



TRANSPORTATION SERVICES POLICY MANUAL

Subject: Ice Roads	Approval Date: January 20, 2014	By-Law No. 1850-14 <i>Amended by By-Law No. 14-2020</i>
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7.4 ICE ROADS

1. GENERAL POLICY

- 1.1 Municipal Policy for the development and maintenance of ice roads that are maintained by the Municipality shall be guided by criteria established by Council.
- 1.2 The Municipality will provide an ice road for the public as approved by Council, when the Operations Department deems it safe for its employees and the travelling public. Liability Insurance must be in place before the ice road will be maintained.

2. DEFINITIONS

- 2.1 “Maintenance” – shall mean clearing of the ice road and the approach ramps of accumulated snow.
- 2.2 “Ice” – all references to loads or depth of ice refer to “Clear Blue Ice”. Slush ice is not taken into account. The Municipality refers to the “Gold Formula Ice Chart” (See Section 7), which was developed by Dr. Lorne Gold of the National Research Council of Canada for estimating ice loads to determine type of maintenance equipment that will be used.
- 2.3 “Ice road” – shall mean a roadway from the termination of the publicly maintained road directly to the area requiring the ice road, via the shortest route, generally a width in excess of 10 meters.

3. ICE ROAD REQUIREMENTS

- 3.1 Listed below is the area within the Municipality that requires an ice road:

Cochenour to McKenzie Island

SEE FIGURE 1 – Ice Road Layout

4. PROCEDURE

- 4.1 The ice road will not be flooded by the Municipality; the ice road will be formed by natural freezing.
- 4.2 Measuring the thickness of ice will be started when “clear blue ice” has accumulated to a depth to support a person on foot – this will be determined



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by the Operations Supervisor. The thickness of the ice will be monitored on a weekly basis, with a minimum of 36 tests being completed along the proposed route. A minimum of 12 tests will be conducted along the centerline and each edge of the proposed route.

- 4.3 The ice road shall be patrolled and conditions recorded at frequency determined by the Operations Supervisor based on the time of year and present weather conditions.
- 4.4 Areas of concern on the ice road shall be marked with barricades or reflective markers.
- 4.5 Vehicle windows shall be all the way down.
- 4.6 When completing ice measurements there shall be a minimum of two (2) people when out on the ice surface, with no more than thirty (30) feet in distance from another person.

5. SIGNAGE

- 5.1 A sign must be erected at each approach to the ice-road (2 signs) and the letters shall be with reflective tape. The signs shall be removed once the Municipality discontinues maintaining the ice road. The signs shall have the following information on it:

McKenzie Island Ice Road
Maintained by the Municipality of Red Lake (along with logo)
Maximum Speed 20 km.
Problems with Ice Road please call ASAP 727-2597

- 5.2 Upon removal of the 2 signs, the Municipality shall install new signs stating:

McKenzie Island Ice Road No Longer Maintained
Ice Road Closed

6. MAINTENANCE

- 6.1 Maintenance of the ice road will start after the erection of the signs and the ice road is deemed safe for travel by the Operations Department. All drilled test holes must equal or exceed 12 inches of "Clear Blue Ice" and maintenance of the ice road will cease once the ice no longer has 12 inches of "Clear Blue Ice". This determination will be the responsibility of the Operations Supervisor.



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6.2 Snow will be removed from the ice road after an accumulation of six inches.

7. GOLD FORMULA ICE CHART

BEARING CAPACITY OF BLUE ICE CHART

IMPERIAL		METRIC	
1 in = 100 lbs	21 in = 44,103 lbs	2 cm = 28 kg	52 cm = 19 009 kg
2 in = 400 lbs	22 in = 48,403 lbs	4 cm = 112 kg	54 cm = 20 499 kg
3 in = 900 lbs	23 in = 52,904 lbs	6 cm = 253 kg	56 cm = 22 046 kg
4 in = 1,600 lbs	24 in = 57,604 lbs	8 cm = 450 kg	58 cm = 23 649 kg
5 in = 2,500 lbs	25 in = 62,505 lbs	10 cm = 703 kg	60 cm = 25 308 kg
6 in = 3,600 lbs	26 in = 67,605 lbs	12 cm = 1 012 kg	62 cm = 27 023 kg
7 in = 4,900 lbs	27 in = 72,905 lbs	14 cm = 1 378 kg	64 cm = 28 795 kg
8 in = 6,400 lbs	28 in = 78,406 lbs	16 cm = 1 780 kg	66 cm = 30 623 kg
9 in = 8,101 lbs	29 in = 84,106 lbs	18 cm = 2 278 kg	68 cm = 32 507 kg
10 in = 10,001 lbs	30 in = 90,006 lbs	20 cm = 2 812 kg	70 cm = 34 447 kg
11 in = 12,101 lbs	31 in = 96,107 lbs	22 cm = 3 403 kg	72 cm = 36 443 kg
12 in = 14,401 lbs	32 in = 102,407 lbs	24 cm = 4 049 kg	74 cm = 38 496 kg
13 in = 16,901 lbs	33 in = 108,908 lbs	26 cm = 4 752 kg	76 cm = 40 605 kg
14 in = 19,601 lbs	34 in = 115,608 lbs	28 cm = 5 512 kg	78 cm = 42 771 kg
15 in = 22,502 lbs	35 in = 122,509 lbs	30 cm = 6 327 kg	80 cm = 44 992 kg
16 in = 25,602 lbs	36 in = 129,609 lbs	32 cm = 7 199 kg	82 cm = 47 270 kg
17 in = 28,902 lbs	37 in = 136,910 lbs	34 cm = 8 127 kg	84 cm = 49 604 kg
18 in = 32,402 lbs	38 in = 144,410 lbs	36 cm = 9 111 kg	86 cm = 51 994 kg
19 in = 36,103 lbs	39 in = 152,111 lbs	38 cm = 10 151 kg	88 cm = 54 440 kg
20 in = 40,003 lbs	40 in = 160,011 lbs	40 cm = 11 248 kg	90 cm = 56 943 kg
		42 cm = 12 401 kg	92 cm = 59 502 kg
		44 cm = 13 610 kg	94 cm = 62 117 kg
		46 cm = 14 876 kg	96 cm = 64 788 kg
		48 cm = 16 197 kg	98 cm = 67 516 kg
		50 cm = 17 575 kg	100 cm = 70 300 kg

IMPERIAL AND METRIC CONVERSIONS
 Inches x 2.54 = cm Lbs x .4535 = kg
 Cm x 0.3937 = in Kg x 2.205 = lbs





The Corporation of the Municipality of Red Lake

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FIGURE 1
ICE ROAD LAYOUT

