

A majestic view of the Koryakskiy and Avachinskiy and Kozelskiy volcanoes opens from the top of the Moroznaya and Sedlo mountains.

Ski complex on Moroznaya and Sedlo mountains has everything to become a modern world-class resort. This is an excellent platform for sportsmen training and active rest of young people!



Ski complex «Moroznaya-Sedlo»

Moroznaya mounting is a place for resting, training and holding competitions in different types of skiing, which can rightly be called the most famous ski center not only in the Kamchatka Peninsula, but throughout the Russian Far East. The site is located 7 kilometers from Yelizovo town, a ten minute drive from the airport and 38 kilometers from Petropavlovsk-Kamchatskiy.

Commercial part of the complex comprises the north-eastern slopes of the mountain Sedlo, adjacent to the northern side of Moroznaya mountain. The maximum elevation, which is available for skiing is 774 m.

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The main advantages of a resort:

- the presence of an abundance of slopes for skiers of all classes (beginners, fans, skilled skiers and snowboarders, professionals);
- availability of a various infrastructure for recreation;
- the possibility to study the methods of extreme skiing;
- better accessibility in relation to the airport.

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The master plan for the development of the site Moroznaya-Sedlo provides modernization of Moroznaya mountain, mainly as a center for sportsmen training and creation a larger commercial mountain resort on mountain Sedlo.



MOROZNAYA-SEDLO
S K I C O M P L E X

THE MAIN OBJECTS OF THE RESORT:

- the service center;
- processing building;
- parking for cars, bus stop;
- 2 hotels;
- 7 lifts;
- sports grounds with artificial cover a skating rink;
- lighting and snowmaking system for pistes;
- the lake for snowmaking system;
- objects of engineering infrastructure.



MOROZNAYA-SEDLO SKI COMPLEX

КАМЧАТКА



Горизонтали проведены через 5 метров / Contour Interval: 5 Meters
Февраль 2011 г. / Date: 03/2011

0m 250 500 750 1000 1250

УСЛОВНЫЕ ОБОЗНАЧЕНИЯ LEGEND

Уровень трудности трасс /
Ski Trail Ability Level

Простые / Easier



Более трудные / More Difficult



Самые трудные / Most Difficult



Существующие трассы /
Existing Pistes



Существующие внетрассовые
спуски / Existing Off-Piste



Существующие подъемники -
подлежат сносу /
Existing Lifts to be Removed



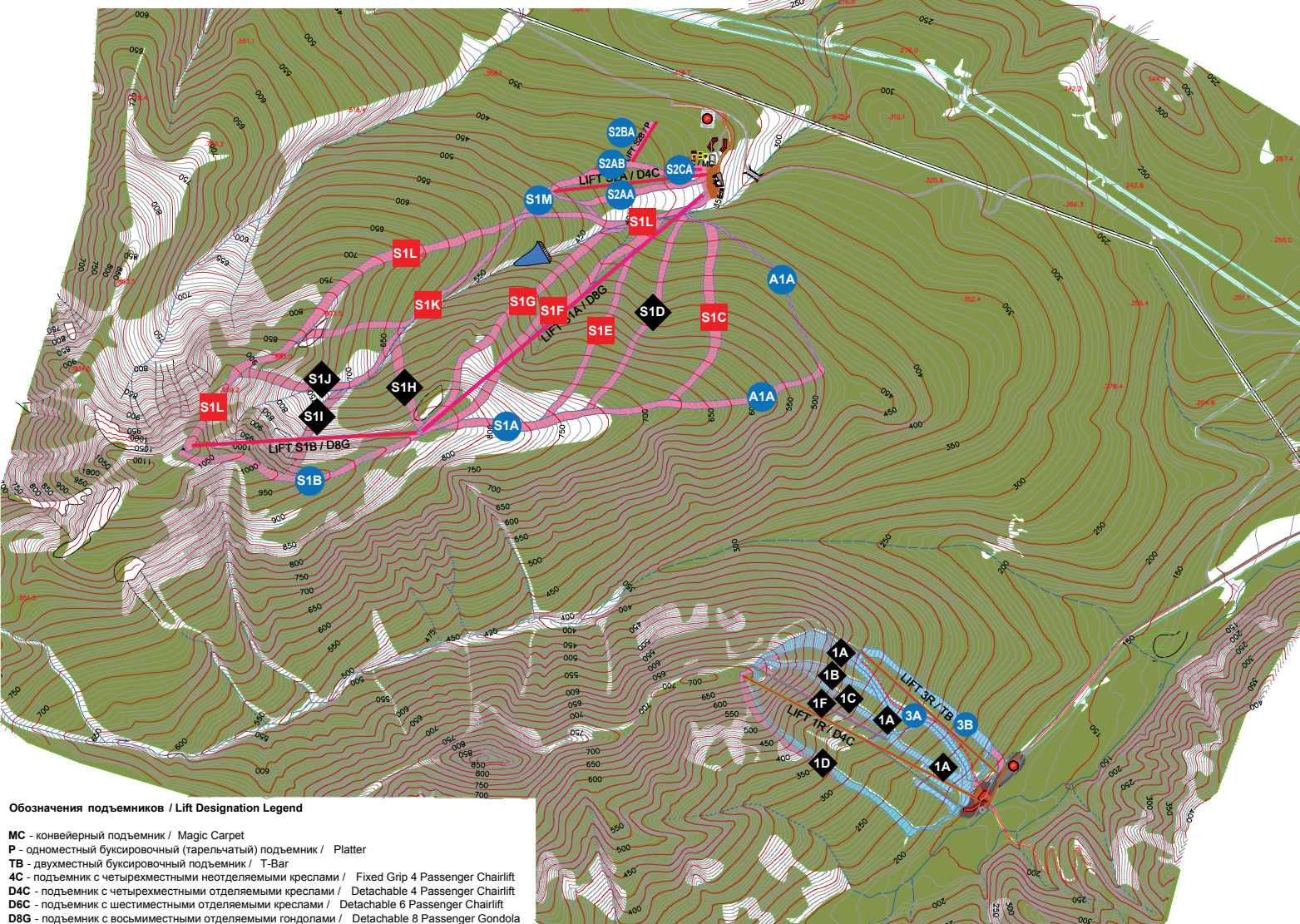
Подъемники этапа 1
Phase 1 Lifts



Трассы этапа 1
Phase 1 Pistes



Подъемники СДЮШОР "Морозная"
Moroznaya ski school lifts



Обозначения подъемников / Lift Designation Legend

MC - конвейерный подъемник / Magic Carpet

P - одноместный буксировочный (тарельчатый) подъемник / Platter

TB - двухместный буксировочный подъемник / T-Bar

4C - подъемник с четырехместными неотделяемыми креслами / Fixed Grip 4 Passenger Chairlift

D4C - подъемник с четырехместными отделяемыми креслами / Detachable 4 Passenger Chairlift

D6C - подъемник с шестиместными отделяемыми креслами / Detachable 6 Passenger Chairlift

D8C - подъемник с восьмиместными отделяемыми гондолами / Detachable 8 Passenger Gondola

ЭТАПЫ СТРОИТЕЛЬСТВА - ГОРА МОРОЗНАЯ И ГОРА СЕДЛО / GORA MOROZNAYA & GORA SEDLO - DEVELOPMENT PHASING PLAN

MP1-2

PISTES SPECIFICATION

LIFT DESIGNATION LEGEND	№ PISTE	SKIERS LEVEL	TOP HEIGH, M	BOTTOM HEIGH, M	ELEVATION, M	HORIZON. LENGTH, M	LENGTH ON SLOPE, M	AVERAGE STEEPNESS, %	MAX STEEPNESS, %	AVERAGE WIDTH, M	HORIZON. SQUARE, HE	PISTES SQUARE, HE	SKIERS STRENGTH, PEOPLE/HE	CAPACITY, PEOPLE
Lift 1R		DETACHABLE 4 PASSENGER CHAIRLIFT												
	1A	6	683	173	510	1 970	2 035	26%	57%	50	9,93	10,26	23	230
	1B	6	640	365	275	660	715	42%	58%	42	2,74	2,97	23	70
	1C	6	530	325	205	580	615	35%	59%	36	2,08	2,21	23	50
	1D	7	682	173	509	1 894	1 961	27%	67%	44	8,24	8,53	30	260
	1F	7	660	310	350	865	933	40%	85%	31	2,64	2,85	30	90
Total lift 1R	5						6 259					26,82		700
Lift 3R		T-BAR												
	3A	2	400	170	230	1 275	1 296	18%	24%	45	5,80	5,89	75	440
	3B	2	395	170	225	1 145	1 167	20%	23%	35	4,00	4,08	75	310
Total lift 3R	2						2 463					9,97		750
Lift S1A		DETACHABLE 8 PASSENGER GONDOLA												
partly	S1A	3	825	365	460	3 635	3 664	13%	39%	33	12,11	9,16	60	550
partly	S1C	4	675	380	295	1 165	1 202	25%	41%	60	7,00	1,81	60	110
	S1D	6	730	370	360	1 345	1 392	27%	53%	41	5,52	5,71	23	130
	S1E	5	755	430	325	1 130	1 176	29%	45%	41	4,66	4,85	45	220
	S1F	4	845	380	465	1 975	2 029	24%	41%	53	10,42	10,70	60	640
	S1G	5	845	415	430	1 750	1 802	25%	46%	47	8,31	8,56	45	390
	S1H	6	845	635	210	535	575	39%	51%	65	3,46	3,72	23	80
Total lift S1A	7						11 840					44,51		2 120
Lift S1B		DETACHABLE 8 PASSENGER GONDOLA												
	S1B	2	1 090	845	245	1 550	1 569	16%	29%	45	7,05	7,14	75	540
	S1I	6	955	705	250	610	659	41%	58%	58	3,54	3,83	23	90
partly	S1J	6	915	620	295	1 130	1 168	26%	51%	46	5,21	1,35	23	30
partly	S1K	4	825	515	310	1 570	1 600	20%	44%	33	5,13	1,31	60	80
partly	S1L	5	1 090	355	735	3 795	3 866	19%	46%	45	16,95	4,32	45	190
	S1M	4	510	460	50	200	206	25%	25%	45	0,90	0,93	60	60
Out piste 1/4 strength	S1N	7	935	705	230	850	881	27%	45%	56	4,80	4,97	8	40
Total lift S1B	7						9 949					23,85		1 050

Lift S2A		DETACHABLE 4 PASSENGER CHAIRLIFT													
	S2AA	1	460	355	105	975	981	11%	14%	35	3,42	3,44	75	260	
	S2AB	1	455	365	90	830	835	11%	14%	42	3,51	3,53	75	260	
Total lift S2A	2						1 816					6,97		520	
Lift S2B		PLATTER													
	S2BA	1	395	365	30	280	282	11%	11%	36	1,01	1,02	75	80	
Total lift S2B	1						282					1,02		80	
Lift S2C		MAGIC CARPET													
	S2CA	1	365	355	10	90	91	11%	11%	42	0,38	0,38	150	60	
Total lift S2C	1						91					0,38		60	
All lifts	25						32,7 km					113,52		5260	

LIFTS SPECIFICATION

Phases	1							TOTAL
	№	1	2	3	4	5	6	
LIFT DESIGNATION LEGEND	1R	3R	S1A	S1B	S2A	S2B	S2C	
Lift type	D4C	TB	D8G	D8G	D4C	P	MC	
Year construction		2009						
Top elevation, m	680	400	845	1 090	460	393	365	
Bottom elevation, m	175	170	355	845	355	365	355	
Total elevation, m	505	230	490	245	105	28	10	1613
Horizontal Distance, m	1 590	1 105	2 270	1 385	935	275	85	
Slope Distance, m	1 668	1 129	2 322	1 407	941	276	86	7829
Average Slope, %	32%	21%	22%	18%	11%	10%	12%	18%
Rated capacity, people/hour	2 400	1 000	2 800	2 800	2 000	600		11600
(V.T.M.) thousand m/hour	1 212	230	1 372	686	210	17	0	3727
Speed, m/s	5,0	3,0	6,0	6,0	5,0	2,0	0,6	
Time trip, min	5,56	6,27	6,45	3,91	3,14	2,30	2,38	
Operating, hour/day	7,0	7,0	7,0	7,0	7,0	7,0	7,0	
(V.T.M.) demand/day	7 075	2 120	4 118	3 809	940	940	940	
Loading eff., %	90%	90%	95%	95%	90%	85%		
Access Reduction, %	10%	15%	25%	20%	50%	0%	0%	
Lift system SCC, people	970	580	1 650	960	700	110	50	5020

PISTES TYPES



GIANT-SLALOM

Piste 1D (black) is currently used for training and competition in giant-slalom. Start and finish are located at elevations 625 and 325 meters respectively, forming a vertical elevation of 300 meters, that corresponds to the minimum FIS requirement for competitions of the Olympic Games, the World Championship and the Cup. The maximum gradient on this piste is 55%. This piste does not have enough flat area at the base for the finish area. For this reason, the piste was identified as training.

SLALOM

Nowadays, trainings and competitions in slalom are held on the piste 1B (black). This piste has a maximum slope of 58%, that exceeds the maximum 52%, fixed by FIS. The average slope is 50%, which also is above the limit of 45% set in the rules of FIS. The plot of the slope, used for the slalom pistes organization, has a vertical elevation of 200 m (from 625 to 425 m). This



slope also has not got stopping area at its base. Due to the excess of medium and maximum slope, as well as the lack of finish area, this slope can be classified only as training.



MOGUL

Part of the piste 1C (black) from point 535 m till point 440 m (elevation is 95 m) is used for mogul training. This elevation is in the range 80-140 m set in the FIS rules. The average slope of the site is 48%, that also meets the requirements

of FIS (44,5% - 62,5%). However, due to the lack of flat areas on the start and finish, it can be classified only as training.



HALF-PIPE

Half-pipe 1 is located in the lower part of the piste 1A (black) between points 290 and 260 meters. With slope of 26% half-pipe has a length of 121 m, that fully meets the standards of FIS. The second half-pipe is planned on Sedlo mountain on the piste S1F (red) between points 510 and 475 m (elevation is 35 m). With slope of 27% and length of 135 meters this construction is also meets the requirements of FIS for competitions of the highest rank.

TUMBLING

Springboard for skiing acrobatic is located between pistes S1D (black) and S1C (red). For the construction of this facility a small amount of earthworks would be required to bring the profile of the slope in accordance with the parameters of FIS.

PISTES TYPES



SNOWPARKS

At the site of the mountain resort Moroznaya-Sedlo mountains construction of snow parks of various categories of difficulty is planned. Snowpark for beginners will be located on the piste S2AA (blue), snowpark for middle complexity will be located on the road 3A (blue) on Moroznaya mountain.



OTHER TYPES OF WINTER SPORTS AND RECREATION

PISTES FOR FLAT LAND SKIING AND SNOWSHOEING

A network of pistes for flat land skiing and snowshoeing is proposed on the territory of the mountain Sedlo on steep slopes to the north of the capital construction areas. A connection with the area of Moroznaya mountain is proposed. Daily parking may be a starting point for walks on these pistes and paths.

Piste for flat land skiing has a width of 6 meters and is prepared for classical and skating stride moving.

Summer hiking and multipurpose paths can be used for snowshoeing, because the path for snowshoeing can be 1-2 meters wide.

Pistes for flat land skiing and snowshoeing paths connect the areas of capital development at the base area, as well as allow reaching farther parts of the valley.



TUBING

The slope for tubing is located on the east side from the slopes for beginners and it is easily accessible for visitors coming from the car parking and resort. The relief in this area is well suited for wide and long equipment installations. Magic Carpet lift, located on the east side, transports skiers with their «donut tubes» to the top of the slip tracks.

Wide and long stop area is located at the bottom of the tracks.

This type of holiday is very popular for resort guests of all ages, especially among skiers-beginners and snowboarders and who doesn't ski on the mountain.

SKATING

Outdoor ice rink is located near other sports facilities, as well as near daily parking and hotels of the resort. Rink should be available for evening skiing, after the slopes closing. Rink platform can be used as a free popular skating so for scheduled sports events. Skates rental can be located on the first floor of the adjacent building.

Plan of resort summer using provides that two lifts are in operation in summer time for providing a various recreational activities on the mountains. The resort town is the starting point of different types of summer recreational activities, as well as an attractive place to visit in summer (with its restaurants, shopping and entertainment).

The zone of mountain biking – downhill, mountain bike area - the cross, zip-track area and summer riding area from mountains and quad bikes and sport-utility vehicle zone.

Paved and lighted multi-purpose paths are designed for runners, walkers, cyclists, roller skaters, and any other non-motorized vehicles.

In summer, visitors can easily move through

PLAN OF RESORT SUMMER USING

the system of paths, without using cars and roads. Shops and rentals of winter equipment during the summer switch for sale and rent of bicycles to encourage the use of these paths.

Mountain resort on Moroznaya and Sedlo mountains has excellent conditions for hiking as through the valley so the mountains in the area of upper lift stations S1A and S1B.

Tourists can use the gondola lift to get to the top of the paths as near intermediate station, so on the top of Sedlo mountain.

Restaurant, providing tourists and sightseers with food is planned near the top lift station S1B.

Great views of tens kilometers around with a beautiful panorama of the surrounding mountain ranges and volcanoes, which will attract visitors

from all region and out of its borders are opened from this place.

Evening events such as concerts, dinners, corporative and family celebrations, astronomical observations, etc. can be organized in the mountain restaurant.



FINANCIAL-ECONOMIC ACTIVITY OF THE PROJECT SKI RESORT «MOROZNAYA-SEDLO»

Total cost of the project, billion rubles	7,6
Net present value (NPV), million rubles	2 175,0
Internal rate of return (IRR)	22,69 %
Discounted payback period, year	10,0
Borrowed current assets share in initial investments	50 %
Borrowed current assets share in total investments (including the replacement of basic means)	47,8 %
WACC	16,18
Number of employees	225