approved in the following weeks.
53. Making use of available designs from MFLNRO, adapted by the project engineers, a new bridge to give access to the project site past km 15.4 of the Jumbo Creek FSR, was ordered for installation after August 15th, 2014, once the construction window for creek access by construction equipment reopened.
54. On August 20th, 2014, all permits and equipment required for creek crossing and bridge installation were obtained, and bridge installation started. Despite the threat of another

blockade and continuing challenges, construction of the Jumbo Glacier Resort project started, 23 years after the start of the approval process.

55. Snow at the project site arrived by mid-September, but despite the weather and more threats in the internet and the media, and some people camping along the route to the site, work proceeded feverishly and the initial foundations of the necessary components of the opening phase at the sawmill site, of the daylodge, of the service building and of lift #1.1, were solidly in place by the deadline of October 12, 2014.

7. Effort and Expense Summary

Has there been a significant investment of time, effort and resources to physically develop one or more main project components?

7.1. Effort

It is remarkable that since 1990, work on the Jumbo Glacier Resort project has never been idle. No other resort project in North America has undergone a 24-year long continuous approval process, encompassing four major provincial reviews and numerous ancillary reviews, including:

- A Formal Proposal and Interim Agreement review process (1991);
- The Commission on Resources and the Environment comprehensive land use review process (1993);
- Master Planning review process under the Commercial Alpine Ski Policy (1993)
- Transition to the new EA Act legislation and review process (1995);
- Completion of the EA Act review process (2004);
- Federal review of the EA Act process (2005);
- Resumption of Commercial Alpine Ski Policy/All Seasons Resort Policy Master Plan review process (2004);
- Completion of Master Plan review process (2008) and transition to Master Development Agreement process;
- Impacts Management and Benefits Agreement process with First Nations (2008);
- Completion of Master Development Agreement Process (2012), and
- Land Act, Forests Act, Forests Range and Practices Act, zoning, and building permit processes (2013).

A chronology of the effort since the 2004 EA Certificate is included above, but the argument can be made that most of, if not all the work leading to the certificate might be considered as part of the "investment of time, effort and resources to physically develop the project," since the sole aim of the proponent from the initial application in 1990 has been to physically develop the project. The

investment of time, effort and resources to arrive at that objective has been monumental, resulting in tens of thousands of hours and millions of dollars spent.

It is worth noting that the EA Act process is only a part of the work done prior to 2004. Again, unlike other projects considered by the EAO, the Jumbo Glacier Resort project was already five years into a rigorous review process before it was transitioned into the then-new EA Act. Numerous studies, planning and design work had been done with the purpose of physically developing the project *before* the project entered into the EA Act review process. This work resumed and was updated and revised following the issuance of the EA Certificate in 2004, culminating in the Master Plan approval of 2007.

While it is understood that the time and effort expended to develop the project prior to the issuance of the EA Certificate might not be taken into consideration in determining if the project has “substantially started”, we believe that it is in fact noteworthy that the investment in time, effort and resources has been substantial and linear since 1990, and not just since 2004.

7.2. Expense Summary

Following the EA certificate the proponent group invested significant resources to study, design, prepare for the construction, and finally begin construction of the components of the opening phase.

The focus of this summary is to outline the expenses incurred to construct the project. A number of expenditures have been excluded from this consideration. The following costs are excluded from this summary:

- The costs of the review processes leading up to the EA Act review process;
- The costs of the 1995 Master Plan and associated studies and documents;
- The costs of the 2004 Master Plan and associated studies and documents;
- The costs related to the Project Report and EA Act review process;
- Litigation costs;
- Costs related to First Nations consultations; and
- Public consultations and marketing costs.

What have been included in this summary are the costs that are typical of a construction budget. These costs normally fall into six categories: land acquisition, construction activities, professional services, equipment, owner's costs (permits), and contingencies. These are straightforward, with the exception, perhaps, of land acquisition.

The Master Development Agreement determines land acquisition, whether by purchase or lease, which is conditional to an approved master plan under the All Seasons Resort Policy of the Province. The cost of the land, therefore, is the cost of the Master Development Agreement and the master plan that is required for that agreement.

It follows that the costs associated with an approved master plan should be considered as part of the "cost of land"; however, even though the bulk of the planning work was done prior to the issuance of the EA certificate, for the sake of simplicity we have chosen to include only the costs incurred since the certificate's issuance in 2004, even though they represent a fraction of the total cost.

Jumbo Glacier Resort Construction Start Expenditures

- CONFIDENTIAL INFORMATION -

1. Preparation of the 2007 Master Plan:	\$720,000.00
2. Road studies and Engineering for Access Route:	\$6,559.31
3. Preparation of ground access, including road access permits, tree cutting permits, and all incidental permits and procedures to gain construction access to the site:	\$61,302.75
4. Environmental monitoring reporting & geotechnical reporting in compliance with the EA certificate and to monitor construction, and coordination of bridge and road engineering and site activities:	\$112,471.58
5. Engineering, installation and removal of two temporary bridges to gain access for the installation of the permanent bridge at JGR entry:	\$40,754.18
6. Engineering and installation of permanent bridge at JGR entry (km 15.8 of former FSR):	\$143,541.94
7. Engineering and installation of the temporary bridge at Karnak Creek in the resort site, and acquisition and repositioning of the bridge for next year's use:	\$32,258.63
8. Architectural and structural design of the key buildings for the opening phase, the daylodge and the service building:	\$101,492.91
9. Building permits, construction insurance, WCB:	\$21,117.47
10. Drilling and reporting on water well:	\$59,146.69
11. Ground surveys, including lift survey:	\$24,160.45
12. Master plan and building designs revisions:	\$389,463.27
13. Excavation for the daylodge, the service building and the lift base station:	\$48,737.59

14. Platter lift purchase and engineering design and construction of departure station foundations for lift 1.1:	\$368,934.00
15. Base slab for daylodge and Service Building (a) forming materials, insulation and reinforcing steel (b) placement of forming and insulation, placement of steel reinforcing and placement of concrete foundations for daylodge, service building	\$127,887.04
16. Concrete costs:	\$96,243.72
17. Concrete testing:	\$5,132.93
18. Worker accommodation and travel:	\$19,763.02
19 Road Maintenance & Upgrading:	\$33,517.79
TOTAL: \$2,412,485.48	

- END CONFIDENTIAL INFORMATION -

8. Future Work

With the exception of erosion and sediment control work on the access road, repositioning of seasonal bridges and site winterization, construction work at JGR stopped on October 12, 2014 in deference to the Minister at the request of the EAO and in anticipation of her opinion on whether or not the project has "substantially started".

While the primary work plan for the season has been completed, the departure of the construction crews prevented the installation of micropiles for the structure of the daylodge and of the service building, which would have allowed construction of the superstructure to progress more rapidly in 2015.

The work plan for 2015 is to resume construction where it was left off. The bridge at the ford at km 11.1 of the FSR will need to be re-instated, this time permanently if the alternative route on the north side of Jumbo Creek is postponed or abandoned.

Work will resume to construct the road access to the base of the Glacier Dome gondola, and final survey, engineering and contract documents will be prepared so that it can be built for opening by Christmas 2016.

Construction of the daylodge, of the service building and of lift #1.1 will resume in summer 2015. It is likely that these buildings will be prefabricated off-site (see the confidential quote from Trinity included as an appendix), permitting a rapid (3-4 weeks) assembly of the buildings on-site.

The services for the first strata subdivision will follow, and opening of the resort for skiing by Christmas 2016 is planned, at least with the first major lift (1.1) and a ski school small lift (platter). The Glacier Dome gondola will follow in the following year.

The JGMRM is expected to complete the official community plan and to rezone the first phase of the project by February 2015. When this is done GRL will be in a position to do an offering memorandum for the single-family homes, duplexes and condominium sites available at the north end of the project for ski in and ski out vacation homes. This will be the first major step in order to create overnight accommodation and after which the project becomes self-financing.

9. Conclusion

We believe that the project has overcome unprecedented regulatory delays and an adversarial approval process. The proponent did not receive the approval to seek permits for construction to meet the October 12th, 2014 "substantially started" target until the signing of the MDA on March 20th, 2012 and the creation of the Jumbo Glacier Mountain Resort Municipality on November 20th, 2012, which completed the first zoning on May 21st, 2013.

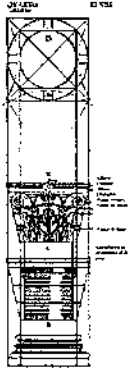
Effectively, the proponent had less than sixteen months to complete the detailed design process, the permit process, and the tendering process to begin construction. This is further complicated by the fact that the construction window at the remote mountain locations at high elevations is only a few months long. We do not believe this short time frame is what Section 18 of the Environmental Assessment Act contemplates, but despite that factor, everything that could be reasonably and practically constructed within the limitations described in this report has been achieved.

With 325 tonnes (135 cubic meters) of concrete and 125 tonnes of steel in the ground we believe that physically the project has been "substantially started". Functionally, all of the components required for a project opening are now under construction and the designs, studies and estimates are in place for the completion of the opening phase of the project. It is reasonable to conclude that construction of Jumbo Glacier Resort has substantially started.

pheidias project management corporation

660 – 1188 West Georgia Street
Vancouver, BC V6E 4A2 Canada

t: 604-662-8833 f: 604-662-7958
www.pheidias.ca



November 7, 2014

Paul Craven
Executive Director, Policy and Quality Assurance
Environmental Assessment Office

Sent via e-mail

Re: Construction Start and Project Status of Jumbo Glacier Resort

Dear Mr. Craven:

We are writing to you on behalf of our client, Glacier Resorts Ltd., to provide the facts, context and reasoning of why the Jumbo Glacier Resort project has “substantially started” in compliance with its environmental assessment certificate signed on October 12, 2004.

We believe that the project meets the criteria to be considered “substantially started” as outlined by the EAO User Guide:

- There has been a significant investment in time, effort and resources to physically develop the main project elements required for a project opening;
- The work which occurred during the construction window this summer and early fall included permanent structures that are essential to the project's opening;
- All of the work done to date has been undertaken exclusively to achieve a project opening and provide access to the upper Jumbo Valley for public skiing and sightseeing.

We believe the attached report will help inform this opinion and help make a determination that the project has “substantially started.”

With kind regards,
Pheidias Project Management Corporation

Tommaso Oberti, Vice-President

Encl.

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Wednesday, November 5, 2014 1:42 PM
To: Leake, Greg EAO:EX; Caul, Doug D ABR:EX
Subject: RE: Jumbo

I have reviewed the Admin Inspection Report. The grizzly bear monitoring report is the only one "from 1994" mentioned in our report.

From: Leake, Greg EAO:EX
Sent: Wednesday, November 5, 2014 1:23 PM
To: Craven, Paul EAO:EX; Caul, Doug D EAO:EX
Subject: FW: Jumbo

Matt has also asked if there is "any other information from 1994" that we are relying on.

From: Leake, Greg EAO:EX
Sent: Wednesday, November 5, 2014 1:23 PM
To: Gleeson, Kelly T GCPE:EX; Mitschke, Matt ENV:EX; Thomas, Vivian P GCPE:EX; Crebo, David GCPE:EX; Strongitharm, Bruce FLNR:EX
Cc: Southern, Evan PREM:EX; Mills, Shane LASS:EX
Subject: RE: Jumbo

- Condition 104 of the EA Certificate requires a grizzly bear monitoring program before construction, at the end of each phase of construction and continuing for ten years, or until the government advises that it is no longer required. The Environmental Assessment Office conducted a comprehensive review of all the relevant literature, documents and correspondence and consulted with various government professionals to assess whether the pre-construction requirements were met by Jumbo Glacier Resort.
- The Environmental Assessment Office determined that the 1999 report "Grizzly Bear Population Survey in the Purcell Mountains, British Columbia (Axys Environmental Consulting)" satisfied the requirement for a pre-construction (baseline) inventory of grizzly bears in the study area.
- Jumbo Glacier Resorts is currently developing plans for the next steps in monitoring for potential impacts of the project on the grizzly bear population.

From: Gleeson, Kelly T GCPE:EX
Sent: Wednesday, November 5, 2014 1:17 PM
To: Mitschke, Matt ENV:EX; Thomas, Vivian P GCPE:EX; Crebo, David GCPE:EX; Strongitharm, Bruce FLNR:EX; Leake, Greg EAO:EX
Cc: Southern, Evan PREM:EX; Mills, Shane LASS:EX
Subject: Re: Jumbo

Asap please - as potential follow up in the house

Sent from my BlackBerry 10 smartphone on the TELUS network.

From: Mitschke, Matt ENV:EX
Sent: Wednesday, November 5, 2014 1:15 PM
To: Thomas, Vivian P GCPE:EX; Gleeson, Kelly T GCPE:EX; Crebo, David GCPE:EX; Strongitharm, Bruce FLNR:EX; Leake, Greg EAO:EX

Cc: Southern, Evan PREM:EX; Mills, Shane L ASS:EX
Subject: Re: Jumbo

Adding Greg Leake from EAO.

We are relying on a 94 study on grizzly bears, that is a complaint from FN and opponents. Greg can you clarify for the group.

Matt

Sent from my BlackBerry 10 smartphone on the TELUS network.

From: Thomas, Vivian P GCPE:EX
Sent: Wednesday, November 5, 2014 1:11 PM
To: Gleeson, Kelly T GCPE:EX; Crebo, David GCPE:EX; Mitschke, Matt ENV:EX; Strongitharm, Bruce FLNR:EX
Cc: Southern, Evan PREM:EX; Mills, Shane LASS:EX
Subject: RE: Jumbo

We're not. Most recent information is from 2014.

From: Gleeson, Kelly T GCPE:EX
Sent: Wednesday, November 5, 2014 1:10 PM
To: Crebo, David GCPE:EX; Mitschke, Matt ENV:EX; Thomas, Vivian P GCPE:EX; Strongitharm, Bruce FLNR:EX
Cc: Southern, Evan PREM:EX; Mills, Shane LASS:EX
Subject: Jumbo

Follow-up

Justine has a question for Minister Polak - why we are relying on 94 data from developer?

Sent from my BlackBerry 10 smartphone on the TELUS network.

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Wednesday, November 5, 2014 9:30 AM
To: O'Connor, Lisa EAO:EX; Cousins, Autumn EAO:EX
Subject: 104663_Response_MLA MacDonald_Oct2014
Attachments: 104663_Response_MLA MacDonald_Oct2014.docx

I have made a few changes. Clean up please and then ready to go up.

Paul

Ref: 104663

October XX, 2014

Norm Macdonald, MLA
Columbia River - Revelstoke
104 – 806 – 9th Street North
Box 2052
Golden BC V0A 1H0

Dear Mr. Macdonald:

Email: Norm.Macdonald.mla@leg.bc.ca

cc: doug.caul@gov.bc.ca

bcc: karla.kennedy@gov.bc.ca

Dear Mr. McDonald:

Thank you for your letter of October 10, 2014, regarding the Environmental Assessment Office's (EAO) compliance oversight of the Jumbo Glacier Resort. In your letter you asked for information and documentation. I am pleased to provide the following details in response to your questions.

Since July 22, 2014, EAO has completed the administrative inspection on key pre-construction requirements for the Jumbo Glacier Resort Project. In addition, EAO conducted a site visit on July 28, 2014 as well as daily field inspections on October 6 to 9, 2014 and October 11 to 14, 2014. Compliance and Enforcement staff from the Ministry of Forests, Lands and Natural Resource Operations (FLNR) conducted field inspections on August 24, 2014, September 9 and 22, 2014 and October 4, 5, 6 and 10, 2014. Additional site visits and inspections have also been conducted by other agencies, such as the Mountain Resorts Branch, Ministry of Transportation and Infrastructure and permitting staff in FLNR.

Information and documentation relating to the administrative inspection, EAO's findings, rationale and many supporting documents can be found on EAO's website at

http://a100.gov.bc.ca/appsdata/epic/documents/p18/1413303423503_f92FJ9FpW3TWxv54WjpY6wBTRLdSYPGKJ4ktQpQTKpGr4NdxC6V!-351597226/1413301694842.pdf.

For documentation relating to archaeology, the information on 7-13 and 7-14 of the Master Plan

(http://www.for.gov.bc.ca/ftp/mountain_resorts/external/lpublish/web/resort_plans/approved/Jumbo/JGR-MP_2010.pdf) provides a description of the BC Archaeology Branch views about the potential for archaeological resources in the project area. Discussions are underway with the BC Archaeology Branch about concerns some parties have relating to archaeology. If EAO's conclusions about the compliance status of these conditions changes, updated information will be made available on EAO's website.

~~For documentation relating to condition 1 (First Nations consultation) and 156 (trapline holders). Correspondence between Glacier Resorts Ltd (GRL) and other parties (e.g. First Nations and tenure holders) was reviewed by the Compliance Officer responsible for the administrative inspection. For example, EAO reviewed correspondence in which Glacier Resorts Ltd notified trapline holders of the start of construction this Summer and in which Glacier Resorts provided the environmental management plans to First Nations for review. Some information about post-2004 consultation is available in 7.2.1 of the Master Plan (link above). If you would like specific documents records, please let me know provide me with additional information about what documents you would like to see and we will provide them to you once we have reviewed for any severing required so I can ensure the documents are reviewed to determine if any severing is required under the Freedom of Information and Protection of Privacy Act.~~

Regarding your request for records to confirm the costs of the required mitigation measures and GRL's ability to pay, this is not something that EAO would assess in advance. While the Environmental Assessment Certificate is clear that the company must pay for certain things, Compliance and Enforcement would only be involved if EAO suspected that the required actions had not occurred.

With respect to information to support condition 31, 64 and 67, these conditions were not assessed through the administrative inspection. In addition to records you requested which are available on our website through the administrative inspection results (e.g. environmental management plans, contractor's handbook, groundwater extraction preliminary results, etc), I hope the information in my response helps address the questions and requests in your letter.

Once again, I thank you for your letter and your interest in compliance oversight of the Jumbo Glacier Resort Project. If you have further questions, please contact me or eao.compliance@gov.bc.ca.

Sincerely,

Autumn Cousins

Comment [DC1]: We need a different response than either of these. If this info would be released under FOI, then shouldn't we just release it? I don't see how a call with me would be helpful.

Comment [CAE2]: Yes, our practice is to release documents if they wouldn't need to be reviewed for potential severing. I am of the view that some of these records may require some form of severing (however I'm not an expert at severing requirements). I've reworked this paragraph.

Manager, Policy and Compliance

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Tuesday, November 4, 2014 9:02 PM
To: Cousins, Autumn EAO:EX; O'Connor, Lisa EAO:EX; Pizarro, Kirsten EAO:EX
Subject: RE: Review: #104602 - Jumbo - Min Sig - Reid (EcoSociety)

I am ok. I made a small change to the language. Please make same changes to the Wildsight letter as well and send up.

Thanks.

From: Cousins, Autumn EAO:EX
Sent: Tuesday, November 4, 2014 8:38 AM
To: Craven, Paul EAO:EX; O'Connor, Lisa EAO:EX; Pizarro, Kirsten EAO:EX
Subject: RE: Review: #104602 - Jumbo - Min Sig - Reid (EcoSociety)

I'm fine with the changes if Paul is. To Doug's question re: if it was a comprehensive review – yes, absolutely (but we can still change the language if he wishes). Although we didn't review every single pre-construction condition, the 43 that Drew reviewed were reviewed in depth.

From: Kennedy, Karla EAO:EX
Sent: Tuesday, November 4, 2014 8:01 AM
To: Cousins, Autumn EAO:EX
Cc: Craven, Paul EAO:EX; O'Connor, Lisa EAO:EX; Pizarro, Kirsten EAO:EX
Subject: Review: #104602 - Jumbo - Min Sig - Reid (EcoSociety)

Hi Autumn,

Doug has reviewed. See comments below and in the attached response. Once any further edits are made, pls let me know.

Kirsten, cliff referral is with you.

Thanks,
K

From: Caul, Doug D EAO:EX
Sent: Monday, November 3, 2014 4:56 PM
To: Kennedy, Karla EAO:EX
Cc: Lewthwaite, Jennifer EAO:EX
Subject: RE: Approval: #104602 - Jumbo - Min Sig - Reid (EcoSociety)

Approved with these changes, but check with autumn/Paul before you send along to see if they can live with it. I think less is better and point them to the report on line.

Doug

From: Kennedy, Karla EAO:EX
Sent: Saturday, November 1, 2014 2:18 PM
To: Caul, Doug D EAO:EX

Cc: Lewthwaite, Jennifer EAO:EX

Subject: Approval: #104602 - Jumbo - Min Sig - Reid (EcoSociety)

Incoming:	<u>I:\EAO\EAO_SHARED\ADMINISTRATION\Correspondence-Min-DM-EPD\2014\Minister\104602 Incoming Jumbo EcoSociety and MLA Macdonald 2Oct2014.msg</u>
Response:	<u>I:\EAO\EAO_SHARED\ADMINISTRATION\Correspondence-Min-DM-EPD\2014\Minister\104602 Response to EcoSociety Oct2014.docx</u> <u>I:\EAO\EAO_SHARED\ADMINISTRATION\Correspondence-Min-DM-EPD\2014\Minister\104602 and 104612 attachment EAO enforcement matrix.docx</u>

Page 309 to/à Page 311

Withheld pursuant to/removed as

s.14

Pizarro, Kirsten EAO:EX

From: Caul, Doug D ABR:EX
Sent: Monday, October 20, 2014 11:57 AM
To: Craven, Paul EAO:EX
Cc: Cousins, Autumn EAO:EX
Subject: FW: Minister Briefing with MOTI
Attachments: JGR 3 BN.docx

Thoughts?

From: Lewthwaite, Jennifer EAO:EX
Sent: Monday, October 20, 2014 11:41 AM
To: Caul, Doug D EAO:EX
Subject: Minister Briefing with MOTI

Hi Doug,

I've attached a briefing note from Jack Bennetto for your review – if you are ok with it I will send off to the MO's.

Cheers,

Jen Lewthwaite
Senior Executive Assistant
Environmental Assessment Office

PH: 250-356-7475
Cell: 250-882-7527

BRIEFING NOTE FOR INFORMATION

DATE: October 19, 2014

PREPARED FOR: Honourable Mary Polak, Minister of Environment
Doug Caul, Associate Deputy Minister, Environmental Assessment Office

ISSUE: Jumbo Glacier Resort Development.
Approval Processes and Construction Developments

SUMMARY:

The Environmental Approvals Office (EAO) is in the final processes of review of the pre-construction conditions of the Jumbo Glacier Resort (JGR).

I have participated in the review and approval processes for the snow avalanche aspects of JGR proposal, 1991-2002, and have been responsible for the oversight and approval processes for the MoTI aspects of JGR since 2002. I have hosted government managers meetings for the past 2 years on a regular basis to communicate and maintain consistency. Participation has been based on current issues; MFLNRO, Resorts, MoF, FN, etc. Recently meetings have been weekly with increased participation from EAO, MARR and JAG.

I visited the construction site 3 times in the past 2 weeks, most recently Friday, October 17th, with MoTI project managers and engineers to review the construction to date. Our focus was on the Service Building and Day Lodge works, we also reviewed the ski lift base foundations and JGR Municipal Bridge.

- The works JGR have completed have been constructed appropriately, meeting the signed off engineering designs and plans.
- The construction and engineering approach is applicable and appropriate for this application, location and environment.
- There are some challenges in the next phases of construction, primarily the utilities for the daylodge. Accommodation for these has been made in design and construction, but modifications will be required in the next phases of construction.
- The construction appropriately allows for the next phases of construction; the frost beams and piles for example.

BACKGROUND:

JGR submitted a development proposal for the Jumbo Glacier area in 1991 and has undergone several formal Government review processes since the original application;

- 1992-1994 Commission on Resources and the Environment
- 1994-2004 Environmental Assessment Act and process
 - 2004 EA Certificate
- 2004 First Nations support for, and against, resort development
- 2002-2012 Jurisdictional challenges for subdivision approval responsibilities
 - Regional debates and split democratic decisions
- 2010 Master Plan Approval/agreement
 - Coincident with Ktunaxa Strategic Engagement Agreement
- 2010-2012 Government review of FN requirements and commitments
- 2012, March Master Development Agreement
 - Defining the requirements and ability to move forward with Resort development
- 2012, Nov Ktunaxa petition to supreme court to quash MDA
- 2012, Nov Resort Municipality designation
- 2013, Nov Amended Ktunaxa SEA
 - specific consultation requirements, FLNRO lands
- 2014, April Ktunaxa petition dismissed by Supreme Court
 - Ktunaxa currently appealing

Construction Activities

- 2012-2014 Design meetings and processes with MoTI
 - Assume work on new alignment
- 2013, May Municipal approval to construct works in Farnham
 - small debris torrents
 - Blockades, related injunction, Sept OK to move ahead
- 2014 Snow avalanches, river impacts
 - Environmental approvals/permits required from MFLNRO and DFO
 - MFLNRO, MoF and JGR related applications
 - Approvals to move forward, August 15th (fish window)
 - Access to JGR construction sites, August 23-28

DISCUSSION:

JGR have placed their ski lift base, service building and Day Lodge works in their originally proposed phase I location. JGR has made minor adjustments to locations, appropriately moved as recommended by their consultants; geotechnical, engineering and environment.

The lift foundations were designed and engineered by POMA, with steel pre-fabricated in Calgary to meet their design criteria. These installations are typical of ski lift construction, by competent firms.

The Day Lodge meets the engineering plans (including the white styrofoam product). Pile types and design are appropriate for this type of construction and location. Utility corridors/access to the building have been designed and are appropriate, but will have some construction challenges when they are installed. Typically these are put in place during and/or prior to pouring the floor slabs.



The service building meets the engineering and design plans, it has however been 'flipped' from the design as they wanted to provide access to the building from the other end, an appropriate decision given the terrain.

We have requested further construction information from the developer, to confirm the comments provided above. These will be geotechnical reports, concrete strength tests, etc. Concrete appears competent and well done from a visual review, no hairline cracks typical of less quality work under these temperatures, for example. Given the knowledge we have to date we expect this information to confirm the results of our original investigation, noted above.

There are other options to phase and construct facilities like this that could arguably be more efficient. Given the time they completed the noted works, this was well done. It does however, illustrate the need to better project manage the initiative, through planning, permitting, approvals, and project delivery expertise and oversight.

All temporary bridges and construction equipment have been removed, October 17th with the last temporary bridge removed when we were on site. There were only 2 people in the area when we left, hikers on the Jumbo trail. This trailhead is available to the public on the existing FSR. Environmental clean-up appeared well done (from the education I received from EAO staff experts, thank-you).

Attachments (if applicable)

PREPARED BY:

Jack Bennetto
District Manager Transportation and Infrastructure
(250) 919-0887

REVIEWED BY:

First Name Last Name, Title
Division

First Name Last Name, Title
Division

INITIALS:

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Wednesday, October 15, 2014 3:39 PM
To: Caul, Doug D ABR:EX
Subject: JGR Construction Chronology

As requested, a construction chronology with pictures.

Paul

I:\EAO\Compliance Operations\Environmental Assessment - Projects 30050-30700\Jumbo Glacier Resort Project\21
Compliance Reports & Reviews\Jumbo Glacier Resorts chrono.docx

Pizarro, Kirsten EAO:EX

From: Caul, Doug D ABR:EX
Sent: Saturday, October 11, 2014 10:46 PM
To: Cousins, Autumn EAO:EX; Craven, Paul EAO:EX
Cc: Lewthwaite, Jennifer EAO:EX

It was a good day Autumn. You and Drew did a fantastic job.

A couple follow ups plse:

- have a look under the orange tarp. None of us did.
- can you lay out the changes on work on the road and lodge area since they started construction this past week. Trying to encapsulate how much they have done in however many Days since they started.

I am going to ask Jack Benetto to make a trip up there to have a look as well at the day lodge and power house work. Will ask that he let us know when.

Paul for early next week (NOT this weekend):

- when did they get their MDA?
- was the company prohibited from doing any construction prior to getting their MDA?

Meeting with Ktunaxa went well. No surprises. They spoke appreciatively of the meeting all of you had earlier this week. I advised them of the bridge removal (2) and soil and sedimentation work for which we have provided to Jumbo. They are fine.

Let's connect on Monday Paul. Need to bounce a thought off you.

Thanks
Dc

Doug Caul
Associate Deputy Minister
Environmental Assessment Office

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Friday, October 10, 2014 8:01 AM
To: Caul, Doug D ABR:EX; Mitschke, Matt ENV:EX
Subject: KNC has accepted our invitation for Saturday

Doug: You would be the best contact for dinner since Autumn will be in Invermere still. Ok?

Paul

From: Bill Green [<mailto:BGreen@ccrffc.org>]
Sent: Friday, October 10, 2014 7:17 AM
To: Craven, Paul EAO:EX
Cc: Cousins, Autumn EAO:EX
Subject: RE: Jumbo Glacier Resorts Ltd. "substantially started"

Hi Paul,

Thank you for your note and the invitations.

Kathryn Teneese, KNC chairperson, will be pleased to meet with Minister Polak over supper as you suggest on Saturday, October 11th. I will be joining her as well. There may be a few other KNC reps; I will advise you later today in this regard. Can you provide a contact person and cell phone number in case there are last minute acceptances of the invitation from other KNC reps?

I and perhaps others appreciate the opportunity to participate in the site tour on Monday 13th. Autumn, can you provide some meeting location and time details?

Thank you,

Bill Green
KNC/CCRIFC Director
7468 Mission Rd.,
Cranbrook, B.C. V1C 7E5
NEW DIRECT LINE: 250-420-2744
Fax: 250-417-3475

>>> "Craven, Paul EAO:EX" <Paul.Craven@gov.bc.ca> 09/10/2014 2:17 PM >>>

Hi Bill,

Thanks for your patience – we have been working on the details of the site familiarization tour on October 11th.

We would like to arrange a dinner meeting between Ktunaxa leaders and Minister Polak and Doug Caul, Associate Deputy Minister on October 11th at Prestige Rocky Mountain Resort's Tuscany Restaurant in Cranbrook. We are suggesting a 6pm start. Please let us know how you would like to proceed to confirm arrangements for dinner.

We understand the Ktunaxa's interest in sharing its observations about the on the ground accomplishments. Although the primary opportunity to share those views are the process set out in my October 9th letter, we would be pleased if you are able to join our staff as they document the state of the site on October 13th. If you are interested in this opportunity, please contact Autumn Cousins directly to make arrangements. The same opportunity will be made available to the Proponent and the Shuswap Indian Band.

Finally, thank you again for sharing your views on the Project's compliance with its EAC pre-construction requirements. We have now completed the administrative inspection component of our work and the results are found on our website later today. I am sure Autumn and Drew would be open to discussing the final results with you if you would find that helpful.

I also wanted to note that in addition to the administration inspection, EAO Compliance and Enforcement or Natural Resource Officers staff have been on site each day since October 4th.

Paul

From: Bill Green [mailto:BGGreen@ccrirc.org]
Sent: Monday, October 6, 2014 4:35 PM
To: Craven, Paul EAO:EX
Subject: Jumbo Glacier Resorts Ltd. "substantially started"

Hi Paul,

Further to my phone message, that you for meeting with us last week and for your letter of October 3rd. As I may not be within cellphone range over the next few days, I will e-mail you about the few requests I wanted to discuss with you:

1. Am I correct in understanding from para. 2 of your letter that the proponent can continue work on the project after October 12th, 2014, subject only to a possible subsequent cancellation or suspension under section 37 of the EAA?
2. We would appreciate an invitation to join your staff who will be visiting the site on October 13th so that we can share observations about on-the-ground accomplishments;

3. We would also greatly appreciate an opportunity for a few senior Ktunaxa leaders to join Minister Polak on her site visit, if and when it occurs. In this regard, the KNC was very offended when Minister Thomson visited the area with the proponent in 2011 without providing any opportunity for the KNC to visit the area with the Minister as well. We hope this mistake is not repeated.

As you know, we remain very deeply disturbed by the apparent disregard by your staff regarding the clear intent of some of the EAC pre-construction commitments.

Thank you for your consideration of these requests.

Regards,

Bill Green
KNC/CCRIFC Director
7468 Mission Rd.,
Cranbrook, B.C. V1C 7E5
NEW DIRECT LINE: 250-420-2744
Fax: 250-417-3475

Pizarro, Kirsten EAO:EX

From: Craven, Paul EAO:EX
Sent: Thursday, October 9, 2014 4:36 PM
To: Caul, Doug D ABR:EX
Subject: FW: IN for jumbo admin inspection
Attachments: IN_EAO_Jumbo Admin Inspection_07Oct2014.doc

No changes from yesterday in this note – so we will re-circulate to those that do not have the latest.

Paul

From: Cousins, Autumn EAO:EX
Sent: Thursday, October 9, 2014 4:32 PM
To: Leake, Greg EAO:EX; Craven, Paul EAO:EX
Subject: IN for jumbo admin inspection

No changes made (by me) since Greg reviewed yesterday.

[\\Level\S40002\EAO\EAO_SHARED\BRIEFING NOTES\2014\Issues Notes\Fall 2014\IN_EAO_Jumbo Admin Inspection_07Oct2014.doc](#)

JUMBO GLACIER RESORT: ADMINISTRATIVE INSPECTION

- The Environmental Assessment Office, the Ministry of Forests, Lands and Natural Resource Operations and other agencies are coordinating oversight of the Jumbo Glacier Resort, including field inspections.
- Compliance and Enforcement staff from the Environmental Assessment Office conducted a review of key pre-construction requirements in the Jumbo Glacier Resort environmental assessment certificate.
- The compliance review concluded that the Jumbo Glacier Resort is in compliance with the majority of pre-construction requirements.
- The compliance review found three conditions that Glacier Resorts Inc. had not fully complied with, relating to monitoring access and water sampling. The company is working cooperatively with compliance and enforcement staff to address the non-compliances.
- It is common practice for compliance and enforcement staff to work with companies to focus on getting a project into compliance prior to determining if any enforcement action is appropriate.
- Compliance and enforcement staff have been on site each day since Saturday and will be on site during construction this week.
- Government agencies have conducted 12 site visits and inspections since the end of July 2014.

- The Environmental Assessment (EA) certificate requires that Glacier Resorts Inc. submit a compliance self-report 30 days before starting construction, which they submitted on May 7, 2014.
- The Environmental Assessment Office (EAO) has received correspondence raising concerns and asking questions about the self-report and the project's compliance status from a number of parties, including members of the public, a First Nation, MLAs and non-governmental organizations.
- The company began construction in August 2014.
- The EAO conducted an administrative inspection to review whether Glacier Resorts Inc. has met key pre-construction conditions. The EAO included specific conditions of concern raised by Ktunaxa Nation Council in the administrative inspection.
- EAO Compliance and Enforcement staff (C&E) reviewed 43 pre-construction conditions (out of the total of 197 conditions in the EA certificate):
 - In Compliance/On-Track for Compliance: 39
 - Non-Compliance Identified: 3
 - Condition #57 (Water Sampling):
 - The Environmental Protection Division (EPD) advises that this condition is "outstanding" based on their review of the baseline water sampling. The baseline data is insufficient, which affects the ability to effectively assess any change in conditions resulting from project activity.
 - Glacier Resorts Inc. is taking steps to address the non-compliance, including providing additional sampling data for review.
 - Condition #72 (biological, physical habitat and water sampling):
 - The baseline data required for this condition is insufficient, which affects the ability to effectively assess any change in conditions resulting from project activity.
 - Glacier Resorts is taking steps to address the non-compliance, including installing continuous water sampling equipment and doing additional physical habitat sampling in fall 2014.
 - Condition #146 (Monitoring of access):
 - While some incidental access monitoring was conducted to provide a baseline, it was sporadic and minimal. The lack of a robust baseline affects the ability to assess changes resulting from project activity.
 - Glacier Resorts intends to hire personnel to monitor access in the near future.
 - Conditions that cannot be determined for this phase: 1
- The Environmental Assessment Office is assessing the non-compliances to determine the appropriate enforcement response.

Ecosociety Request for Stop Work Order:

- On October 2, 2014, Ecosociety requested that the Minister of Environment issue a stop work order for the project, citing their belief that the company is out of compliance with five conditions.
- EAO C&E reviewed all but one of these conditions as part of the administrative inspection:
 - #72: biological, physical habitat and water sampling (non-compliant – see above)
 - #104: Grizzly bear monitoring (on track for compliance)
 - While considerable time has passed since the 1999 Grizzly Bear Population Study, the EAO is satisfied that this study constituted the pre-construction baseline portion of this commitment. Further grizzly bear monitoring is required throughout the life of the project.
 - #61: ground water extraction (on track for compliance)
 - A groundwater exploratory program was conducted by Golder Assoc., including a preliminary report that indicates sufficient water for the first phase of the project.
 - The EAO anticipates the final report from Golder by mid October.

- #88: prohibit use of ATVs (not assessed through administrative inspection)
 - The EAO notes there are challenges with restricting access in the project area and will work with Glacier Resorts to better understand the efforts they have taken to address this condition and whether there are any compliance concerns.
- #119: threatened and endangered wildlife monitoring (on track for compliance)
 - Preconstruction monitoring was completed for the Least Chipmunk and Glacier Resorts will continue monitoring in construction.
- Stop work orders are a form of enforcement action that are used in situations where there is potential for significant, immediate harm to the environment or when certificate holders are unwilling to comply with a specific condition or order. This is not one of those cases.
- Stop work orders typically apply to a specific location or activity

Wildsight Request for Stop Work Order:

- On October 2, 2014, Wildsight requested that the Minister of Environment issue a stop work order, citing their belief that the company is out of compliance with five conditions.
- EAO C&E has reviewed all but one of these conditions as part of the administrative inspection:
 - #40: Fire protection plan (not assessed through administrative inspection)
 - This condition was not assessed in the administrative inspection as Glacier Resorts is not doing the related construction that would require the fire protection plan.
 - #51: Site specific management plans (in compliance)
 - EPD/Ministry of Forests, Lands and Natural Resource Operations (FLNR) have approved the management plans
 - #54: Spill Prevention Plan (in compliance)
 - EPD/FLNR have approved the management plan (which has been renamed the Hazardous Materials Management Plan)
 - #57: Water sampling (Non-compliance identified – see above)
 - #61: ground water extraction (on track for compliance – see above)

General Project Information:

- The project is a year-round ski resort in the Jumbo Creek Valley, 55 km west of Invermere. The project would include up to 6,250 bed-units, including 750 for staff, and would create 3,750 person-years of construction employment and 750-800 permanent full-time jobs.
- The company was issued an EA certificate on October 12, 2004.
- The EAO granted a five-year, one-time only extension to the certificate in 2009, after consultation with the government agencies and First Nations that participated in the original EA, including the Ktunaxa Nation.
- In March 2012, FLNR approved a Master Development Agreement for Jumbo Glacier Resort.
- The Jumbo Glacier Resort project must have substantially started construction by October 12, 2014 or its EA certificate will expire.

Communications Contact:	Greg Leake	250-387-2470
Compliance Contact:	Autumn Cousins	250-888-2020

Pizarro, Kirsten EAO:EX

From: Caul, Doug D EAO:EX
Sent: Wednesday, September 24, 2014 9:51 AM
To: Craven, Paul EAO:EX
Cc: Kennedy, Karla EAO:EX
Subject: 104633_Incoming_Response Ktunaxa Nation letter FLNRO_24Sept2014
Attachments: 208944 Response.pdf

From: Cadogan, Iris FLNR:EX
Sent: Wednesday, September 24, 2014 8:39 AM
To: Minister, ENV ENV:EX; Minister, FLNR FLNR:EX; Minister, ABR ABR:EX
Cc: Cowtan, Pamela ABR:EX; Boyer, Dwain FLNR:EX; Lucas, Brent M FLNR:EX; Caul, Doug D EAO:EX; Cousins, Autumn EAO:EX; Cadogan, Iris FLNR:EX
Subject: Cliff 208944 William Green Ktunaxa Nation letter

Response to Cliff 208944 attached. This is your cc copy. Original in mail to client



Ministry of
Forests, Lands and
Natural Resource Operations

September 22, 2014

CLIFF: 208944

William Green
KNC/CCRIFC Director
Ktunaxa Nation
7468 Mission Road
Cranbrook, BC V1C 7E5

Regarding: Section 9 Approval – Jumbo Creek – Installation of a Bridge

Dear William Green:

Thank you for your September 2, 2014 letter to Dwain Boyer, Assistant Regional Water Manager. As your letter raised concerns that are outside of Mr. Boyer's purview, I will respond directly to the issues you have raised.

In bullet points 1 and 2, you have raised strenuous objections to the issuance of a Section 9 *Water Act* approval as you feel the referral did not follow the Strategic Engagement Agreement (SEA) process and you consider the email notification provided by Ms. Psyche Brown to be misleading. In Ms. Brown's September 5, 2014 email to you, she fully recognized an error was made regarding the notification for the Section 9 *Water Act* application. Having reviewed the notification provided to the KNC, I concur that there was lack of clarity with regard to the information provided, however, I believe the error made by Ms. Brown was unintentional and did not materially affect the application. I also note that once Ms. Brown became aware of her error, she did provide the KNC an opportunity to present new information prior to installation of the permanent bridge. As no new information was provided, I am confident that Mr. Boyer's decision to approve the Section 9 *Water Act* application was made in full consideration of the KNC's comments regarding the application, as well as the Ktunaxa's unchanged opposition to the Master Development Plan approval for the Jumbo Glacier Resort.

In bullet points 3 and 7 you have made specific reference to commitments made by my ministry (FLNR) to the KNC (June 2012) to remove and not replace the 15.8 km bridge on the Jumbo Forest Service Road (FSR). I am of the opinion that commitments made by FLNR in 2012 pertained to the capital bridge replacement project on the Jumbo FSR only. The capital project originally proposed replacing four existing bridges including the condemned bridge at the 15.8 km location. Through discussions with the KNC, FLNR consented to replacing only those bridges necessary to provide safe public access to the Jumbo Pass Recreation Trail, resulting in the bridge at 15.8 km being dropped from the proposed capital project. The existing bridge at 15.8 km was removed for public safety

Ministry of Forests, Lands
and Natural Resource
Operations

KOOTENAY BOUNDARY REGION

Location:
1902 Theatre Road
Cranbrook, BC V1C 7G1

Mailing Address:
1902 Theatre Road
Cranbrook, BC V1C 7G1

Tel: (250) 426-1700
Fax: (250) 426-1767

[To]

reasons, there was no commitment made by FLNR to never re-establish this crossing or to not permit a tenured user re-establish this crossing at a future date.


In bullet point 5 of your letter, you highlight the KNC's request that any ground disturbing activities in areas of moderate or high archaeological potential should require an Archaeological Impact Assessment (AIA). Activities to date have been limited to the installation of bridges at historic stream crossings located well within the highly disturbed right of way of the Jumbo FSR. As bridge installations required no new disturbance at either site, an AIA would not be warranted. Regardless, the tenure holder remains subject to the *Heritage Conservation Act*.

Bullet point 8 of your letter identifies "discrepancies" in the *Water Act* approval document. The applicant is Jumbo Glacier Resort Ltd., however the Jumbo Glacier Mountain Resort Municipality is managing the installation of the permanent bridge at the 15.8 km location. This bridge site is within the Controlled Recreation Area and installation must follow the terms and conditions of the Master Development Agreement.

In bullet point 9 of your letter, you identified an issue with the Leo Creek bridge installation. The Leo Creek crossing remains part of the FSR network. Bridges installed on FSR's are subject to the *Forest and Range Practices Act* (FRPA). FRPA legislation allows temporary bridges to encroach the wetted perimeter of a stream, under certain conditions. An Environmental Management Plan was developed and implemented by Jumbo Glacier Resort Ltd. to mitigate any negative impacts associated with the abutment installation. The Leo Creek bridge design was submitted by a professional engineer and was approved by the Ministry's Engineering Branch prior to installation.

Continuing FLNR's strong relationship with the Ktunaxa remains paramount and I would like to meet with you personally to further discuss the issues you have raised. Please feel free to contact me at (250) 426-1718 if you have time to meet with me and discuss this matter further.

Yours truly,



J. Harry Mitchell, R.P.F.
A/ Regional Executive Director

cc: Minister Steve Thomson
Minister Mary Polak
Minister John Rustad
Dwain Boyer, FLNR – via email
Pam Cowtan, MARR – via email
Brent Lucas, FLNR – via email
Doug Caul, EAO – via email
Autumn Cousins, EAO – via email