



Cheakamus Community Forest
Forest Service Road and Bridge Summary Report

January 11, 2010

Prepared for:

Cheakamus Community Forest
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1.0 INTRODUCTION

Hedberg and Associates Consulting Ltd. (Hedberg and Associates) has been retained by the Cheakamus Community Forest Society to review and comment on roads and bridges within the Community Forest.

There are hundreds of kilometers of existing roads within the boundaries of the Cheakamus Community Forest (CCF), of which approximately 116 kilometers are Forest Service Roads (FSRs). One of the objectives of this review was to assess and comment on the potential liabilities associated with these FSRs, on the assumption that these FSRs would potentially be converted to roads covered under Road Permit (RP) held by the Community Forest.

In addition to roads there are numerous bridges of varying size and type crossing the various larger streams and rivers within the Cheakamus Community Forest. Again, these bridges may be on FSRs or they may be on other non-status roads.

2.0 BACKGROUND

The majority of the FSRs, and indeed all existing roads, were originally constructed as logging roads to facilitate harvesting over the last three or four decades. There are exceptions, such as the southern section of FSR 3077.03, which provides access to the Black Tusk communication tower site.

As the majority of the FSRs in the Community Forest access side valleys off the Cheakamus River or Green River, they are often of a typical coastal forestry branch road standard i.e. maximum favorable grades of approximately 20 percent, numerous switchbacks, and a running surface width rarely exceeding 5 meters, and are not of the “valley bottom” main line standard typically associated with large river valleys.

3.0 METHODOLOGY

Consistent with the scope of project, Hedberg and Associates has summarized all of the Forest Service Roads and associated bridges contained within the Cheakamus Community Forest. Other roads, for example “non-assigned” road permit roads, or non-status roads were outside the scope of this review.

A representative sample of FSRs were inspected in the field and are summarized in Appendix A – FSR Inspections. During these inspections general observations were made regarding access class, potential areas of concern, existing condition, and current use. For these same FSRs any bridges were noted, again general observations about span length, type of bridge, condition, and any posted load rating. All FSR bridges within the Community Forest are summarized in Appendix C – Community Forest Bridge Summary. Information on

bridge type, span, load rating etc. was obtained from the Ministry of Forests and Range (MoFR), Squamish Forest District.

4.0 OBSERVATIONS AND RECCOMENDATIONS

Detailed comments and descriptions of the FSR sections that were inspected in the field can be reviewed in the FSR Inspections included in Appendix A. The following are general comments based the findings of the field reviews and local knowledge.

Forest Service Roads

Generally the FSRs in the Community Forest were found to be in good condition, with few concerns or liabilities, and the assumption can be made that those not reviewed are in similar condition. A summary of the various FSRs in the Cheakamus Community Forest can be found in Appendix B. A field review of the FSRs not inspected should be completed next year.

There were several short sections of concern, for example the fill slope at 3.60 km on the Brandywine FSR and the armoured section of the Cheakamus West FSR at 4.03 km, and these are noted in Appendix A, although currently they are in good repair.

The major area for improvement on the FSRs in the Cheakamus Community Forest appears to be related to maintenance and surfacing, or more specifically the lack of both in recent years. It is recommended that a priority action plan be developed to address these issues, with priority given to those roads or road sections with the highest amount of public use. An obvious example would be the Cheakamus River FSR that provides access to the Cheakamus Lake trail head. This FSR has multiple very rough sections, attributable to inadequate drainage, a lack of surfacing material, or both, however the majority of traffic has been observed to be cars.

Another consideration should be which, if any, of the existing FSRs remain as FSRs, and which are reasonable to take over under RP held by the Community Forest. The primary advantage of roads continuing to be designated as FSRs is potential additional funding sources available through the MoFR, for repair, upgrades, or maintenance. A division of the existing FSRs based on amount of use or use by other industrial users suggests some logical recommendations, as summarized in the following points:

- FSR 3077.03 – Black Tusk should remain FSR due to its primary use for communication site access.
- FSR 3077.01 – Cheakamus River should remain FSR due to heavy public use to access the Cheakamus Lake trail head, and the associated heavy “wear and tear”.

- FSR 3077.02 – Microwave should remain FSR due to its primary use for communication site access.
- FSR 8723.01 – Wedge Creek should remain FSR due to heavy public use accessing the Wedgemount Lake trail head.
- FSR 6102.01B – Upper Callaghan should remain FSR due to heavy public use and access to Callaghan Provincial Park.
- FSR 9284.01 – Nineteen Mile Creek should remain FSR until issues surrounding water main and water tower have been addressed.

Other Roads

Although none of the non-status roads were reviewed for this report, they can generally be assumed to be older, with many likely effectively abandoned. As they cross the same or similar landforms as the FSRs and many were originally constructed during the same period as the adjacent FSRs, it would be expected that there would be few major stability issues or current environmental concerns associated with these roads.

It is recommended that these existing roads be reviewed at an overview level to determine areas that may pose an ongoing risk to water quality i.e. a chronically raveling glacial till banks or seriously oversteepened fill slopes, with field checks as required. A GIS analysis indicating road sections traversing steep, i.e. over 60 percent, slopes, would identify sections for further review. Helicopter access would likely be required for a portion of this work, as many of these road sections were observed or are assumed to be overgrown and relatively impassable. However, the natural revegetation of many of these roads also indicates “natural deactivation”, with watercourses reestablished and stable, cut and fill slopes assuming their natural angle and revegetated, etc. Another objective of this review would be to determine the location of any old log bridges on these roads, with any that remain in place to be rated as to risk of failure should they be accessible by vehicle.

FSR Bridges

As previously noted in Section 3.0, FSR bridges are summarized in Appendix C. Information regarding structure type, span, load rating etc. was obtained from MoFR records, and was consistent with what was observed in the field for those structures viewed.

Bridges pose the biggest liability issue over time, as frequent inspections are required to determine load rating, particularly for log structures. While Section 75 of the *Forest Planning and Practices Regulation* does not specify an inspection frequency, it clearly states that any deficiencies in a bridge be repaired, or a reduced safe load rating be determined and posted, or the bridge be blocked off or removed. Unlike roads, which tend to become overgrown or wash out, bridges may appear safe until they fail, usually under a vehicle. MoFR records indicate six log bridges, and several log culverts, all of which should be inspected to

determine an accurate load rating. Once the log structures are inspected, an inspection schedule should be established for the remaining structures, all of which are steel or concrete spans.

5.0 CONCLUSION

Based on the field review and local knowledge, there appear to be few areas of significant concern with the road and bridge network in the Cheakamus Community Forest. One obvious contributing factor would be the heavy use that these road systems typically see, with problem areas being repaired or upgraded over time.

To summarize the recommendations made in Section 4, the following points are made:

- Those FSRs or FSR sections not reviewed in 2009 should be inspected in 2010.
- Based on level of public use, a priority action plan should be developed for the current FSRs for maintenance and surfacing or other improvements.
- Based on type and amount of use, it is recommended that FSRs 3077.03, 3077.01, 3077.02, 8723.01, and 6102.01B remain as Forest Service Roads.
- An overview level review should be completed for the other non FSR roads in the Community Forest to identify any significant liabilities and associated risk.
- Any non FSR bridges should be identified and reviewed to determine risk, both to the public and to water quality.
- FSR log bridges and major culverts should be inspected and a load rating determined, with an inspection schedule developed for each.
- An inspection schedule should be developed for all FSR bridges, including steel or concrete structures.
- Develop a signage program identifying road users and bridge load ratings.
- Develop road users group for multiple use road (ie gravel, telecommunication, infrastructure access).

The FSR Road and Bridge Summaries included as Appendix B and C, respectively, could serve as a model or base for a maintenance or upgrade action plan, and/or an inspection schedule and summary, and could be copied or expanded to include non-status roads and bridges.

LIMITATIONS OF REPORT

Hedberg and Associates Consulting Ltd. (Hedberg and Associates) prepared this report for the Cheakamus Community Forest. The material in it reflects the professional judgment of Hedberg and Associates in light of the information available to Hedberg and Associates at the time of report preparation. Judgment has been applied in developing the recommendations in this report. No other warranty is made, either expressed or implied to our clients, third parties, and any regulatory agencies that may be impacted by the recommendations. Any use, which a Third Party makes of this report, or any reliance on decisions based on it, is the responsibility of such Third Parties. Hedberg and Associates accepts no responsibility for damages, if any, suffered by any Third Party as a result of decisions made or actions based on this report.

As a mutual protection to our client, the public and ourselves, all reports and drawings are submitted for the confidential information of our client for a specific project and authorization for use and/or publication of data, statements, conclusions or abstracts from or regarding our reports and drawings is reserved pending our written approval.

Yours sincerely,

Hedberg and Associates Consulting Ltd.



Mike Hedberg, RPF - Principal



Dave Guilbride, RFT – Project Manager

January 11, 2010

APPENDIX A : FSR INSPECTION SUMMARIES

Cheakamus Community Forest FSR Inspection

FSR Section 8079.01 and 8079.02

Brandywine Creek FSR

Inspected September 23, 2009

Inspected by D. Guilbride, RFT

Km Location	Comments
0.00 Km	Junction w/ Callaghan WOP access road
1.19 Km	Junction w/ original Brandywine FSR (8079.01)
0.00 Km	Reset at above noted FSR junction
1.70 Km	Penstock crossing
3.16 Km	Steep grade w/ surface erosion. Minimal cover over penstock
3.45 Km	Bridge 3097 – Log stringer w/ penstock adjacent
3.60 Km	Narrow section w/ fill slope erosion & raveling. Penstock upslope
4.44 Km	Junction to upper Brandywine Meadows access
5.89 Km	Start of steep rough grade
6.63 Km	End FSR at Brandywine Meadows trailhead

These FSR sections were assessed from the junction with the paved access road to Whistler Olympic Park. The initial 1.19 Km is the connector road constructed to access the Whistler waste transfer station which then connects with the historic Brandywine FSR.

The Brandywine FSR sees heavy recreational use year round, with hikers destined for Brandywine Meadows and beyond, commercial and recreational ATV's, and snowmobile traffic in winter. The steep grade at 3.16 Km likely is the end of access for many cars, with the steeper rougher hill at 5.89 Km requiring a 4WD vehicle.

This FSR section is generally in very good condition, and given topographical constraints, is appropriate for current and future use. The only area of significant concern is the fill slope at approximately 3.60 Km. In this area the running surface is narrow, and the fill slope exhibits some signs of instability, including raveling and surface erosion. The location of the penstock immediately upslope precludes the possibility of moving the road further into the bank, and it is likely that penstock location actually "crowded" the road to the outside.



3.16 Km – Brandywine FSR



3.60 Km – Brandywine FSR

Cheakamus Community Forest FSR Inspection

FSR Section 10490.01 and 10490.02

Brew Creek FSR

Inspected October 30, 2009

Inspected by D. Guilbride, RFT

Km Location	Comments
	<i>10490.01</i>
0.00 Km	Junction w/ Hwy 99
0.50 Km	Junction w/ paved campground access
2.01 Km	Bridge 3239 – log stringer approx. 8 m span
2.27 Km	Bridge 3240 – concrete approx. 4 m span
2.36 Km	Bridge 3241 – concrete approx. 4 m span
3.17 Km	Bridge 3242 – log stringer approx. 6 m span
3.64 Km	2 Wood box culverts
3.90 Km	Junction w/ FSR 10490.02
5.43 Km	Bridge 3243 – railcar. End FSR
	<i>10490.02</i>
0.00 Km	Junction w/ 10490.01
1.11 Km	Start existing perm. Deactivation. End FSR

These FSR sections were assessed from the junction with Highway 99. The initial 0.50 km is paved and provides access to the commercial campground to the north of the FSR.

These FSRs are in good maintained condition, with minor rough sections. The upper section of FSR 10490.01, beyond the junction with 10490.02, has some water bars but is easily passable with a full size 4WD vehicle. 10490.02 was recently reactivated to access blocks harvested earlier this year. The majority of public use appears to be firewood gathering, likely with fall hunting use as well.

There are five bridges and two large wood box culverts (WBCs) on FSR 10490.01. These WBCs and the two log stringer bridges would require inspection and detailed load calculation prior to any industrial use, with replacement likely in the longer term.



2.27 Km – Brew Creek FSR



5.43 Km – Brew Creek FSR

Cheakamus Community Forest FSR Inspection

FSR Section 6102.01

Callaghan FSR

Inspected September 23, 2009

Inspected by D. Guilbride, RFT

Km Location	Comments
0.00 Km	Junction w/ Hwy 99
4.86 Km	Bridge 3030 – Steel w/ concrete deck
6.13 Km	Bridge 3031 – Steel w/ concrete deck
6.46 Km	Junction w/ WOP access road

This FSR section was assessed from Highway 99 and covers the historic Callaghan FSR until it joins the paved access road to the Whistler Olympic Park.

This section of FSR was improved and upgraded to provide access to the northwestern portion of the new route to Whistler Olympic Park. It is currently in excellent condition, with well graded surface and suitable for use by all vehicles.

There are two bridges on this section of FSR, each with steel girders and concrete decks.



6.13 Km – Callaghan FSR

Cheakamus Community Forest FSR Inspection

FSR Section 6102.01B
Upper Callaghan FSR

Inspected September 23, 2009
Inspected by D. Guilbride, RFT

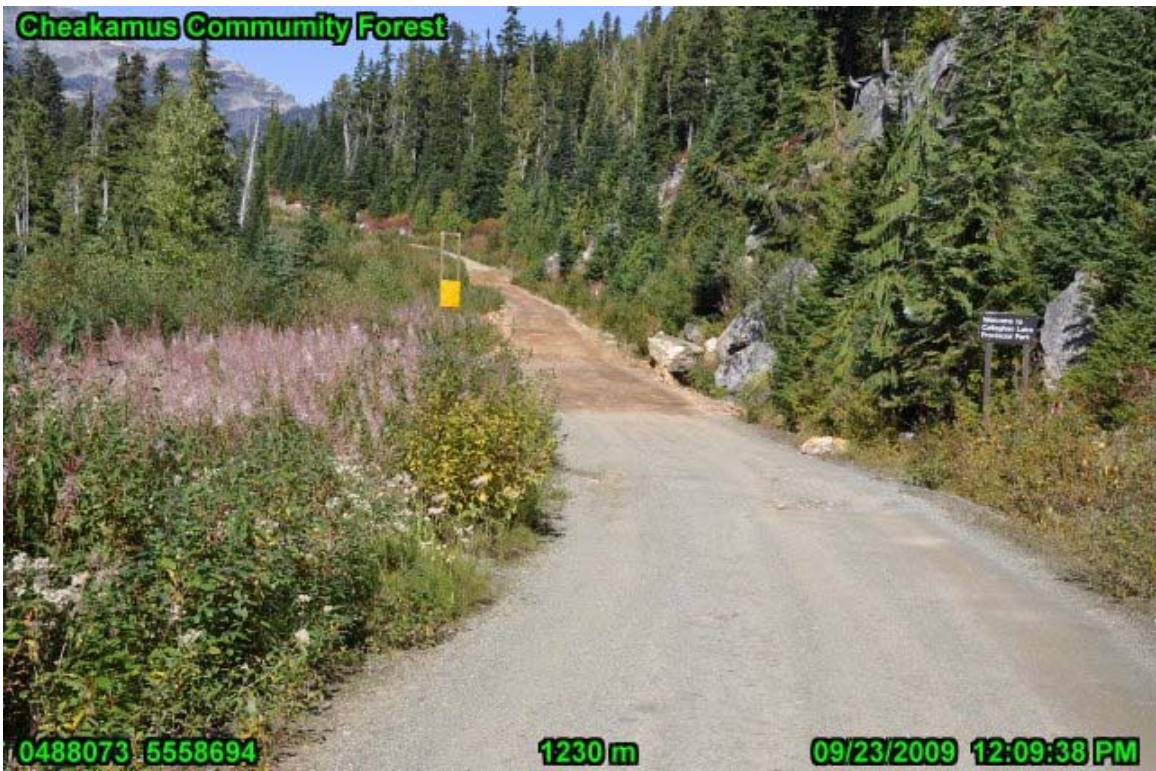
Km Location	Comments
0.00 Km	Junction w/ WOP access road
0.00 Km	Bridge 3032 – Steel w/ concrete deck
0.34 Km	Junction w/ historic Madeley FSR
6.58 Km	Callaghan Provincial Park boundary

This FSR section was assessed from the junction with the paved access road to the Whistler Olympic Park.

This FSR provides access to Callaghan Lake Provincial Park and is heavily used by recreational users, primarily during summer and fall. The road is in good condition, with some rough areas as a result of infrequent maintenance. Grades would permit passage with cars; however there are many wide and smooth cross ditches to control surface erosion and runoff which likely block access to most cars. High clearance 2WD or 4WD is currently required.



0.34 Km – Upper Callaghan FSR



6.58 Km – Upper Callaghan FSR

Cheakamus Community Forest FSR Inspection

FSR Section 3077.01

Cheakamus River North FSR

Inspected September 23, 2009

Inspected by D. Guilbride, RFT

Km Location	Comments
0.00 Km	Junction w/ paved access road
6.11 Km	Till bank w/ gully downslope
7.13 Km	Cheakamus Lake trailhead

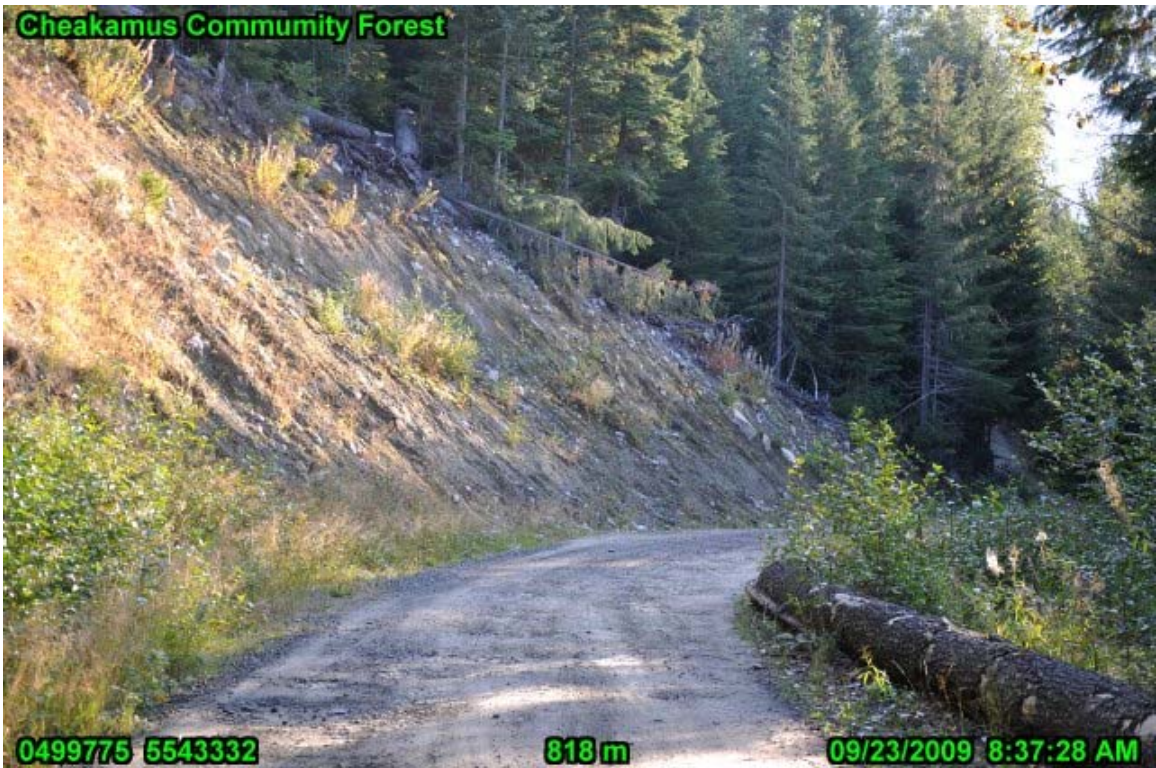
This FSR section was assessed from the junction with the paved access road to the Whistler athlete's village.

This FSR is generally in good condition, commonly travelled by cars, with well controlled drainage and a stable road prism. However the running surface is very rough and is heavily pot holed over much of its length. This is a result of lack of surfacing material, infrequent grading, and heavy traffic. At approximately 6.11 Km there is a till bank at the top of a steep gully that has failed at some point in the past. It appears that the road has been repaired at this location, with the cut bank sloped back, guide logs placed on the outside edge, and a large ditch installed to ensure drainage of the road prism, and currently there appears to be no concern in this area.

Based on the access to the Cheakamus Lake trailhead and the various other trails along the road, this FSR would benefit from a full surface upgrade. This would consist of cleaning or improving existing ditches, lifting the running surface in the few low sections, and the application of suitable crush material over the entire road. This would provide a much more easily maintained running surface which, when combined with much more frequent grading, would give easier access, particularly for cars, than in its current condition.



Cheakamus River FSR



6.11 Km – Cheakamus River FSR

Cheakamus Community Forest FSR Inspection

FSR Section 3077.03

Cheakamus River South FSR

Inspected September 23, 2009

Inspected by D. Guilbride, RFT

Km Location	Comments
0.00 Km	Junction w/ FSR 3077.01
0.10 Km	Bridge over Cheakamus River
1.32 Km	End 2WD access. Rough hill w/ multiple water bars
2.41 Km	Loggers Lake trailhead
3.30 Km	Wood culvert 3199
3.66 Km	Bridge 3173 – Railcar bulkheads
3.82 Km	Bridge 3174 – Log stringer w/ 5 T posted load
3.89 Km	Bridge 3175 – Log stringer w/ 5 T posted load
4.03 Km	Armored bank on Cheakamus River
4.91 Km	Gate at 3077.07 FSR junction

This FSR section was assessed from the junction with FSR 3077.01, which is the main access to the Cheakamus Lake trailhead.

Up to approximately the 1.32 Km point this FSR appears to be heavily used for recreation access and is in good rough 2WD condition. This section is used to access several hiking and bike trails as well as kayak “put-ins” along the Cheakamus River. At the 1.32 Km point there is a steep grade that is very rough at one point, where there are multiple water bars or erosion caused swales, and required a high clearance 4WD at time of inspection. Over the next few kms there are several small bridges, two of which are historic log structures with gravel decks and are posted at a 5 Tonne load limit. These would require inspection and detailed load calculation prior to any industrial use, with replacement likely in the longer term. Based on inspection it is assumed that all of the bridges on this FSR section span fish bearing streams.

At 4.03 Km the FSR is immediately adjacent to the Cheakamus River and the bank is armored with large angular rock. It is expected that after some significant high water events repairs or maintenance to this section might be required. At the 4.91 Km mark there is a gate blocking access to the remainder of the FSR that accesses the Black Tusk microwave tower site.



3.82 Km – Cheakamus River South FSR



4.03 Km – Cheakamus River South FSR

Cheakamus Community Forest FSR Inspection

FSR Section 9281.01 and 9281.02

Daisy Lake FSR

Inspected October 30, 2009

Inspected by D. Guilbride, RFT

Km Location	Comments
	<i>9281.01</i>
0.00 Km	Junction w/ Hwy 99
0.88 Km	Bridge 3127 – Cheakamus River
3.25 Km	Whistler Bungee parking and facility
4.35 Km	Low section – very rough/pot holed
5.22 Km	Bridge 3128 – log stringer w/ 10 T posted load
6.18 Km	Junction w/ 9281.02
12.39 Km	Bridge 3182 – log stringer w/ 30 T posted load
13.18 Km	Southern junction – end FSR. Start deactivated sections
	<i>9281.02</i>
0.00 Km	Junction w/ 9281.01
1.07 Km	Bridge 3181 – log stringer w/ 68 T posted load
1.55 Km	End at junction w/ spurs blocked – end FSR

These FSR sections were assessed from the junction with Highway 99. The first approximately 1.5 km of the Daisy Lake FSR accesses the CalCheak campground and recreation site, and also currently the Department of National Defense Olympic security temporary camp.

To approximately the 3.25 km point, where the Whistler Bungee facility is located, FSR 9281.01 is in well maintained condition and would be passable in most 2WD vehicles. Beyond this point the road is rougher, with a particularly poor section at 4.35 km, but is structurally sound, with no unstable or sloughing sections noted. Beyond the junction with FSR 9281.02 the grades get steeper, however still easily passable with a full sized 4WD vehicle. There appears to be relatively little public use of the Daisy Lake FSRs past the 3.25 km point, although typical rustic campsites were noted.

There are three bridges on these sections of FSR, the first being concrete and steel, with the other two being older log structures. The two log stringer bridges would require inspection and detailed load calculation prior to any industrial use, with replacement likely in the longer term.



5.22 Km – Daisy Lake FSR



12.39 Km – Daisy Lake FSR

APPENDIX B : CHEAKAMUS COMMUNITY FOREST FSR SUMMARY

Cheakamus Community Forest Road Summary

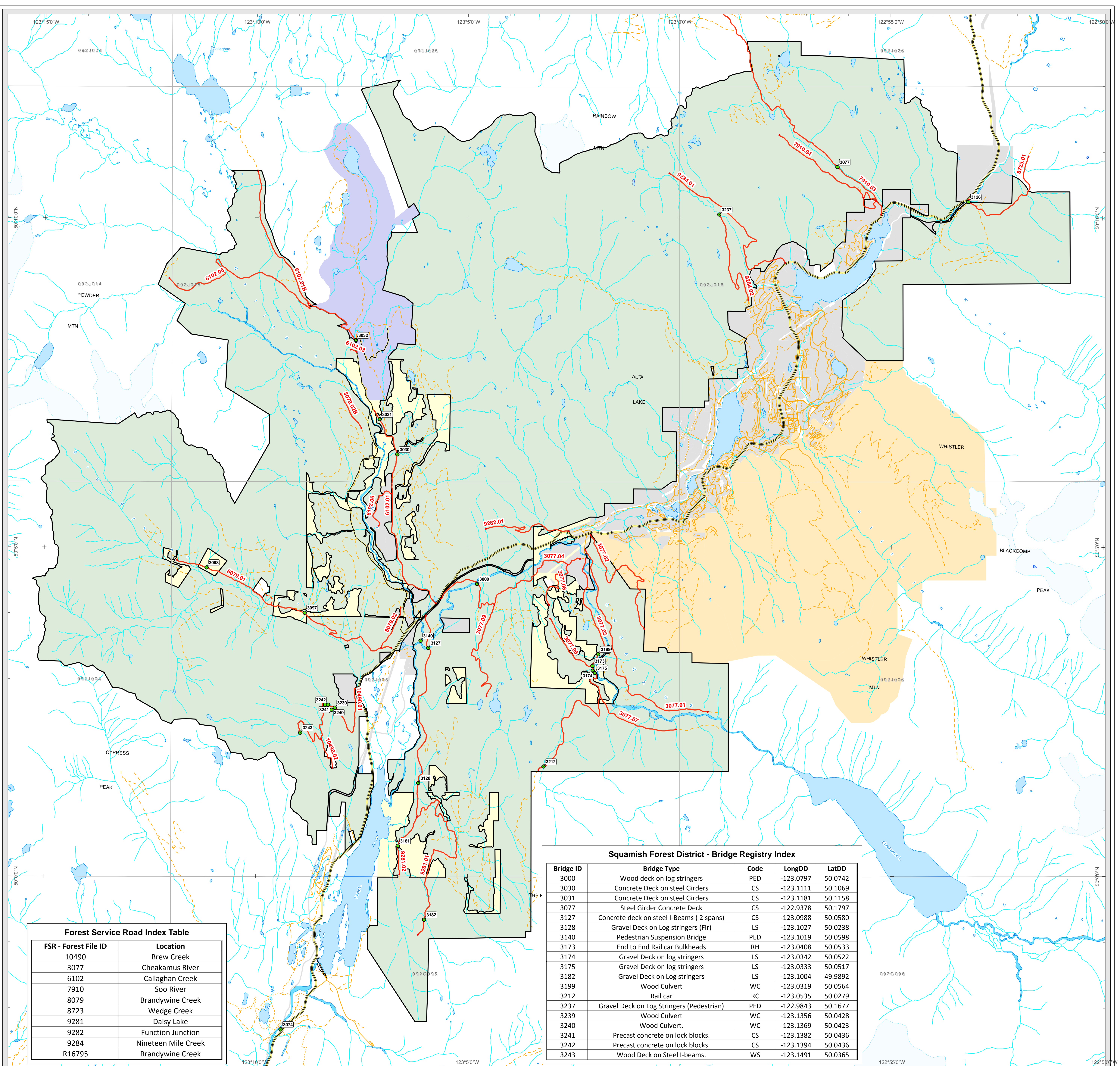
FSR Name	Location	Length Km	Current Insp.	Use Primary	Use Secondary	Existing Condition	Access Class	Concerns	RUP Holders	Comments	Attachment(s)
10490.01	Brew Creek	5.551	30/10/2009	Timber	Recreation	Maintained	4WD	NA	Richmond Logging	Campground access at 0.5 km	Appendix A
10490.02	Brew Creek	1.012	30/10/2009	Timber	Recreation	Maintained	4WD	NA	-	None	Appendix A
3077.02	Microwave	4.789	Not inspected	Site access	Recreation	Unknown	4WD	Unknown	Resort Mun of Whistler	Gated	None
3077.01	Cheakamus River North	7.069	24/09/2009	Recreation	NA	Maintained	Rough 2WD	Rough from use	-	Cheakamus Lk. access	Appendix A
3077.03	Cheakamus River/Black Tusk	8.576	24/09/2009	Recreation	Site access	Maintained	4WD	Rough, River erosion	Andy Rusell	Microwave site access	Appendix A
3077.04	Cheakamus River West	6.094	Not inspected	Recreation	Timber	Unknown	Unknown	Unknown	-		None
3077.06	Cheakamus River West	1.997	Not inspected	Timber	Recreation	Unknown	Unknown	Unknown	-		None
3077.07	Cheakamus River West	2.589	24/09/2009	NA	NA	Abandoned	None?	Unknown	-	Appears to be overgrown	None
3077.08	Cheakamus River West	2.039	Not inspected	Timber	Recreation	Unknown	Unknown	Unknown	Sabre Transport		None
3077.09	Cheakamus River West	3.773	Not inspected	Timber	Recreation	Unknown	Unknown	Unknown	-		None
6102.01	Callaghan Creek	6.441	24/09/2009	Recreation	NA	Maintained	2WD	NA	-	Improved for WOP access	Appendix A
6102.01B	Upper Callaghan	6.338	24/09/2009	Recreation	NA	Maintained	4WD	NA	-	Prov. Park access	Appendix A
6102.03	Callaghan Creek	0.239	Not inspected	Recreation	NA	Unknown	Unknown	Unknown	-		None
6102.05	Upper Callaghan	5.913	Not inspected	Recreation	NA	Unknown	Unknown	Unknown	-	May be abandoned mine access?	None
6102.06	Callaghan Creek	1.486	Not inspected	Recreation	Timber	Unknown	Unknown	Unknown	-		None
7910.03	Soo River North	8.024	Not inspected	Recreation	Timber	Unknown	Unknown	Unknown	-		None
7910.04	Soo River South	3.970	Not inspected	Recreation	Timber	Unknown	Unknown	Unknown	-		None
7910.06	Soo River	0.699	Not inspected	Recreation	Timber	Unknown	Unknown	Unknown	-		None
8079.01	Brandywine Creek	7.560	24/09/2009	Recreation	Timber	Maintained	4WD	Fillslope stability	Richmond Logging	Penstock limits access in spots	Appendix A
8079.02	Brandywine Creek	1.342	24/09/2009	Recreation	Waste transfer	Maintained	2WD	NA	Richmond Logging		Appendix A
8723.01	Wedgemount	3.434	Not inspected	Recreation	Timber	Maintained	Rough 2WD	Unknown	Coast Mtn Excavation	Wedgemount Lk. Access	None
9281.01	Daisy Lake	12.676	30/10/2009	Timber	Recreation	Maintained	4WD	NA	Northwest Landscape		Appendix A
9281.02	Daisy Lake	1.898	30/10/2009	Timber	Recreation	Maintained	4WD	NA			Appendix A
9282.01	Function Junction	3.224	Not inspected	Timber	Recreation	Abandoned	None?	NA	-		None
9284.01	Nineteen Mile Creek	5.714	Not inspected	Recreation	Timber	Unknown	Unknown	NA	Resort Mun of Whistler		None
9284.02	Nineteen Mile Creek	3.847	Not inspected	Recreation	Timber	Unknown	Unknown	NA	-		None

APPENDIX C : CHEAKAMUS COMMUNITY FOREST FSR BRIDGE SUMMARY

Cheakamus Community Forest Bridge Summary

FSR Name	Stream Name	Bridge ID	Span m	Year built	Superstructure	Deck	Substructure	Load rating	Inspection Date	Concerns
3077.09	Cheakamus River	3000	20.8	1996	Log Stringers	Wood	Log	NA	October 9, 2006	Foot bridge only
6102.01	Callaghan tributary	3030	18.3	1996	Steel Girders	Concrete	Concrete	136 tonne	October 8, 2006	
6102.01	Callaghan tributary	3031	15.1	1995	Steel Girders	Concrete	Concrete	147 tonne	October 8, 2006	
7910.03	Sixteen Mile Creek	3077	14.0	1995	Steel Girders	Concrete	Steel	41 tonne	November 16, 2008	Reduced load rating
8079.01	Snow Creek	3097	3.8	Unknown	Log Stringers	Gravel	Log	-	-	Requires load rating
9281.01	Cheakamus River	3127	65.0	2000	Steel Girders	Concrete	Steel	68 tonne	November, 17 2008	
9281.01	Petticoat Creek	3128	12.3	Unknown	Log Stringers	Wood	Log	10 tonne	October 3, 2007	
3077.03	Cheakamus tributary	3173	5.7	2003	Steel Bulkheads	Gravel	Concrete	20 tonne	October 3, 2007	
3077.07	Cheakamus tributary	3174	8.5	1978	Log Stringers	Gravel	Log	5 tonne	November, 17 2008	
3077.03	Cheakamus tributary	3175	7.3	1976	Log Stringers	Gravel	Log	5 tonne	November, 17 2008	
9281.02	Cheakamus tributary	3181	8.0 Est	Unknown	Log Stringers	Gravel	Log	-		Requires load rating
9281.01	Marble Creek	3182	8.5	Unknown	Log Stringers	Gravel	Log	30 tonne	November, 17 2008	
3077.03	Cheakamus tributary	3199	3.0	1978	Log Stringers	Gravel	Log	NA	-	No load rating noted
3077.03	Cheakamus tributary	3212	14.5	1999	Steel railcar	Wood	Concrete	5 tonne	November, 17 2008	Reduced load rating
10490.01	Brew tributary	3239	6.5	Unknown	Log Stringers	Gravel	Log	68 tonne	November, 17 2008	WBC
10490.01	Brew Creek	3240	7.0	Unknown	Log Stringers	Gravel	Log	136 tonne	November, 17 2008	
10490.01	Brew tributary	3241	5.5	Unknown	Steel Girders	Concrete	Concrete	91 tonne	November, 17 2008	
10490.01	Brew tributary	3242	5.5	Unknown	Steel Girders	Concrete	Concrete	91 tonne	November, 17 2008	
10490.01	Brew tributary	3243	18.3	2004	Steel Girders	Wood	Log	68 tonne	November, 17 2008	

APPENDIX D: CHEAKAMUS COMMUNITY FOREST FSR MAP

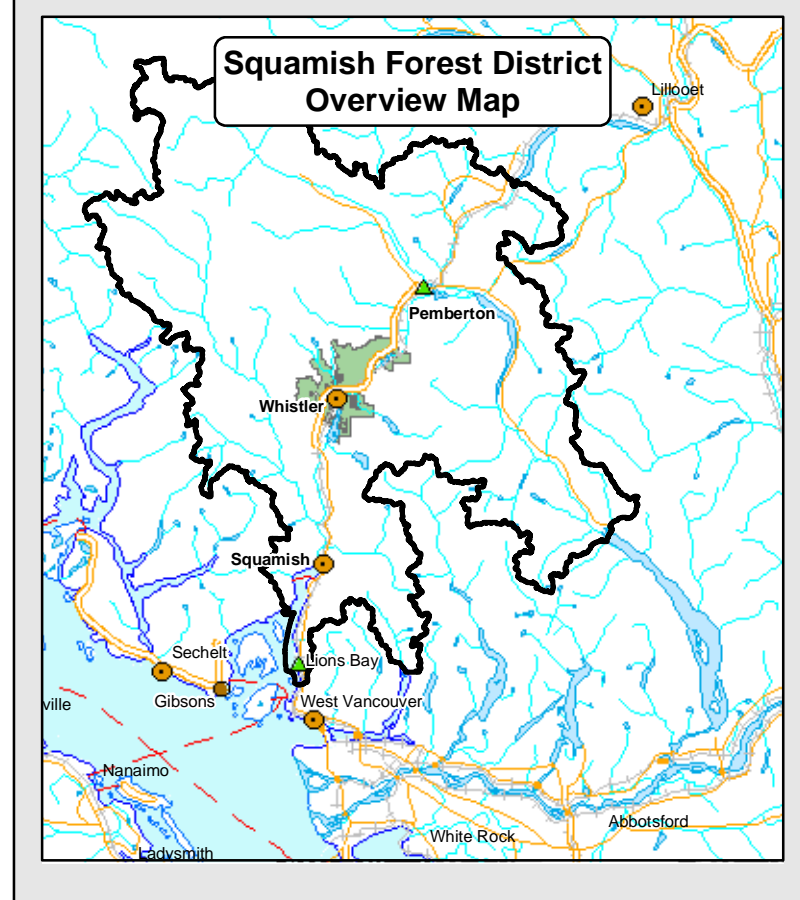


Forest Service Road Index Table

FSR - Forest File ID	Location
10490	Brew Creek
3077	Cheakamus River
6102	Callaghan Creek
7910	Soo River
8079	Brandywine Creek
8723	Wedge Creek
9281	Daisy Lake
9282	Function Junction
9284	Nineteen Mile Creek
R16795	Brandywine Creek

Squamish Forest District - Bridge Registry Index

Bridge ID	Bridge Type	Code	LongDD	LatDD
3000	Wood deck on log stringers	PED	-123.0797	50.0742
3030	Concrete Deck on steel Girders	CS	-123.1111	50.1069
3031	Concrete Deck on steel Girders	CS	-123.1181	50.1158
3077	Steel Girder Concrete Deck	CS	-122.9378	50.1797
3127	Concrete deck on steel I-Beams (2 spans)	CS	-123.0988	50.0580
3128	Gravel Deck on Log stringers (Fir)	LS	-123.1027	50.0238
3140	Pedestrian Suspension Bridge	PED	-123.1019	50.0598
3173	End to End Rail car Bulkheads	RH	-123.0408	50.0533
3174	Gravel Deck on log stringers	LS	-123.0342	50.0522
3175	Gravel Deck on log stringers	LS	-123.0333	50.0517
3182	Gravel Deck on Log stringers	LS	-123.1004	49.9892
3199	Wood Culvert	WC	-123.0319	50.0564
3212	Rail car	RC	-123.0535	50.0279
3237	Gravel Deck on Log Stringers (Pedestrian)	PED	-122.9843	50.1677
3239	Wood Culvert	WC	-123.1356	50.0428
3240	Wood Culvert.	WC	-123.1369	50.0423
3241	Precast concrete on lock blocks.	CS	-123.1382	50.0436
3242	Precast concrete on lock blocks.	CS	-123.1394	50.0436
3243	Wood Deck on Steel I-beams.	WS	-123.1491	50.0365



Community Forest Boundary : Schedule B - Block 1
(shown as thick black line)

Excluded Areas

- Controlled Recreation Areas
- Olympic Nordic Venue
- Active Timber Licences
- Developed/Private Areas

Transportation Features

- Highway 99
- Forest Service Road
- Road Permit Road
- Other Road

Bridges

- Active Bridge
- Pulled or Washed Out

Forest Region: Coast (RCO)
Forest District: Squamish (DSQ)

Timber Supply Area: 31 (Soo)
BCGS Mapsheet No: 09J.005

Scale: 1:40,000
0 1 2 km

Filepath: W:\Cheakamus_Community_Forest_K3V_Roads_Map.mxd
Primary Data Sources: FTA and Land and Resource Data Warehouse
Projection/Datum: Albers NAD83
Date: September 17, 2009
Prepared by: Paul Filippelli

Cheakamus Community Forest

Community Forest Agreement K3V
Road and Bridge Map

Total Area: 30,284 ha

BRITISH COLUMBIA
Ministry of Forests and Range
Squamish Forest District

