Scottish Trunk Road Network Management Contract
South West Unit

Attachment 6.1 Appendices for Winter Service Plan

Table 6.1.1 - Winter Service Patrol Record

Winter Service Patrol start and end time	Weather conditions for Winter		Assessed road condition (by driver) (X)				Assessed residual salt level (by driver) (X)			Action implemented (use symbols provided below)*						Route salted prior to patrol (X)		
	Air (°C)	Road Surface temperature (°C)	Snow	Icy	Wet	Dry	High	Medium	Low	Action code	Treatment Type	Spread rate (g/m^2)	Approximate location of salting or other action	Start Time	End Time	Yes	No	Time of salting

*Action symbols:

1 Spot treatment as instructed by the Winter Service Duty Officer.

2 Spot treatment as determined by driver.

3 Route treatment as advised by the Winter Service Duty Officer.

4 Route treatment as determined by driver.

5 Attend to runoff or seepage on surface.

6 Remove obstruction (e.g. dead dog, fallen tree, and other obstructions.) from surface.

7 Pre-wetted Salt

8 Dry Salt

9 Potassium Acetate

Table 6.1.2 - Precautionary Treatment Routes determined by the Operating Company (20 gram routes) 2 Carriageway Route, 1 Footpath route

Route	Depot	Description	Depot to Route (km)	Time to Route (mins)	Total Route Length (km)	De-icing Length (km)	Average Speed (kph)	Route Time (mins)	Route to Depot (km)	Route Efficiency	Average Width of Route (m)	Alternative Access	Route Tonnage at 20 g/sq m (tonne)	Route Tonnage at 40 g/sq m pre-wet (tonne)	Treatment Type
1	Polmadie 1	A725 Whistleberry to EastKilbride and M74 to jct 7	15.1	20	97.4	44.3	53	110	16.9	34.2	6.3	Ayr	5.6	11.2	Pre-wet
2	Polmadie 2	M74 jct 3A (DBFO boundary) to Junction 1	9.3	15	92.5	43.9	53	105	3.6	41.7	7.2	Ayr	6.3	12.6	Pre-wet
3	Polmadie 3	M8 jct 12 to M8 jct 26 and M80 to jct 2 with M74 Jct 1	18.7	25	66.5	39	36	110	11.5	40.3	6.8	Paisley	5.3	10.6	Pre-wet
4	Polmadie 4	M74 jct 7 to M74 jct 10	21.3	25	54.2	33	33	100	33.9	30.2	8.7	Ayr	5.7	11.4	Pre-wet
5	Polmadie 5	M74 Jct 8 to M74 Jct 12	26.3	30	104.2	26	60	105	26.3	16.6	8.8	Ayr	4.6	9.2	Pre-wet
6	Polmadie 6	M8 jct 10 to J19 and M80	14.9	20	92.3	52.5	50	110	16.6	42.4	7.1	Paisley	7.5	15.0	Pre-wet
7	Polmadie 7	M8 Secondary e/b and M77 Junction 1 to Jct 5	7	10	77.7	43.9	47	99	9.6	46.6	8.7	Ayr	7.6	15.2	Pre-wet
8	Polmadie 8	M74 J9 - J12	32.3	35	46.9	23.8	28	100	34.7	20.9	10	Ayr	4.8	9.6	Pre-wet
9	Polmadie 9	Erskine, Kingston, White Cart viaduct and St James Interchange	13	20	81.8	6.8	45	110	9	6.6	10	Polmadie			Potassium Acetate spray
10	Paisley 1	M8 J29 to Jct 30 and A82 to Stoneymollen	12	20	68.4	50	53	77	12.5	53.8	6.9	Polmadie	6.9	13.8	Pre-wet
11	Paisley 2	M8 Jct 29 to Jct 22 and A737 to Kilwinning	10.6	14	74	55	43	104	12.9	56.4	7.1	Ayr	7.8	15.6	Pre-wet

Route	Depot	Description	Depot to Route (km)	Time to Route (mins)	Total Route Length (km)	De-icing Length (km)	Average Speed (kph)	Route Time (mins)	Route to Depot (km)	Route Efficiency	Average Width of Route (m)	Alternative Access	Route Tonnage at 20 g/sq m (tonne)	Route Tonnage at 40 g/sq m pre-wet (tonne)	Treatment Type
12	Paisley 3	M8 Jct 30 to A8 Greenock and A82 slip roads	13	20	86	48.6	51	101	12.4	43.6	7	Polmadie	6.8	13.6	Pre-wet
13	Paisley 4	A737 slips and M8 J29 - J24	11	15	88.7	33.5	51	105	9.7	30.6	6.7	Polmadie	4.5	9.0	Pre-wet
14	Paisley 5	A78 Cartsdyke Greenock to Bankfoot roundabout	16.7	20	60.9	38.9	38	97	21.6	39.2	7	Polmadie	5.4	10.8	Pre-wet
15	Ayr 1	A76 Mauchline Crossroads roundabout - Mennock	14.8	20	70.3	51.1	37	113	21.1	45.4	7	Dumfries	7.2	14.4	Pre-wet
16	Ayr 2	A77 Ayr (Bankfield Roundabout)- Girvan	9	12	57.3	53.4	31	110	9.9	70.1	7	Stranraer	7.5	15.0	Pre-wet
17	Ayr 3	A77 Ayr - Kilmarnock and A76 Kilmarnock to Cross roads roundabout	5	8	90.3	41.7	53	103	9.8	37.1	7	Dumfries	5.8	11.6	Pre-wet
18	Ayr 4	A78 slips and from Warrix Interchange - Hunterston	8	10	85.9	49.4	47	110	19.4	41.1	8	Paisley	7.9	15.8	Pre-wet
19	Ayr 5	Ayr Bypass and A78 - Warrix Interchange	8	12	70.3	54.7	51	82	9.2	58.4	7	Paisley	7.7	15.4	Pre-wet
20	Ayr 6	A78 Hunterston ore terminal roundabout to Bankfoot r/about	40	45	46.5	23.8	47	60	54.4	15.9	7	Paisley	3.3	6.6	Pre-wet
21	Dumfries 1	Dumfries A701 roundabout to Beattock	3.6	7	38.6	32.2	51	45	33.6	42.5	7	Polmadie	4.5	9.0	Pre-wet

Route	Depot	Description	Depot to Route (km)	Time to Route (mins)	Total Route Length (km)	De-icing Length (km)	Average Speed (kph)	Route Time (mins)	Route to Depot (km)	Route Efficiency	Average Width of Route (m)	Alternative Access	Route Tonnage at 20 g/sq m (tonne)	Route Tonnage at 40 g/sq m pre-wet (tonne)	Treatment Type
22	Dumfries 2	A75 Glasgow Rd roundabout to Gretna	6.3	10	63.3	50	38	99	1.9	69.9	7.5	Polmadie	7.5	15.0	Pre-wet
23	Dumfries 3	A76 Glasgow Rd roundabout - Mennock	6.3	10	50.7	44.3	52	58	40.3	45.5	7.5	Ayr	6.6	13.2	Pre-wet
24	Castle Douglas 1	A75 Creetown East - Hightae roundabout, start of Castle douglas bypass	38.3	50	37.7	33.7	54	42	3.5	42.4	8	Stranraer	5.4	10.8	Pre-wet
25	Castle Douglas 2	A75 Hightae roundabout, start of Castle douglas bypass - Glasgow Rd roundabout	3.5	10	47.4	41.6	50	57	21.2	57.7	8	Dumfries	6.7	13.4	Pre-wet
26	Stranraer 1	A77 Stranraer - Girvan	1.4	5	62.4	55.9	43	87	48	50.0	7	Ayr	7.8	15.6	Pre-wet
27	Stranraer 2	A75 Stranraer - Creetown East	1.4	5	60.2	50.6	36	100	49.4	45.6	8	Castle Douglas	8.1	16.2	Pre-wet
	CSD 2 Routes														
28	Crawford 1	M74 jct 12 to jct 15 HS and lane 1	19.2	15	84.4	44.8	69.7	72.6	18.7	36.6	6.9	Lockerbie	6.19	8.66	Pre-wet
29	Crawford 2	M74 jct 12 to jct 14 lane 2 & 3. M74 N/B jct 14 to jct 12 HS and lane 1	19.8	15	40	36.2	49.7	48.3	19.8	45.5	7.4	Lockerbie	5.38	7.53	Pre-wet
30	Crawford 3	M74 jct 14 to jct 15 lane 2	3	4	86.8	65.3	63.5	82	14.9	62.5	7	Lockerbie	9.09	12.73	Pre-wet

Route	Depot	Description	Depot to Route (km)	Time to Route (mins)	Total Route Length (km)	De-icing Length (km)	Average Speed (kph)	Route Time (mins)	Route to Depot (km)	Route Efficiency	Average Width of Route (m)	Alternative Access	Route Tonnage at 20 g/sq m (tonne)	Route Tonnage at 40 g/sq m pre-wet (tonne)	Treatment Type
		& 3. M74 Jct 15 to jct 17 HS and lane 1. M74 N/B jct 15 to 14 HS and lane 1													
31	Crawford 4	M74 jct 16 to jct 14 HS & lane 1. M74 Jct 14to jct 12 Lane 2 & 3	30.7	26.5	92.3	52.2	65.0	85.1	18.7	36.8	7.3	Lockerbie	7.64	10.70	Pre-wet
32	Lockerbie 1	M74 jct 15 to jct 17 lane 2 & 3. M74 Jct 17 to M6 HS and lane 1.	37.7	32.3	82.9	58.5	63.5	85.1	4.2	46.9	7.4	Crawford	8.69	12.17	Pre-wet
33	Lockerbie 2	M6 to M74 jct 22 lane 2 & 3. M74 jct 22 to jct 17 HS & lane 1. S/B M74 Jct 17 to M6 lane 2 & 3.	14	10.5	93.8	62.5	52.5	107.2	1.6	57.1	7.3	Crawford	9.15	12.81	Pre-wet
34	Lockerbie 3	M74 N/B jct 21 to jct 15 lane 2 & 3	7.7	7	54.7	45.9	60.0	54.7	7.9	65.3	7.9	Crawford	7.26	10.16	Pre-wet
Footway routes															
1	Polmadie	East Kilbride Footways	22.1	30	21.7	11.7	14	90	10	21.7	2	Ayr	468.0		Brine spray
2	Ayr 1	Minishant, Maybole and Kirkoswald	14	18	23	10	12	112	26.4	15.1	2	Stranraer	400.0		Brine spray
3	Ayr 2	Girvan	38.6	40	8.3	8.3	6	90	38.7	9.7	2	Stranraer	332.0		Brine spray
4	Ayr 3 (and 3b)	Fairlie, Seamill, Kilwinning, Beith	44.1	50	50.6	15	28	109	45.8	10.1	2	Erskine	600.0		Brine spray
5	Ayr 4	Mauchline, New	15.7	20	44.2	9.8	24	109	38.2	10.1	2	Dumfries	392.0		Brine spray

Route	Depot	Description	Depot to Route (km)	Time to Route (mins)	Total Route Length (km)	De-icing Length (km)	Average Speed (kph)	Route Time (mins)	Route to Depot (km)	Route Efficiency	Average Width of Route (m)	Alternative Access	Route Tonnage at 20 g/sq m (tonne)	Route Tonnage at 40 g/sq m pre-wet (tonne)	Treatment Type
		Cumnock, Kirkconnel													
6	Stranraer 1	Lendalfoot, Ballantrae	39.4	45	11.9	3.4	11	68	30	4.2	2	Ayr	136.0		Brine spray
7	Stranraer 2	Cairnryan, A75 Stranraer	10	15	14.1	4.5	15	55	1.5	17.6	2	Ayr	180.0		Brine spray
8	Paisley 1	Port Glasgow, Greenock	19.3	35	21	21	11	110	14.9	38.0	2	Polmadie	840.0		Brine spray
9	Paisley 2	Dumbarton	6.2	35	8.8	8.8	7	80	7.1	39.8	2	Polmadie	352.0		Brine spray
10	Paisley 3	Wemyss Bay, Skelmorlie, Largs	32.3	45	17.8	12.3	10	106	44.2	13.0	2	Ayr	492.0		Brine spray
11	Dumfries 1	Sanquhar, Carronbridge, Thornhill, Closeburn, Lincluden	44.7	50	46.95	7.65	24	118	7.5	7.7	2	Ayr	306.0		Brine spray
12	Dumfries 2	Springholm, Crocketford, Locharbriggs	25.1	35	29.7	9.1	18	100	6.6	14.8	2	Ayr	364.0		Brine spray

Table 6.1.3 - Precautionary Treatment Routes determined by the Operating Company (40 gram routes) 2 Carriageway Route, 1 Footpath route

Route	Depot	Description	Depot to Route (km)	Time to Route (mins)	Total Route Length (km)	De-icing Length (km)	Average Speed (kph)	Route Time (mins)	Route to Depot (km)	Route Efficiency	Average Width of Route (m)	Alternative Access	Route Tonnage at 20 g/sq m (tonne)	Route Tonnage at 40 g/sq m pre-wet (tonne)	Treatment Type
1	Polmadie 1	A725 Whistleberry to EastKilbride and M74 to jct 7	15.1	20	97.4	44.3	53	110	16.9	34.2	6.3	Ayr	5.6	11.2	Pre-wet
2	Polmadie 2	M74 jct 3A (DBFO boundary) to Junction 1	9.3	15	92.5	43.9	53	105	3.6	41.7	7.2	Ayr	6.3	12.6	Pre-wet
3	Polmadie 3	M8 jct 12 to M8 jct 26 and M80 to jct 2 with M74 Jct 1	18.7	25	66.5	39	36	110	11.5	40.3	6.8	Paisley	5.3	10.6	Pre-wet
4	Polmadie 4	M74 jct 7 to M74 jct 10	21.3	25	54.2	33	33	100	33.9	30.2	8.7	Ayr	5.7	11.4	Pre-wet
5	Polmadie 5	M74 Jct 8 to M74 Jct 12	26.3	30	104.2	26	60	105	26.3	16.6	8.8	Ayr	4.6	9.2	Pre-wet
6	Polmadie 6	M8 jct 10 to J19 and M80	14.9	20	92.3	52.5	50	110	16.6	42.4	7.1	Paisley	7.5	15.0	Pre-wet
7	Polmadie 7	M8 Secondary e/b and M77 Junction 1 to Jct 5	7	10	77.7	43.9	47	99	9.6	46.6	8.7	Ayr	7.6	15.2	Pre-wet
8	Polmadie 8	M74 J9 - J12	32.3	35	46.9	23.8	28	100	34.7	20.9	10	Ayr	4.8	9.6	Pre-wet
9	Polmadie 9	Erskine, Kingston, White Cart viaduct and St James Interchange	13	20	81.8	6.8	45	110	9	6.6	10	Polmadie			Potassium Acetate spray
10	Paisley 1	M8 J29 to Jct 30 and A82 to Stoneymollen	12	20	68.4	50	53	77	12.5	53.8	6.9	Polmadie	6.9	13.8	Pre-wet
11	Paisley 2	M8 Jct 29 to Jct 22 and A737 to Kilwinning	10.6	14	74	55	43	104	12.9	56.4	7.1	Ayr	7.8	15.6	Pre-wet

Route	Depot	Description	Depot to Route (km)	Time to Route (mins)	Total Route Length (km)	De-icing Length (km)	Average Speed (kph)	Route Time (mins)	Route to Depot (km)	Route Efficiency	Average Width of Route (m)	Alternative Access	Route Tonnage at 20 g/sq m (tonne)	Route Tonnage at 40 g/sq m pre-wet (tonne)	Treatment Type
12	Paisley 3	M8 Jct 30 to A8 Greenock and A82 slip roads	13	20	86	48.6	51	101	12.4	43.6	7	Polmadie	6.8	13.6	Pre-wet
13	Paisley 4	A737 slips and M8 J29 - J24	11	15	88.7	33.5	51	105	9.7	30.6	6.7	Polmadie	4.5	9.0	Pre-wet
14	Paisley 5	A78 Cartsdyke Greenock to Bankfoot roundabout	16.7	20	60.9	38.9	38	97	21.6	39.2	7	Polmadie	5.4	10.8	Pre-wet
15	Ayr 1	A76 Mauchline Crossroads roundabout - Mennock	14.8	20	70.3	51.1	37	113	21.1	45.4	7	Dumfries	7.2	14.4	Pre-wet
16	Ayr 2	A77 Ayr (Bankfield Roundabout)- Girvan	9	12	57.3	53.4	31	110	9.9	70.1	7	Stranraer	7.5	15.0	Pre-wet
17	Ayr 3	A77 Ayr - Kilmarnock and A76 Kilmarnock to Cross roads roundabout	5	8	90.3	41.7	53	103	9.8	37.1	7	Dumfries	5.8	11.6	Pre-wet
18	Ayr 4	A78 slips and from Warrix Interchange - Hunterston	8	10	85.9	49.4	47	110	19.4	41.1	8	Paisley	7.9	15.8	Pre-wet
19	Ayr 5	Ayr Bypass and A78 - Warrix Interchange	8	12	70.3	54.7	51	82	9.2	58.4	7	Paisley	7.7	15.4	Pre-wet
20	Ayr 6	A78 Hunterston ore terminal roundabout to Bankfoot r/about	40	45	46.5	23.8	47	60	54.4	15.9	7	Paisley	3.3	6.6	Pre-wet
21	Dumfries 1	Dumfries A701 roundabout to Beattock	3.6	7	38.6	32.2	51	45	33.6	42.5	7	Polmadie	4.5	9.0	Pre-wet

Route	Depot	Description	Depot to Route (km)	Time to Route (mins)	Total Route Length (km)	De-icing Length (km)	Average Speed (kph)	Route Time (mins)	Route to Depot (km)	Route Efficiency	Average Width of Route (m)	Alternative Access	Route Tonnage at 20 g/sq m (tonne)	Route Tonnage at 40 g/sq m pre-wet (tonne)	Treatment Type
22	Dumfries 2	A75 Glasgow Rd roundabout to Gretna	6.3	10	63.3	50	38	99	1.9	69.9	7.5	Polmadie	7.5	15.0	Pre-wet
23	Dumfries 3	A76 Glasgow Rd roundabout - Mennock	6.3	10	50.7	44.3	52	58	40.3	45.5	7.5	Ayr	6.6	13.2	Pre-wet
24	Castle Douglas 1	A75 Creetown East - Hightae roundabout, start of Castle douglas bypass	38.3	50	37.7	33.7	54	42	3.5	42.4	8	Stranraer	5.4	10.8	Pre-wet
25	Castle Douglas 2	A75 Hightae roundabout, start of Castle douglas bypass - Glasgow Rd roundabout	3.5	10	47.4	41.6	50	57	21.2	57.7	8	Dumfries	6.7	13.4	Pre-wet
26	Stranraer 1	A77 Stranraer - Girvan	1.4	5	62.4	55.9	43	87	48	50.0	7	Ayr	7.8	15.6	Pre-wet
27	Stranraer 2	A75 Stranraer - Creetown East	1.4	5	60.2	50.6	36	100	49.4	45.6	8	Castle Douglas	8.1	16.2	Pre-wet
	CSD 2 Routes														
28	Crawford 1	M74 jct 12 to jct 15 HS and lane 1	19.2	15	84.4	44.8	69.7	72.6	18.7	36.6	6.9	Lockerbie	6.19	8.66	Pre-wet
29	Crawford 2	M74 jct 12 to jct 14 lane 2 & 3. M74 N/B jct 14 to jct 12 HS and lane 1	19.8	15	40	36.2	49.7	48.3	19.8	45.5	7.4	Lockerbie	5.38	7.53	Pre-wet
30	Crawford 3	M74 jct 14 to jct 15 lane 2	3	4	86.8	65.3	63.5	82	14.9	62.5	7	Lockerbie	9.09	12.73	Pre-wet

Route	Depot	Description	Depot to Route (km)	Time to Route (mins)	Total Route Length (km)	De-icing Length (km)	Average Speed (kph)	Route Time (mins)	Route to Depot (km)	Route Efficiency	Average Width of Route (m)	Alternative Access	Route Tonnage at 20 g/sq m (tonne)	Route Tonnage at 40 g/sq m pre-wet (tonne)	Treatment Type
		& 3. M74 Jct 15 to jct 17 HS and lane 1. M74 N/B jct 15 to 14 HS and lane 1													
31	Crawford 4	M74 jct 16 to jct 14 HS & lane 1. M74 Jct 14to jct 12 Lane 2 & 3	30.7	26.5	92.3	52.2	65.0	85.1	18.7	36.8	7.3	Lockerbie	7.64	10.70	Pre-wet
32	Lockerbie 1	M74 jct 15 to jct 17 lane 2 & 3. M74 Jct 17 to M6 HS and lane 1.	37.7	32.3	82.9	58.5	63.5	85.1	4.2	46.9	7.4	Crawford	8.69	12.17	Pre-wet
33	Lockerbie 2	M6 to M74 jct 22 lane 2 & 3. M74 jct 22 to jct 17 HS & lane 1. S/B M74 Jct 17 to M6 lane 2 & 3.	14	10.5	93.8	62.5	52.5	107.2	1.6	57.1	7.3	Crawford	9.15	12.81	Pre-wet
34	Lockerbie 3	M74 N/B jct 21 to jct 15 lane 2 & 3	7.7	7	54.7	45.9	60.0	54.7	7.9	65.3	7.9	Crawford	7.26	10.16	Pre-wet
Footway routes															
1	Polmadie	East Kilbride Footways	22.1	30	21.7	11.7	14	90	10	21.7	2	Ayr	468.0		Brine spray
2	Ayr 1	Minishant, Maybole and Kirkoswald	14	18	23	10	12	112	26.4	15.1	2	Stranraer	400.0		Brine spray
3	Ayr 2	Girvan	38.6	40	8.3	8.3	6	90	38.7	9.7	2	Stranraer	332.0		Brine spray
4	Ayr 3	Fairlie, Seamill, Kilwinning, Beith	44.1	50	50.6	15	28	109	45.8	10.1	2	Erskine	600.0		Brine spray
5	Ayr 4	Mauchline, New	15.7	20	44.2	9.8	24	109	38.2	10.1	2	Dumfries	392.0		Brine spray

Route	Depot	Description	Depot to Route (km)	Time to Route (mins)	Total Route Length (km)	De-icing Length (km)	Average Speed (kph)	Route Time (mins)	Route to Depot (km)	Route Efficiency	Average Width of Route (m)	Alternative Access	Route Tonnage at 20 g/sq m (tonne)	Route Tonnage at 40 g/sq m pre-wet (tonne)	Treatment Type
		Cumnock, Kirkconnel													
6	Stranraer 1	Lendalfoot, Ballantrae	39.4	45	11.9	3.4	11	68	30	4.2	2	Ayr	136.0		Brine spray
7	Stranraer 2	Cairnryan, A75 Stranraer	10	15	14.1	4.5	15	55	1.5	17.6	2	Ayr	180.0		Brine spray
8	Paisley 1	Port Glasgow, Greenock	19.3	35	21	21	11	110	14.9	38.0	2	Polmadie	840.0		Brine spray
9	Paisley 2	Dumbarton	6.2	35	8.8	8.8	7	80	7.1	39.8	2	Polmadie	352.0		Brine spray
10	Paisley 3	Wemyss Bay, Skelmorlie, Largs	32.3	45	17.8	12.3	10	106	44.2	13.0	2	Ayr	492.0		Brine spray
11	Dumfries 1	Sanquhar, Carronbridge, Thornhill, Closeburn, Lincluden	44.7	50	46.95	7.65	24	118	7.5	7.7	2	Ayr	306.0		Brine spray
12	Dumfries 2	Springholm, Crocketford, Locharbriggs	25.1	35	29.7	9.1	18	100	6.6	14.8	2	Ayr	364.0		Brine spray

Route efficiency is calculated as per the example below:

Scottish Trunk Road Network Management Contract
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Route Efficiency Calculation

Route efficiency in tables in attachments 6.1.2 and 6.1.3 is calculated as per the below:

- **A =** Distance from *1. depot* to *2. start of route* (km) - (i.e dead time)

- **B =** Distance from *2. start of route* to *3. end of route* (km) – (i.e including any dead time from start to end of route for junctions etc hence optimisation)

- **C =** Total Distance <u>treated</u> from *2. start of route* to *3. end of route* (km)

- **D =** Distance from *3. end of route* to *1. depot*

- **C = 100 / (A + B + D) x C**

Example:

Route	Depot	Description	Depot to Route (km) A	Time to Route (mins)	Total route length (km) B	Total route length treated (km) C	Average Speed (km/hr)	Route Time (mins)	Route to Depot (km) D	Route efficiency 100 / (A + B + D) x C	Average Width of Route (m)	Alter-native Access	Route Tonnage at 20 g/sq m (tonne)	Route Tonnage at 40 g/sq m pre-wet (tonne)	Treatment Type
1-20	Hawick (SBC)	A7 Hawick - Selkirk, Hawick A7 Hawick - National Boundary	1.8	2.5	67.5	60	48	110	62.6	**45%**	7.7	Eaglesfield	7.28		Pre-wet

Table 6.1.4 Ploughing Routes Determined by Operating Company

Route	Depot	Description	Depot to Route (km)	Time to Route (mins)	Average Speed (km/hr)	Route time (mins)	Route to Depot (km)	Alternative Access	Average Width Route
C1	Ayr	Plough S/B c/way - A76 Bellfield to Crossroads - Plough overtaking lane S/B from Rbt - Plough S/B lane to Sanquhar S/B - U Turn - Plough A76 N/B to Garleffan Rbt, New Cumnock - Plough overtaking lane from Garleffan Rbt - Plough N/B lane to Skerrington Rbt - Circle Rbt - Plough S/B to Garleffan Rbt - Plough S/B lane from Garleffan Rbt to Crossroads Rbt - Circle Rbt - Plough S/B lane to Crosshands Rbt - U turn - Plough N/B from Crossroads to Bellfield Rbt	12	15	38	2h 38 min	12	Dumfries	8.3
C2	Ayr	Ayr depot, turn left, echelon plough A77 N/b to Dutch House, U turn, echelon plough A77 S/B, Dutch House to Whitletts rdbt. U turn, echelon plough A77 N/b to Sandyford rdbt. U turn, echelon plough A77 S/B from Whitletts rdbt to Holmston to Bankfield. Route vehicle to continue on route to Girvan; Patrol vehicle to plough A77 N/b Bankfield to Whitletts (times two passes). If necessary; Patrol vehicle to reload at depot and travel to Turnberry climbing lane to assist Route vehicle. Route vehicle to plough A77 S/B to Girvan; U turn at Shallochmill rdbt, then plough A77 N/b to Bankfield.	1	5	38	2hr 38 min	8	Stranraer	7.8
C3	Ayr	Start route A77 Dutch House N/b. Echelon plough A77 N/b to Connect boundary at Meiklewood. U turn; echelon plough A77 S/B Meiklewood to Dutch House. Route vehicle to travel A77 N/b and clear slip roads in turn; U turn at Meiklewood; clear A77 S/B slip roads in turn. Patrol vehicle available to clear laybys, bus stops then assist other routes as required.	1	8	37	1hr 49 min	5	Polmadie / Paisley	7.5
C4	Ayr	Start route A77 Dutch House. Echelon plough A78 N/b to Montfode; U turn, echelon plough A78 S/B to Dutch House. Route vehicle to travel to Montfode, plough A78 N/b to Hunterston rdbt; U turn, plough A78 S/B to Montfode. Reserve vehicle to travel A78 N/b and clear slip roads, laybys and bus stops in turn; also 3 lane section; U-turn Pennyburn rdbt; travel A78 S/B; clear slip roads, laybys and bus stops in turn and also 3 lane section.	5	8	40	2hr 20 min	38	Polmadie / Paisley	8.8
S1	Stranraer	Start A75 at A751 jct. Plough A75 e/b from A751 junction to East end of Cairntop to Barlae, U turn and return A75 w/b to A751. Route vehicle to travel A751 n/b, A77 S/B, A75 e/b, Patrol vehicle to travel A75 w/b, A77 n/b, A751 S/B. Both vehicles to travel to A77 Innermessan, plough n/b to Shallochpark rdbt, echelon plough wide sections and overtaking lanes as encountered. Plough A77 S/B Shallochpark rdbt to Innermessan, echelon	3	5	37	4hr 30 min	6	Ayr, Castle Douglas	8.6

Route	Depot	Description	Depot to Route (km)	Time to Route (mins)	Average Speed (km/hr)	Route time (mins)	Route to Depot (km)	Alternative Access	Average Width Route
		plough wide sections and overtaking lanes as encountered.							
CD1	Castle Douglas	Start route A75 W/b from B794 Haugh of Urr jct. Echelon plough Ramhill climbing lane. Both vehicles to plough A75 W/b; echelon plough wide sections and overtaking lanes as encountered; to start Cairntop - Barlae dual c/way; U turn. Plough A75 E/b Barlae to Castle Douglas, echelon plough wide sections and overtaking lanes as encountered. Reserve vehicle to clear laybys and bus stops.	6	7	40	3hrs	2	Stranraer, Dumfries	8.3
CD2	Castle Douglas	Plough E/B c/way - A75 E/B Castle Douglas to The Glen - Plough O/S lane The Glen - Plough E/B from The Glen to Glasgow Rd Rbt - Circle Glasgow Rd Rbt - Plough A75 W/B to the Glen - Plough O/S lane The Glen - Turn Shawhead Jct - Plough N/S lane The Glen - Circle Cargenbridge Rbt - Plough A75 West to the Glen - Plough N/S lane The Glen - Plough A75 The Glen to Castle Douglas	0.25	1 min	37	2h 03 min	0.25	Dumfries, Stranraer,	7.3
D1	Dumfries	Plough A701 S/B from Beattock east rdbt to Dalscone rdbt. Reload at Wayside depot, plough A75 e/b; lane 2 to c/r at Gretna dual, U turn at slip road, plough A75 w/b; lane 2 to c/r - U turn where possible; plough A75 e/b; lane 1 of Gretna dual to verge, U turn at slip road, plough A75 w/b; lane 1 to verge. Plough A75 w/b to west end Collin bypass.	34	45	38	3hr : 14min		Polmadie	8.3
D2	Dumfries	Plough A75 E/B c/way from Annan Road rdbt - Lane 2 to c/r, East end Collin Bypass. U turn, Lane 2 to c/r, Collin Bypass w/b, A75 w/b to A75 Cuckoo Bridge. Plough A76 n/b to Dalpeddar o/t lane, plough lane 2, U turn B797 jct, plough lane 2 S/B, u turn at Glenairlie jct, plough lane 1 n/b to Crawick Ind Est. Plough S/B from Crawick Ind Est to A75 Cuckoo Bridge, inc all roundabouts. Plough lane 2 to c/r, Cuckoo Bridge to Macdonalds n/b and S/B; plough A75 e/b Cuckoo Bridge to Dalscone rdbt. Travel to Wayside depot; reload. Plough A701 northbound from Dalscone rdbt to Beattock east rdbt.	0.5	1	37	4hr 22 min	34	Ayr, Castle Douglas,	7.3
E1	Paisley.	Start A8 Woodhall rdbt; echelon plough A8 w/b to Bullring. Plough A78 S/B to Hunterston rdbt. Echelon plough IBM dual c/way section. Route vehicle to clear main c/way S/B; Patrol vehicle to clear bus stops and laybys. U turn Hunterston rdbt; Route vehicle to clear main c/way N/b; Patrol vehicle to clear bus stops and laybys. Echelon plough IBM dual c/way section. Echelon plough A8 E/b Bullring to Woodhall.	9	12	35	2hr 19 min	9	Ayr	8.5
E2	Paisley.	Start A737 Elliston, echelon plough Lanes 1 & 2 A737 N/b to M8, continue on M8 E/b, Lane 1 & HS; take	15	20	35	2hr 51 min	15	Ayr	8

Route	Depot	Description	Depot to Route (km)	Time to Route (mins)	Average Speed (km/hr)	Route time (mins)	Route to Depot (km)	Alternative Access	Average Width Route
		M74, Polmadie depot - reload; M74 W/b, join M8; M8 W/b to Jct 29; take A737; echelon plough Lanes 1 & 2 A737 S/B. Route vehicle to continue on A737, TM plough to clear laybys, bus stops. Both vehicles to meet to echelon plough A738 to Pennyburn rdbt. U turn; echelon plough A738 N/b - Pennyburn rdbt to Whitehirst Park. Continue to clear A737 N/b to Elliston. Route vehicle to clear main c/way, TM plough to clear laybys and bus stops.							
E3	Paisley.	Echelon plough route slip roads M898, A898, A82, A737 and M8 jct 24 - 30 slips.	2	5	30	2hr 43 min	12	Polmadie	8.5
E4	Paisley.	Start M8 Jct 30 W/b off slip, echelon plough slip and M898, A898 over Erskine Bridge; continue on A82 N/b to Stoneymollan rdbt; U turn; echelon plough A82 S/B to Erskine Bridge (catch Renton slip roads). Echelon plough M898 to Jct 30 W/b on slip; travel to M8 Jct 31, echelon plough W/b off and on slips; U turn at Langbank; travel to M8 Jct 31, echelon plough E/b off and on slips; travel to Jct 30 E/b off slip; echelon plough; U turn at Spectacles rdbt; travel to Jct 30 E/b on slip - echelon plough. Route vehicle (as necessary) to treat White Cart Viaduct E/b, U turn at Jct 27, treat White Cart Viaduct W/b, treat St James W/b; U turn A737 Linwood junction; treat St James E/b. Patrol vehicle to clear Hard Shoulders, M8 jct 29 - jct 31.	13	15	37	2hr 14 min	13	Polmadie	8.2
E5	Paisley.	Start M8 Jct 29 W/b; echelon plough Lane 1 & 2 to HS, M8 W/b through Jct 31 and on to Woodhall rdbt; U turn Woodhall rdbt; echelon plough A8 E/b to M8, echelon plough Lane 1 & 2 to HS M8 E/b Jct 31 to Jct 29. Travel M8 to M77 Jct 2 S/B off slip. Echelon plough M77 slip roads as per route.	13	20	36	2hr 03 min	10	Polmadie	8.5
P1	Polmadie.	Echelon plough route, start Kingston Bridge complex; M8 Jct 20 - 28 E/b and W/b; M77 Jct 1 - 5 N/b and S/B, M74 jct 1 - 2. Patrol vehicle to clear Hard Shoulders M77 Jct 1 - 5 N/b and S/B.	12	15	37	2hr 15 min	10	Polmadie	8.5
P2	Polmadie.	Phase 1 - Link with T2 vehicles to clear M74 Jct 1 - Jct 3 S/B; Lanes 1 - 3 and HS to HS. Phase 2 - T1 vehicles continue to clear Lanes 1, 2 and HS, Jct 6 - 12 S/B; travel to Jct 13, U turn, echelon plough M74 N/b Jct 12 - Jct 6 Lanes 1, 2 and HS. Phase 3 - link with T2 vehicles to clear M74 N/b, Jct 3 - Jct 1, Lanes 1 - 3 and HS to HS.	18	20	42	2hr 47min	18	Polmadie	9
P3	Polmadie.	Phase 1 - Link with T1 vehicles to clear M74 Jct 1 - Jct 3 S/B; Lanes 1 - 3 and HS to HS. Phase 2 - T2 vehicles continue on M74 slips as per T2 route. Clear	18	20	45	2hr 47min	18	Polmadie	9

Route	Depot	Description	Depot to Route (km)	Time to Route (mins)	Average Speed (km/hr)	Route time (mins)	Route to Depot (km)	Alternative Access	Average Width Route
		Jct 10 S/B, then Jct 11 S/B, U turn, Jct 11 N/b. Phase 3 - link with T1 vehicles to clear M74 N/b, Jct 3 - Jct 1, Lanes 1 - 3 and HS to HS.							
P4	Polmadie.	Echelon plough jct 1 - 3 M74 slip roads, A725 / A726 main c/way Whistleberry - East Mains rdbt; N/b and S/B.	10	12	40	2hr 15 min	20	Polmadie	7.5
P5	Polmadie.	Phase 1 - Echelon plough M8 E/b Jct 19 to Jct 10, Lanes 1 and 2 to HS. U turn A752 jct, echelon plough M8 W/b Jct 10 to Jct 19, Lanes 1 and 2 to HS. U turn at Jct 19; Phase 2 - Both vehicles to travel, jct 19 - jct 15 E/b on slip, echelon plough slip lanes to HS and continue on lane gains to jct 13 and take M80; echelon plough M80 N/b lanes 1 & 2 to HS, u turn at Jct3; echelon plough M80 S/B lanes 1 & 2 to HS; merge M8, echelon plough M8 lanes 1 & 2 to HS, echelon plough Jct 15 W/b off slips. Travel to jct 19 E/b on slip. Phase 3 - Route vehicle to clear Lane 3 to C/R; Reserve vehicle to clear HS; jct 19 - jct 8 E/b. U turn A752 jct. Route vehicle to clear Lane 3 to C/R; Reserve vehicle to clear HS; jct 8 - jct 19 W/b.	16	20	40	2hr 13 min	2	Polmadie	8.25
P6	Polmadie.	Start M74 jct 4;. Phase 1 - echelon plough slip roads on M74 Extension; jct 3 to jct 1 W/b and E/b.	7	10	35	2hr 3 min	16	Polmadie	8.4
P7	Polmadie.	Echelon plough M8 jct 10 - 18 and M80 jct 1 - 2 slip roads. Phase 2 - Route vehicle to clear M80 HS N/b and S/B	10	12	30	2hr 16 min	10	Polmadie	8.25

Table 6.1.5 Operational Salt Stock Levels

De-icing Material (i.e. Dry salt / ABP)	Location	Type (barn/open)	Min (tonnes) 1st Oct
Dry Salt	Polmadie	Barn	10,000 salt
Dry Salt	Paisley	Barn	4,000 salt
Dry Salt	Ayr	Barn	4,000 salt
Dry Salt	Wayside Dumfries	Barn	700 salt
Dry Salt	Castle Douglas	Barn	600 salt
Dry Salt	Stranraer	Barn	750 salt
Dry Salt	Stonehouse (Larkhall)	Barn	4,950 salt
Dry Salt	Crawford (CSD 2)	Barn	2,000 salt
Dry Salt	Lockerbie (CSD 2)	Barn	2,000 salt
Total			29,000

Brine Production & Storage

Location	Type (Saturator / Storage Only)	Capacity (L)	Min (L)
Polmadie	Saturator and storage	20,000 saturator and 45,000 storage	65,000
Paisley	Saturator and storage	20,000 saturator + 25,000 storage	45,000
Ayr	Saturator and storage	20,000 saturator + 35,000 storage	55,000
Dumfries	Saturator and storage	20,000 + 5,000	25,000
Castle Douglas	Saturator and storage	20,000	16,000
Stranraer	Saturator and storage	10,000 + 15,000	25,000
Crawford (CSD 2)	Saturator and storage	10,000 + 15,000	25,000
Lockerbie (CSD 2)	Saturator and storage	10,000 + 15,000	25,000

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Table 6.1.6 - Winter Service Plant for all Winter Service Patrols

Table deleted – information covered in following tables.

Table 6.1.7 - Front line Winter Service Plant permanently available and located in the Unit for Winter Service for carriageways

Type of Winter Service Plant & Reg. No.	Depot Location	Vehicle Capacity	Number of Vehicles	Plant Use* (i), (ii)
32 tonne 8x4 spreader TBC	Polmadie	12m^3	9	i, ii
32 tonne 8x4 spreader TBC	Paisley	12m^3	5	i, ii
32 tonne 8x4 spreader TBC	Ayr	12m^3	6	i, ii
32 tonne 8x4 spreader TBC	Wayside Dumfries	12m^3	3	i, ii
32 tonne 8x4 spreader TBC	Castle Douglas	12m^3	2	i, ii
32 tonne 8x4 spreader TBC	Stranraer	12m^3	2	i, ii
32 tonne 8x4 spreader TBC	Crawford (CSD 2)	12m^3	4	i, ii
32 tonne 8x4 spreader TBC	Lockerbie (CSD 2)	12m^3	3	i, ii
26 tonne 6x4 spreader TBC	Polmadie	9m^3	3	ii
16 tonne 4x4 spreader TBC	Polmadie	6m^3	1	ii
26 tonne 6x4 spreader TBC	Paisley	9m^3	3	ii
16 tonne 4x4 spreader TBC	Paisley	6m^3	1	ii
26 tonne 6x4 spreader TBC	Ayr	9m^3	2	ii
16 tonne 4x4 spreader TBC	Ayr	6m^3	1	ii
26 tonne 6x4 spreader TBC	Wayside Dumfries	9m^3	1	ii
26 tonne 6x4 spreader TBC	Castle Douglas	9m^3	1	ii
26 tonne 6x4 spreader TBC	Stranraer	9m^3	1	ii
26 tonne 6x4 spreader TBC	Castle Douglas	9m^3	1	ii
26 tonne 6x4 spreader TBC	Stranraer	9m^3	1	ii
16 tonne 4x4 spreader TBC	Stranraer	6m^3	1	ii
16 tonne 4x4 spreader TBC	Crawford (CSD 2)	6m^3	2	ii
16 tonne 4x4 spreader TBC	Lockerbie (CSD 2)	6m^3	1	ii

* Table 6.1.7 Key:

(i) precautionary treatment and clearance of snow with a depth up to 100 millimetres.

(ii) Winter Service Patrols.

Table 6.1.8 - Front line Winter Service Plant permanently available and located in the Unit for the Winter Service for footways footbridges and cycling facilities

Type of Winter Service Plant & Reg. No.	Depot Location	Vehicle Capacity	Number of Vehicles	Plant Use* (i), (ii), (iii)
Euromec 2400 or similar with pickup mounted bowser	Polmadie	200 litres	4	(i)
Kubota mini tractor or similar with pickup mounted bowser	Ayr	200 litres	4	(i)
Euromec 2400 or similar with pickup mounted bowser	Wayside Dumfries	200 litres	2	(i)
Euromec 2400 or similar with pickup mounted bowser	Stranraer	200 litres	2	(i)

* Table 6.1.8 Key:

(i) precautionary treatment and clearance of snow with a depth up to 100 millimetres.

(ii) Winter Service Patrols.

Table 6.1.9 - Reserve Winter Service Plant permanently available and located in the Unit for Winter Service for carriageways footways footbridges and cycling facilities

Type of Winter Service Plant & Reg. No.	Depot Location	Vehicle Capacity	Number of Vehicles	Plant Use* (i), (ii)
32 tonne 8x4 spreader TBC	Polmadie	12m^3	3	(i), (ii)
32 tonne 8x4 spreader TBC	Paisley	12m^3	2	(i), (ii)
32 tonne 8x4 spreader TBC	Ayr	12m^3	2	(i), (ii)
32 tonne 8x4 spreader TBC	Wayside Dumfries	12m^3	1	(i), (ii)
32 tonne 8x4 spreader TBC	Stranraer	12m^3	1	(i), (ii)
32 tonne 8x4 spreader TBC	Crawford (CSD 2)	12m^3	1	(i), (ii)
32 tonne 8x4 spreader TBC	Lockerbie (CSD 2)	12m^3	1	(i), (ii)
26 tonne 6x4 spreader TBC	Polmadie	9m^3	1	(i), (ii)
26 tonne 6x4 spreader TBC	Paisley	9m^3	2	(i), (ii)
26 tonne 6x4 spreader TBC	Ayr	9m^3	1	(i), (ii)
26 tonne 6x4 spreader TBC	Castle Douglas	9m^3	1	(i), (ii)
16 tonne 4x4 spreader TBC	Crawford (CSD 2)	6m^3	1	(i), (ii)
Euromec 2400 or similar with pickup mounted bowser	Polmadie	200 litres	1	(i)
Euromec 2400 or similar with pickup mounted bowser	Ayr	200 litres	1	(i)
Euromec 2400 or similar with pickup mounted bowser	Wayside Dumfries	200 litres	1	(i)
Euromec 2400 or similar with pickup mounted bowser	Stranraer	200 litres	1	(i)

* Table 6.1.9 Key:

(i) precautionary treatment and clearance of snow with a depth up to 100 millimetres.

(ii) Winter Service Patrols.

Table 6.1.10 - Additional Winter Service Plant

Type of Winter Service Plant & Reg. No.	Depot Location or Third Party Operator and Location	Number of Vehicles	Mobilisation Time in Hours
JCB fastrac	**REDACTED**	3	2 hours
JCB tractor	**REDACTED**	3	2 hours
32 tonne plus plough	**REDACTED**	2	2 hours
32 tonne plus plough	**REDACTED**	2	4 hours

Table 6.1.11 – The Operating Company's Compounds, Depots and Facilities

Compound, Depot or Facility Name	Owner	Postal Address	Purpose	Access Arrangements	Contract Details	Facilities
Polmadie Office	**REDACTED**	**REDACTED**	Main Office	Unlimited	**REDACTED**	Main Office and Operational Depot
Paisley Depot	**REDACTED**	**REDACTED**	Primary Depot	Unlimited	**REDACTED**	Operational Depot and Offices
Ayr Depot	**REDACTED**	**REDACTED**	Primary Depot	Unlimited	**REDACTED**	Operational Depot and Offices
Wayside Depot	**REDACTED**	**REDACTED**	Primary Depot	Unlimited	**REDACTED**	Operational Depot and Offices
Castle Douglas Depot	**REDACTED**	**REDACTED**	Primary Depot	Unlimited	**REDACTED**	Operational Depot
Stranraer Depot	**REDACTED**	**REDACTED**	Primary Depot	Unlimited	**REDACTED**	Operational Depot and Offices
Lockerbie (CSD 2)	**REDACTED**	**REDACTED**	Primary Depot (CSD 2)	Unlimited	**REDACTED**	Operational Depot and Offices

Attachment 6.2 Winter Service Plan

Table 6.2.1 Winter Service Plan - Contents (See 6.1 for appendices)

Item	Contents
1	**Management Arrangements**
	the Winter Service Plan shall provide the following:
1.1	**Winter Service Manager**
1.1.1	Name,
1.1.2	Qualifications,
1.1.3	Experience,
1.1.4	Responsibilities.
1.2	**Winter Service Duty Officers**
1.2.1	Names,
1.2.2	Qualifications,
1.2.3	Experience,
1.2.4	Responsibilities.
1.3	**Monitoring Arrangements**
1.3.1	Monitoring arrangements during normal working hours,
1.3.2	Monitoring arrangements outwith normal working hours.
1.4	**Personnel Resources**
1.4.1	Names of Contract Personnel and labour resources.

1.4.2	Availability rosters including names, addresses and telephone numbers of the Contract Personnel listed.
1.5	**Call out arrangements**
1.5.1	Call out arrangements during normal working hours,
1.5.2	Call out arrangements outwith normal working hours,
1.5.3	Contact arrangements during normal working hours,
1.5.4	Contact arrangements outwith normal working hours,
1.5.5	Mobilisation times.
1.6	**Communications Equipment**
1.7	**Training for Managers and Other Staff**
1.7.1	Details of previous training,
1.7.2	Details of proposed training.
2	**Weather Forecasting**
2.1	**Purpose**
2.2	**Methodology**
2.3	**Weather forecasting service**
2.3.1	Climatic domains,
2.3.2	Weather radar,
2.3.3	Weather Stations, forecast sites and camera sites,
2.3.4	Thermal mapping,
2.3.5	Location plans.

2.4	**Computer Systems**
3	**Monitoring Arrangements for Areas Requiring Special Attention**
4	**Decision Making**
4.1	**Role of the Winter Service Manager**
4.2	**Role of the Winter Service Duty Officer**
4.2.1	Procedures for Winter Service Patrol mobilisation.
4.2.2	Proposals for precautionary and additional de-icing treatments when low confidence forecasts are issued for variable road and weather conditions.
4.2.3	Proposals for monitoring the effectiveness of de-icing materials.
4.2.4	Road closure and snow gate operational procedures.
4.2.5	Proposals for dealing with areas requiring special attention.
4.2.6	Proposals for using alternative de-icers in extreme temperatures.
5	**Liaison & Communication**
5.1.1.	**Liaison and communication with:**
	(i) the Director,
	(ii) the Police Scotland,
	(iii) the Traffic Scotland Operations and Infrastructure Services Contractor,
	(iv) adjacent road and highway authorities,
	(iv) Network Rail,
	(vi) Other Operational Partners.
6	**Mutual Aid Arrangements**
6.1	**Mutual Aid**

6.1.1	A statement explaining what Mutual Aid arrangements are in place, including contact details.
7	**Winter Service Patrols**
7.1	**Winter Service Plant and Reporting**
7.1.1	Winter Service Plant provided by the Operating Company for the Winter Service Patrols shall be as referred to in Schedule 2 Scope, Appendix 6 Winter Service Attachment 6.1 Appendices for Winter Service Plan.
7.1.2	A Winter Service Patrol Report shall be provided by the Operating Company in the format referred to in Schedule 2 Scope, Appendix 6 Winter Service Attachment 6.1 Appendices for Winter Service Plan.
8	**Treatment Routes**
8.1.1	In accordance with Schedule 2 Scope, Appendix 6 Winter Service Attachment 6.1 Appendices for Winter Service Plan. (i) precautionary treatment routes, including sections shared with an adjacent road authority, (ii) contingency plans for alternative access to precautionary treatment routes where normal access is prevented due to weather related or other Incidents, (iii) locations of de-icing material loading points, and (iv) cycling facilities in urban areas
8.1.2	The Operating Company shall provide details of cycling facilities in urban areas in Schedule 2 Scope, Appendix 6 Winter Service Attachments 6.1 Appendices for Winter Service Plan.
9	**Snow and Ice Clearance**
9.1	**Snow Clearing**
9.1.1	Arrangements and resources for managing snowfall. The Winter Service Plan shall demonstrate how all carriageways shall be maintained free from snow or ice as far as

	is reasonably practicable and in accordance with Schedule 2 Scope, Appendix 6 Winter Service Attachments 6.12 Snow Clearance.
9.1.2	Road closure procedure including use of snow gates.
9.1.3	Prolonged snowfall strategy, including use of additional Winter Service Plant and operative resources.
9.1.4	Snow and ice clearance in accordance with Schedule 2 Scope, Appendix 6 Winter Service Attachment 6.11 De-Icing Material Spread Rates.
9.1.5	Arrangements for safe clearance of snow or ice from wide single carriageways.
9.1.6	Treatment strategy for bridge service roads, footways (including those on bridge decks), footpaths and cycling facilities including location of salt bins where applicable in accordance with Schedule 2 Scope, Appendix 6 Winter Service Attachments 6.10 - Categories A, B, C and D Footways, Footbridges & Cycle Facilities.
9.2	**Plans showing the location of the footways, footbridges and cycling facilities in Categories A, B, C and D.**
10	**Freezing Rain/Rain Falling On Extremely Cold Surfaces**
10.1	Advance Planning
11.1.1	Advanced planning for freezing rain/rain falling on extremely cold surfaces including as a minimum: (i) arrangements for liaison with Police Scotland, Traffic Scotland Operations and Infrastructure Services Contractor and other interested parties, and (ii) risk assessments .
10.2	**Operational Arrangements**
10.2.1	Operational arrangements for managing freezing rain/rain falling on extremely cold surfaces including as a minimum: (i) details of treatment regimes in advance of, during and following a freezing rain event, and (ii) arrangements for monitoring.

10.3	**Hazard Mitigation**
10.3.1	Hazard mitigation for freezing rain/rain falling on extremely cold surfaces including as a minimum: (i) arrangements for informing road users including use of Variable Message Signs, and (ii) road closure procedure, rolling blocks and convoy arrangements.
11	**De-Icing Materials**
11.1	**Details**
11.1.1	For each type of de-icing material, including alternatives: (i) detailed specification of material, (ii) storage conditions, system types and capacities, (iii) details on testing methods, including their type and frequency, (iv) state suppliers, including any secondary suppliers, (v) state any importers used to meet supply demands, (vi) stock levels (total and split by location), and (vii) details of re-stocking, including procurement mechanism and details of stock level monitoring.
10.1.2	Details of de-icing materials stocks shall be provided by the Operating Company in Schedule 2 Scope, Appendix 6 Winter Service Attachments 6.1 Appendices for Winter Service Plan and shall take account of the minimum stock levels to be maintained as referred to in the Appendix.
12	**Strategic Salt Stocks**
12.1	**Details**
12.1.1	Strategic salt stocks including as a minimum: (i) suppliers including locations, initial delivery points and haulage arrangements, (ii) third parties, liaison arrangements, haulage, delivery and 24 hour access arrangements, and

	(iii) administration of strategic salt stocks
13	**Winter Service Plant**
13.1.1	In accordance with Schedule 2 Scope, Appendix 6 Winter Service Attachment 6.1 Appendices for Winter Service Plan:
12.1.2	(i) the Operating Company's front line Winter Service Plant and reserve Winter Service Plant available on the Unit for the Winter Service,
12.1.3	(ii) the Operating Company's additional Winter Service Plant available through contingency arrangements and arrangements for the mobilisation of such additional Winter Service Plant for the Winter Service, and
	(iii) loading Winter Service Plant available on the Unit for loading such front line, reserve and additional Winter Service Plant .
13.2	**Calibration of Winter Service Plant**
13.2.1	Calibration arrangements and procedures for front line and reserve Winter Service Plant, in accordance with Schedule 2 Scope, Section 6 Network Operations - Winter Service, 6.5.7, 6.5.8 and 6.5.9.
13.2.2	The Winter Service Plan will describe how the requirements of this Part shall be met and where and how the calibration certificates will be held.
14	**Compounds, Depots and Facilities**
14.1	In Schedule 3 Contract Management, Appendix 3 Offices, depots & other infrastructure incl. plant, a schedule of compounds, depots and facilities covering the network of the Unit.
15	**Maps, Drawings and Graphical Information**
15.1	**Maps**
15.1.1	Provide scale maps for the following:
	(i) precautionary treatment routes for carriageways, including on/off slips and depots,
	(ii) precautionary treatment routes for footways, footbridges and cycling

	facilities, (iii) reactive treatment routes for footways, footbridges and cycling facilities, (iv) Winter Service Patrol routes, (v) ploughing routes for carriageways, including on/off slips and depots, (vi) Weather stations including sensor types and where these sites are equipped with weather cameras, (map to differentiate between single and bidirectional cameras), (vii) snow gates, (viii) snow fences, (ix) shelter belts, (x) snow poles, (xi) snow or ice and hidden message signs, (xii) salt bins, (xiii) vertical concrete barriers, (xiv) other facilities, and (xv) where route based forecasting is not used, climatic domains and the sensors used to generate domain forecasts.
16	**Compiling and Maintaining Records**
17	**Snow Poles**
17.1	**Maintenance, replacement of damaged or missing snow poles, refurbishment and reserve stocks**
18	**Snow Gates**
18.1	**Maintenance, operation and liaison.**
19	**Variable Message Snow and Ice and Hidden Message Signs**

19.1	**Maintenance and operation of message signs and associated liaison arrangements.**
19.1.1	A schedule that specifies the type and location of the following signs in the Unit: (i) fixed message signs, (ii) variable message signs, (iii) snow hidden message signs, (iv) ice hidden message signs, and (v) road closure hidden message signs
19	**Salt Bins**
19.1	**Stock level monitoring and replenishment procedures.**
20	**Salt Measurement Apparatus**
20.1	**Equipment and locations and recording methods.**

Attachment 6.3 – Route Efficiency Calculation

Operating Company:	**Reporting Month:**
1) Salt used during reporting period:	
2) Actual salt stocks held at the end of the reporting period:	
3) Salt orders placed and deliveries received during reporting period:	
4) Salt orders expected during next reporting period (include imports, dates deliveries expected & tonnage expected):	
5) Forecast usage during next reporting period	
6) Any other items to report (such as reduced treatment networks, any notable arrangements with local authorities, etc.)	

Attachment 6.4 - Winter Service Report

Table 6.4.1 Winter Service Report – Contents

Item	Contents
1	**The Winter Service report shall provide:**
1.1	An executive summary of the annual report.
1.2	An overview and review of the service provided.
1.3	A summary of key performance reports.
1.4	Information on significant events and related actions.
1.5	An assessment of the accuracy of weather forecasts provided.
1.6	An assessment of weather station and camera performance.
1.7	An analysis of the ability of the Management System to capture reported Non-Conformances.
1.8	Details of innovations and improvements implemented.
1.9	Recommendations for continuous improvement.
1.10	Details of actions taken during periods of low confidence forecasting for variable and marginal winter weather conditions.
1.11	Details of Winter Service Plant available, including reserve and additional Winter Service Plant.

Attachment 6.5 - Locations of Winter Service Infrastructure

Table 6.5.1 - Locations of Snow Fences, Snow Gates and Salt Bins

Route	Snow Fence (meters)	Snow Gates (Number)	Salt Bins (Number)
	None	None	
A75			2
A76			7
A701			1

Table 6.5.2 - Locations of Hidden Message Signs

Road Number	Location	Detailed Description
M74	Junctions 5 to 6 S/B	Hidden Message Sign 0.25 miles prior to Jct 6
M74	Junctions 8 to 9 S/B	Hidden Message Sign 0.5 miles prior to Jct 9
M74	Junctions 10 to 11 S/B	Hidden Message Sign 0.5 miles prior to Jct 11
A725	Crossbaskets	Ice Warning Signs
A701	St Annes	Ice Warning Signs

Table 6.5.3 - Locations of Weather Stations, Forecast Sites and Camera Sites (Single or Bi-Lateral)

Road Number	Location
A82	Alexandria Bypass (Dual Camera)
A898	Erskine Bridge
M8	Kinning Park
M8	Riddrie
M74	Rutherglen
A725	Crossbaskets
M8	Bishopton (Erskine) (Dual Camera)

A8	Port Glasgow (Dual Camera)
A78	Gourock (Dual Camera)
A78	Ardrossan
A737	Highfield (Dual Camera)
A737	Howwood
M77	Newton Mearns
A77	Kilmarnock
A77	Dutch House (Dual Camera)
A77	Cumnock
M74	Millbank (Dual Camera)
A75	Collin (Dual Camera)
A701	Southerly Ridge (Dual Camera)
A76	Closeburn (Single Camera)
A76	Kirkconnel
A75	Crocketford (Dual Camera)
A75	Knockbrex
A75	Drumflower (Dual Camera)
A77	Glen App
A77	Turnberry
A77	Crossragual (Dual Camera)
M74	Canderside
A75	Gretna (Dual Camera)
A78	Sharphill (Dual Camera)
M8	St James Interchange
A76	Blackwood Farm (Dual Camera)

Table 6.5.4 - Locations of Snow Poles

Route NONE					
Link	Section	Start Location	End Location	No.	Link

Table 6.5.5 - Locations of Vertical Concrete Barriers

M74 between Port Eglinton Viaduct and east of junction 2A (Fullerton Road) has Vertical Concrete Barrier.

Attachment 6.6 Winter Service Patrols

Table 6.6.1 – Category A and B Winter Service Patrol Routes

Route	Category
M74 from J 1 (Kingston) to J 12 (Millbank)	A
M77 from M8 (Plantation) to Malletsheugh	A
M8 from Junction 10 to A8 Langbank Roundabout	A
M898 and A898 Erskine Bridge	A
M898 /A82from Erskine Bridge to Stoneymollan Roundabout	A
M80 from M8 (Provan) to J 2 (Robroyston)	A
A8 from Greenock to Langbank Roundabout	A
A725/A726 Whistleberry Toll Roundabout to junction with West Mains Road Roundabout	A
A77 from Meiklewood at junction with B7038 to Stranraer at junction with A75	A
A77 between Girvan and Whitletts Roundabout	A
A78 from Dutch House Roundabout to Pennyburn Roundabout	A
A78 from Pennyburn Roundabout to Greenock Junction with A8	B
A76 Kilmarnock from junction with A77 to Dumfries at junction with A75	B
A75 Stranraer to Gretna at junction with A74(M)	B
A701 Dumfries to A74(M) Junction 15	B
A737 from M8 (St James Interchange) to Kilwinning at junction with A738	A

Notes:

1) Details of the Operating Company's Winter Service Patrol routes shall be as provided by the Operating Company in Schedule 2 Scope, Appendix 6 Winter Service Attachments 6.1 Appendices for Winter Service Plan.

2) Patrol reports shall be recorded in accordance with Schedule 2 Scope, Appendix 6 Winter Service Attachments 6.1 Appendices for Winter Service Plan.

Attachment 6.7 - Location of Known Vulnerable Locations

Table 6.7.1 - Frost Susceptible Areas

Road Number	Location
A78	Papermill at Irvine, between Meadowhead and Newhouse Interchange
A898/ M898	Erskine Bridge and southbound slip to M8 eastbound
M8	Junction 30 – 31 westbound

Table 6.7.2 - Water Run Off Locations

Road Number	Location
A701	North of St Annes Bridge
A78	Auchmead road, Greenock
A78	Skelmorlie to Largs at Knock Castle
A78	Barrs Cottage, Inverkip Road, Greenock
A78	Newhouse Interchange to Eglinton
A78	Branchton speed camera, westbound
A78	Westbound off-slip to power station
A78	Car wash at Inverkip Roundabout, eastbound
A737	Roadhead Roundabout to Clerksbridge toll
A737	Dalry Rd, Kilwinning
A82	Stoneymollan Roundabout
A82	Dunglass Roundabout to Erskine Bridge
A77	Above and below Bellfield Interchange
A77	South of Ballantrae at the Watertanks
A77	Crossraguel to Dalqhat farm

A77	North of Stena Ferry Terminal
A75	East of Barlae
A76	North of Kirkconnel
A76	Kirkconnel south Gateway (adjacent to railway)
A76	500m north of Drumlanrig Castle junction
A76	Drumlanrig to Enterkinfoot, north of retaining walls
A898	Northbound on slip from A82 Northbound
M8	Eastbound entry to Charing Cross Underpass
M8	Charing Cross Underpass (icicle formation from soffit

Table 6.7.3 - Gradient Locations

Road Number	Location
M77	Southbound from junction 3 to junction 4
M8/M77	Southbound slip to M77 from M8
M74	Southbound from junction 10 to junction 12
A737	Risk Brae, from Howwood to Roadhead roundabout
A75	The Glen to the west of Dumfries
A75	Glen Luce Bypass
A76	Skerrington roundabout to Templeton Roundabout
A76	New Cumnock to Rigg Far

Table 6.7.4 – M6 DBFO Locations

From	To	Description
Junction 13	N/A	Junction 13 / A702 Junction - Area prone to heavy snowfall
Junction 13	Junction 14	Area has experienced freezing rain and heavy hail showers in certain wind conditions.
Junction 14	Junction 15	Tinnybank - N/B and S/B inclines cause HGV difficulties Greenhillstairs to Blacklaw - Area has experienced freezing rain and heavy hail showers in certain wind conditions.
Junction 18	Junction 19	Cowdens - S/B uphill gradient, 1 mile south of Junction 18. Area has experienced freezing rain and heavy hail showers in certain wind conditions

Attachment 6.8 – Records

Table 6.8.1 – Records

Item	Contents include:
1	Decisions taken, when and by whom,
2	Planned and actual treatment records,
3	Planned and actual response times achieved,
4	Planned and actual commencement times,
5	Planned and actual route times,
6	Planned and actual spread rates,
7	Observations and actions taken by the Winter Service Patrols,
8	Output from Winter Service Plant on-board data capture devices,
9	Winter Service Plant down time and software faults,
10	Winter Service Plant deployment records (including vehicle location records) and driver and operator logs,
11	Logs (both manual and electronic) for telephone, electronic mail and two way communication calls,
12	Loading point de-icing stocks and replenishment orders,
13	Ice prediction system Records,
14	Weather forecasts and actual weather experienced,
15	Complaints by members of the public and Trunk Road users,
16	Accidents during winter conditions,
17	Road closures due to winter conditions,
18	Weights and volumes as appropriate for the amount of de-icing material(s) spread for each route,
19	Pre- and mid-season road sensor calibration systems,
20	Winter Service Plant calibration certificates, and
21	Actual salt stocks held including strategic salt stocks.

Attachment 6.9 - Potassium Acetate Treatment

Table 6.9.1 - Potassium Acetate Treatment

Road Number	Location
M8	Kingston Bridge Complex (including some 4.5 kilometres of approach viaduct and on- and off-ramps)
M8	Whitecart Viaduct
M8	St James Interchange
A898	Erskine Bridge Complex (including approach Structures)
A725 Footbridge	Kingsway, East Kilbride
A726 Footbridge	Queensway, East Kilbride
A77	Hansel Bridge footbridge

Attachment 6.10 - Footways, Footbridges and Cycleways – Response Times and Clearance Requirements

Table 6.10.1 - Footways, Footbridges and Cycleways – Precautionary Treatment Requirements

Categories	Requirements
A	Apply de-icing treatment before 06.00 hours each morning.

Table 6.10.2 - Footways, Footbridges and Cycleways – Response Times and Clearance Requirements for Snow or Ice Occurring Together

Categories	General	Between 06.00 and 19.00 hours	Treatments out with daytime hours
A	Between the hours of 06.00 and 19.00, commence snow clearing as soon as practicable to prevent compaction by traffic. Ploughing should be continuous thereafter to prevent a build-up of snow.	Clear all snow within 2 hours of snow ceasing to fall. On wide routes, 1.2 metre minimum width shall be cleared initially.	Clear snow when required by the Director.

Table 6.10.3 – Footways, Footbridges and Cycleways within the Unit

Location Number	Route	Location	Details of Footway		Route Centreline Length (m) Category A
			Start	Finish	
1	A725	East Kilbride	Start of 50mph	A726 Junction	3100
2	A726	East Kilbride	A725 Junction	B761 Junction	3000
3	A737	Beith	Within 30mph in Beith		400
4	A737	Kilwinning	Within 30mph in Kilwinning		6000
5	A75	Stranraer	A77 Junction	Commerce Road Junction	1300
6	A75	Springholm	Within 30mph in Springholm		1300
7	A75	Crocketford	Within 30mph in Crocketford		550
8	A76	Mauchline	Start of 30mph Limit	Hillhead Road	4200
9	A76	New Cumnock	Start of 30mph Limit	Loch View	4900
10	A76	Sanquhar	Within 30mph in Sanquhar		1250
11	A76	Kirkconnel	Within 30mph in Kirkconnel		1080

12	A76	Dumfries	A75 Junction	Newbridge Farm	1500
13	A76	Closeburn	Shawsholm Road	End of 40mph	500
14	A76	Thornhill	Within 30mph in Thornhill		700
15	A76	Carronbridge	Within 30mph in Carronbridge		760
16	A77	Symington	Hansel Village		100
17	A77	Girvan	Shallochpark Roundabout	Bridgemill Roundabout	2750
18	A77	Maybole	Within 30mph in Maybole		2100
19	A77	Ballantrae	Within 30mph in Ballantrae		210
20	A77	Lendalfoot	Within 30mph in Lendalfoot		2160
21	A77	Kirkoswald	Within 30mph in Kirkoswald		1040
22	A77	Minishant	Within 30mph in Minishant		1580
23	A77	Cairnryan	Start of Cairnryan north end	30mph signs south end	1900
24	A78	Greenock	Flatterton Road Junction	Bullring Roundabout	5000
25	A78	Wemyss Bay	From 40mph at north end	Skelmorlie	2000
26	A78	Largs	From 40mph at north end	To 30mph at south end	5000
27	A78	Fairlie	Within 30mph in Fairlie		2180
28	A78	Seamill	From B7047 junction	30mph	2200

29	A78	Skelmorlie	From 30mph at south end	Wemyss Bay	2300
30	A701	Heathhall	A75 Roundabout	Catherinefield Road Junction	3000
31	A8	Port Glasgow/Greenock	Newark Roundabout	Bullring Roundabout	5500
32	A82	Dumbarton	Barloan Toll Roundabout	Dunglass Roundabout	4350

Attachment 6.11 – De-icing Material Spread Rates

Table 6.11.1 – Decision Matrix for Winter Service

<table>
<tr><td rowspan="2">Road Surface Temperature</td><td colspan="3">Predicted Road Conditions</td></tr>
<tr><td>Wet</td><td>Wet Patches</td><td>Dry</td></tr>
<tr><td>May fall below 1°C</td><td rowspan="2">Salt before frost</td><td>Salt before frost (See note A)</td><td>No action likely, monitor weather (See note A)</td></tr>
<tr><td rowspan="4">Expected to fall below 1°C</td><td colspan="2">Salt before frost (see note B)</td></tr>
<tr><td colspan="3">Salt after rain stops</td></tr>
<tr><td colspan="3">Salt before frost and after rain stops (see note C)</td></tr>
<tr><td colspan="2">Salt before frost</td><td>Monitor weather conditions</td></tr>
<tr><td>Expected snow</td><td colspan="3">Salt before snow</td></tr>
<tr><td rowspan="3">Freezing Rain</td><td colspan="3">Salt before rainfall (see note C)</td></tr>
<tr><td colspan="3">Salt during rainfall (see note C)</td></tr>
<tr><td colspan="3">Salt after rainfall (see note C)</td></tr>
</table>

Notes:

(a) Particular attention should be given to any possibility of water running across carriageways and such locations should be monitored and treated as required.

(b) When a weather forecast contains reference to expected hoarfrost considerable deposits of frost are likely to occur and close monitoring will be required. Particular attention should be given to the timing of precautionary treatments due to the possibility that salt deposited on a dry road may be dispersed before it can become effective.

(c) Under these circumstances rain will freeze on contact with running surfaces and full pre-treatment should be provided even on dry roads. This is a most serious condition and should be monitored closely and continuously throughout the danger period.

Table 6.11.2 sets out the spread rates for precautionary treatments. Rate of spread for precautionary treatments should not be adjusted to take account of residual salt or surface moisture unless stated otherwise.

The rates in the table below are for precautionary salt treatment prior to snowfall that is essential to form a de-bonding layer and snow clearance.

Table 6.11.2 – Treatment Matrix Spread Rates for Precautionary Treatments

Item	Forecast weather condition	Dry or damp road (grammes/square metre)	Road Surface Wet / Frost Susceptible / Surface Water Run-off Area (grammes/square metre)
1	RST higher than plus 1°C	0	0
2	RST lower than or equal to plus 1°C but higher than minus 2°C	10	20
3	RST lower than or equal to minus 2°C but higher than minus 5°C	15	30
4	RST lower than or equal to minus 5°C (or see TS alternative de-icer guidance)	30	40
5	Freezing Fog	Add 5 to Item 1 to 4 as applicable	Add 10 to Item 1 to 3 as applicable; otherwise as per item 4.
6	Freezing Rain	40	40
7	Snow Accumulations of any depth	40	40

Table 6.11.3 – Precautionary Treatment Potassium Acetate Spreading Rates

Conditions forecast	Spread Rate (litres/square metre)
Road surface temperature lower than or equal to plus 1°C but higher than minus 2°C	0.0156
Road surface temperature lower than or equal to minus 2°C but higher than minus 5°C	0.0312
Frost and road surface temperature lower than	a minimum of 0.0312 which should be increased with manufacturer's recommendations
-5°C	
Snow	
Freezing conditions after rain	

Table 6.11.4 – Snow or Ice Clearance Salt Spreading Rates

Road Surface Condition	Treatment				
	Spreading Salt (grammes/square metre)	Ploughing	Blowing	Alternative De-Icer	Ice Breaker
Ice Formed	40	No	No	Where Applicable	No
Snow covering of less than 30mm	40	Yes	No	No	No
Snow covering exceeds 30mm	40	Yes	No	No	No
Snow accumulations due to prolonged snowfall	40	Yes (continuous)	Where applicable	No	No
Hard packed snow/ice less than 20mm thick	40 (successive treatments)	No	No	No	Where applicable
Hard packed snow/ice	salt/abrasive (successive)	No	No	Yes	Yes

Attachment 6.12 Snow Clearance

Table 6.12.1 Snow Clearance

Condition Criteria	Category A Patrol Routes		Non Category A Patrol Routes	
	Dual Carriageways & Motorways		Dual Carriageways	Dual Wide Single 2+1 & Single Carriageways
	Number of Existing Lanes		Number of Existing Lanes	
	2	3 or More	2	1 or 2 (WS 2 + 1)
	Minimum number of lanes in each direction free from ice and snow as far as is reasonably practicable		Minimum number of lanes in each direction free from ice and snow as far as is reasonably practicable (Except where snow gates)	
Snow at any time	1	2	1	1
Following clearance of minimum lanes or the cessation of snow fall all lanes are to be clear of snow	3 hours	3 hours	3 hours	3 hours

Table 6.12.2 Road Surface Wetness

Definition	**Description**	**Water film thickness (for when using WFT instrumentation)**
Dry Road	A road that shows no signs of water or dampness at the surface but may be just detectably darker. It may have moisture contained in pores below the surface that is not 'pumped' to the surface by traffic.	0 to 0.03mm (=0-30 g/m^2)
Damp Road	A road which is clearly dark but traffic does not generate any spray. This would be typical of a well-drained road when there has been no rainfall after 6 hours before the treatment time.	0.03 to 0.05mm (=30-50 g/m^2)
Wet Road	A road on which traffic produces fine spray but not small water droplets. This would be typical of a well-drained road when there has been rainfall up to 3 hours before the treatment time.	0.05 to 0.1mm (=50-100 g/m^2)
Very Wet Road and Flowing Water on Road*****	A road on which traffic produces droplets of water in the air to visibly flowing water on the surface	Greater than 0.1mm (=>100 g/m^2)

Attachment 6.13 – Salt Storage Facility

6.13.1 Specification for Salt Storage Facility

General

- All salt storage facilities subject to Director approval.
- It may be permissible to use existing depot provisions which are fit for purpose subject to Director approval.

Planning Requirements

- All planning, building and environmental regulations, appertaining to the facility, should be followed.

Design

- All buildings and storage structures must meet UK building design codes and be constructed of materials not subject to corrosion.
- The storage area must be large enough to contain the salt stockpile and provide room for vehicles to manoeuvre when unloading/ loading and maintaining the stockpile.
- Storage facility construction should be designed and specified by competent persons.

Site Conditions

- Salt stockpiles should be kept on a concrete or bituminous base strong enough to carry the weight of the salt and the loads imposed by the structure.
- Base to be sloped to allow water to drain away.
- Adequate drainage must be provided which meets environmental requirements/agreements.

Walls

- Salt stockpiles shall be enclosed on three sides with retaining walls.
- Retaining walls for stockpiles shall be impervious to water, mainly to prevent water entering but also they will help to maintain a more stable moisture content in dry conditions.
- All of the walls must be designed to withstand the maximum possible loads caused from salt stored against them and the dynamic forces from loading the salt.

Roof

- A structured roof shall be provided and there shall be no gaps between walls and the roof structure to eliminate salt spillage.

Safety

- For safety reasons the maximum stockpile height should not exceed the ability of the loader to push up salt from solid ground. All faces should be sloped to reduce the risk of collapse.