

Table of Contents

EXECUTIVE SUMMARY	i
1.0 INTRODUCTION.....	1
1.1 Proponent Identification.....	2
1.2 Sustainability Principles.....	3
2.0 REGULATORY CONTEXT	6
2.1 CEAA and BC Parks Cooperation	6
2.2 Existing Environmental Assessment and Review Process.....	6
2.3 Park Planning.....	7
2.3.1 Cypress Provincial Park Master Plan.....	8
2.3.2 Controlled Recreation Area Master Plan.....	8
2.4 Permits, Licences and Authorizations – Current Regulatory Regime..	10
2.5 Public Consultation	10
3.0 ENVIRONMENTAL ASSESSMENT CONTACTS	12
4.0 PROJECT DESCRIPTION	13
4.1 Project Background and Rationale	14
4.1.1 Project History	14
4.1.2 Alternative Means of Carrying out the Project.....	15
4.2 Project Location	16
4.2.1 Project Facilities and Design.....	18
4.2.1.1 Snowboard Facilities	20
4.2.1.2 Freestyle Facilities.....	23
4.2.1.3 Snow Making Facilities	25
4.2.1.4 Temporary Facilities	34
4.2.1.5 Baden-Powell Recreational Trail.....	36
5.0 SCOPE OF PROJECT	38
5.1 Screening Trigger for the Project.....	38
5.2 Scope Determination.....	38
5.2.1 Scope of the Project	38
5.2.2 Scope of Factors to be Assessed	39
6.0 ENVIRONMENTAL ASSESSMENT METHODOLOGY.....	42
6.1 Overview and Approach.....	42
6.2 Guidance from CEAA and BC Parks	42
6.2.1 Screening for Location Action Specific Effects.....	43
6.2.2 Screening for Cumulative Effects.....	43
6.2.3 Audit Record.....	43
6.2.4 Decision Statement	44
6.3 Screening Matrix and Determination of Assessment Area.....	45
6.3.1 Determination of Assessment Area.....	46
6.3.2 Identification of Project Phases.....	49
6.3.2.1 Construction	49



6.3.2.2	Operation	50
6.3.2.3	Decommissioning and Legacy	51
6.3.3	Identification of Project Environmental and Social Values.....	51
6.3.3.1	Freshwater Environment.....	52
6.3.3.2	Terrestrial Environment	52
6.3.3.3	Atmospheric Environment.....	54
6.3.3.4	Socio-Economic Environment.....	54
6.3.3.5	Cultural Environment	54
6.3.4	Identification of Project Activities	54
6.3.5	Ranking Interactions	55
6.4	Significance Matrix	57
6.4.1	Identifying Potential Effects.....	57
6.4.2	Ranking the Significance of Effects.....	58
6.4.3	Mitigation.....	60
6.5	Cumulative Effects Screening Matrix.....	60
6.5.1	Determination of Cumulative Effects Assessment Area	61
6.5.2	Identification of Other Actions or Activities	63
6.5.3	Identification of Other Effects.....	63
6.5.4	Identification of Values.....	64
6.5.5	Ranking Interactions.....	64
6.6	Evaluating the Need for Follow-Up	64
7.0	PROJECT SETTING AND CHARACTERISTICS	66
7.1	Regional Setting.....	66
7.2	Freshwater Environment	68
7.2.1	Water Quality.....	68
7.2.2	Water Quantity.....	69
7.2.3	Fish and Fish Habitat.....	71
7.3	Terrestrial Environment.....	75
7.3.1	Vegetation Resources	75
7.3.1.1	Rare Plants.....	76
7.3.2	Sensitive Sites	80
7.3.3	Terrestrial Wildlife.....	82
7.3.4	Avifauna	86
7.4	Atmospheric Environment	90
7.4.1	Air Quality.....	90
7.4.2	Noise	91
7.4.3	Viewshed.....	91
7.5	Socio-Economic Environment	92
7.5.1	Recreational Access.....	92
7.5.2	Park Use by the Public	93
7.6	Cultural Environment.....	94
8.0	ENVIRONMENTAL ASSESSMENT.....	96
8.1	Effects Assessment.....	96



8.1.1	Water Quality.....	96
8.1.1.1	Potential Interactions, Issues and Concerns.....	96
8.1.1.2	Mitigation.....	98
8.1.1.3	Determination of Significance.....	99
8.1.2	Water Quantity.....	99
8.1.2.1	Potential Interactions, Issues and Concerns.....	99
8.1.2.2	Mitigation.....	100
8.1.2.3	Determination of Significance.....	101
8.1.3	Fish Resources.....	101
8.1.3.1	Potential Interactions, Issues and Concerns.....	101
8.1.3.2	Mitigation.....	102
8.1.3.3	Determination of Significance.....	102
8.1.4	Vegetation.....	103
8.1.4.1	Potential Interactions, Issues and Concerns.....	103
8.1.4.2	Mitigation.....	104
8.1.4.3	Determination of Significance.....	105
8.1.5	Sensitive Sites.....	105
8.1.5.1	Potential Interactions, Issues and Concerns.....	105
8.1.5.2	Mitigation.....	106
8.1.5.3	Determination of Significance.....	106
8.1.6	Terrestrial Wildlife.....	106
8.1.6.1	Potential Interactions, Issues and Concerns.....	106
8.1.6.2	Mitigation.....	108
8.1.6.3	Determination of Significance.....	109
8.1.7	Avifauna.....	110
8.1.7.1	Potential Interactions, Issues and Concerns.....	110
8.1.7.2	Mitigation.....	111
8.1.7.3	Determination of Significance.....	112
8.1.8	Air Quality.....	112
8.1.8.1	Potential Interactions, Issues and Concerns.....	112
8.1.8.2	Mitigation.....	113
8.1.8.3	Determination of Significance.....	113
8.1.9	Noise.....	114
8.1.9.1	Potential Interactions, Issues and Concerns.....	114
8.1.9.2	Mitigation.....	115
8.1.9.3	Determination of Significance.....	115
8.1.10	Viewshed.....	115
8.1.10.1	Potential Interactions, Issues and Concerns.....	115
8.1.10.2	Mitigation.....	116
8.1.10.3	Determination of Significance.....	116
8.1.11	Recreation Access and Park Use.....	116
8.1.11.1	Potential Interactions, Issues and Concerns.....	116
8.1.11.2	Mitigation.....	118
8.1.11.3	Determination of Significance.....	119



8.1.12	Cultural Environment	119
8.1.12.1	Potential Interactions, Issues and Concerns	119
8.1.12.2	Mitigation	120
8.1.12.3	Determination of Significance	121
8.2	Cumulative Effects	122
8.2.1	Water Quality	122
8.2.2	Water Quantity	123
8.2.3	Fish and Fish Habitat	123
8.2.4	Vegetation	123
8.2.5	Sensitive Sites	123
8.2.6	Terrestrial Wildlife	124
8.2.7	Avifauna	124
8.2.8	Recreational Access and Park Use	125
8.2.9	Air Quality	125
8.2.10	Noise	126
8.2.11	Viewshed	126
8.3	Accidents, Malfunctions and Unplanned Events	126
8.3.1	Hydrocarbon or Hazardous Materials Spills	127
8.3.2	Introduction of Sediment into Watercourses	127
8.3.3	Failure of the Snowmaking Infrastructure	128
8.3.4	Forest Fires	129
8.4	Effects of the Environment on the Project	129
8.4.1	Climate Change	130
8.4.2	Seismic Activity	130
8.4.3	Slope Instability	130
8.4.4	Avalanches	131
9.0	CONCLUSIONS	132
10.0	COMMITMENTS AND ASSURANCES	133
11.0	REFERENCES	159

List of Tables

Table 2-1	Comprehensive list of approvals, permits and licences required for the Cypress Venue to proceed	10
Table 6-1	Proposed Cypress Venue Competition Schedule	46
Table 6-2	Ranking guidelines for interactions between activities and Values.	56
Table 6-3	Ranking the significance of local effects on Biological Valued Components (e.g., wildlife, vegetation or habitat)	58
Table 6-4	Ranking the significance of local effects of Physical-Chemical Valued Components (e.g., water, air, soil)	59
Table 6-5	Ranking the significance of local effects on Socio-economic Valued Components (e.g., human use, visual, artifacts)	59
Table 7-1	Average rainfall (mm) at Hollyburn Ridge from 1954 to 1990	69



Table 7-2	Average precipitation (mm) at Hollyburn Ridge from 1954 to 1990.....	69
Table 7-3	Daily maximum, daily minimum, daily mean, extreme maximum, and extreme minimum at Hollyburn Ridge. Information based on data collected from 1954 to 1990 (Degrees Celsius).....	70
Table 7-4	Monthly Mean Runoff from Cypress Creek.....	70
Table 7-5	Monthly Mean Runoff Pro-rated from MacKay Creek values	71
Table 7-6	Fish species present in the Cypress Creek (900-073500) Watershed. .	71
Table 7-7	Rare plants that may occur in the assessment area.	78
Table 7-8	Mammals of conservation concern that may occur in the Assessment Area	84
Table 7-9	Birds of conservation concern that may occur in the project area.....	88
Table 8-1	Noise levels for the SMI “Polecat” Snowmaker.....	114
Table 10-1	Summary of VANOC Commitments for the Cypress Venue.	134

List of Figures

Figure 1-1	Vancouver 2010 Olympic Winter Games Venue Locations	1
Figure 1-2	Proposed Locations for the Freestyle and Snowboard Venues on Black Mountain	2
Figure 4-1	Project Area	17
Figure 4-2	Proposed Cypress Venue	19
Figure 4-3	Proposed Snowboard Venue	22
Figure 4-4	PGS Course from the 2002 Winter Games in Salt Lake City	20
Figure 4-5	Halfpipe from the 2002 Winter Games in Salt Lake City	21
Figure 4-6	Proposed Freestyle Venue.....	24
Figure 4-7	Proposed Snowmaking Facilities.....	27
Figure 4-8	Cross section of the reservoir.....	28
Figure 4-9	Drawings of the Reservoir and Creek Pump Houses.....	31
Figure 4-10	Snow Making System.....	33
Figure 4-11	Examples of carriage-mounted and tower-mounted snow guns	34
Figure 4-12	Temporary seating at the Snowboard Venue for the 2002 Winter Games in Salt Lake City	35
Figure 4-13	Temporary construction from the 2002 Winter Games in Salt Lake City	35
Figure 4-14	Proposed Reroute for the Baden-Powell Trail	37
Figure 6-1	Project Assessment Area.....	48
Figure 6-2	Estimated Project Construction, Operation and Decommissioning / Legacy Timeline.....	49
Figure 6-3	Cumulative Effects Assessment Area	62
Figure 7-1	Biogeoclimatic Zones of the project area.....	67
Figure 7-2	Waterbodies and streams within the Assessment Area.....	74
Figure 7-3	Sensitive habitat locations.....	81



List of Appendices

Appendix A – BC Parks Impact Assessment Process: Screening Matrix, Significance Matrix, Cumulative Effects Screening Matrix and Audit Record

Appendix B – Vegetation Species Observed within the Assessment Area

Appendix C – Mammal Species that are Known to Occur within Cypress Provincial Park

Appendix D – Birds Species Known to Occur within Cypress Provincial Park

Appendix E – Environmental Management Plan

Appendix F – Baseline Reports

Appendix G – Consultation Record

