Scottish Trunk Road Network Management Contract
South East Unit

Attachment 6.1 Appendices for Winter Service Plan

Table 6.1.1 - Winter Service Patrol Record

	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)		
Winter Service Patrol start and end time	**Air (°C)**	**Road Surface temp (°C)**	**Snow**	**Icy**	**Wet**	**Dry**	**High**	**Medium**	**Low**	**Action code**	**Treatment Type**	**Spread rate (g/m2)**	**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 (eg 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)	Total route length treated (km)	Average Speed (km/hr)	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
SE20R 01	Charlesfield	A7 as per route card	12.8	12.8	67.2	67.2	56	72.0	90.1	40%	7.3	As per route card	9.80		Pre-wet salt
SE20R 02	Charlesfield	A7, A6091 and A68 as per route card	12.8	12.8	86.3	53.3	56	92.5	6.5	50%	7.4	As per route card	7.89		Pre-wet salt
SE20R 03	Gilmerton	A68 as per route card	10.0	10.0	94.5	49.0	56	101.3	12.0	43%	8.3	As per route card	8.19		Pre-wet salt
SE20R 04	Gilmerton	A702 as per route card	7.5	7.5	58.6	58.6	56	62.8	61.9	47%	7.3	As per route card	8.58		Pre-wet salt
SE20R 05	Macmerry	A1 as per route card	22.1	22.1	110.0	60.5	60	110.0	22.2	38%	8.8	As per route card	10.59		Pre-wet salt
SE20R 06	Macmerry	A1 and A720 as per route card	1.4	1.4	135.9	73.4	68	119.9	1.4	53%	8.6	As per route card	12.63		Pre-wet salt
SE20R 07	Macmerry	A1 and A720 as per route card	1.5	1.5	135.3	67.5	68	119.4	1.5	50%	8.9	As per route card	12.03		Pre-wet salt
SE20R 08	Burghmuir	M8 and M9 as per route card	10.7	10.7	129.1	58.4	68	113.9	10.5	39%	10.2	As per route card	11.94		Pre-wet salt
SE20R 09	Burghmuir	M8 and M9 as per route card	12.7	12.7	101.7	51.8	68	89.7	12.6	41%	10.1	As per route card	10.42		Pre-wet salt
SE20R 10	Burghmuir	A90, M9 and M90 as per route card	10.3	10.3	103.6	38.1	64	97.1	10.1	31%	10.6	As per route card	8.08		Pre-wet salt
SE20R 11	Kincardine	A977, A985, and M823 as per route card	2.1	2.1	56.3	39.9	56	60.3	26.3	47%	8.4	As per route card	6.72		Pre-wet salt
SE20R 12	Kincardine	M80 and M876 as per route card	6.4	6.4	121.0	59.2	68	106.8	14.0	42%	10.4	As per route card	12.27		Pre-wet salt
SE20R 13	Kincardine	M9 as per route card	9.7	9.7	101.3	55.6	68	89.4	19.0	43%	10.3	As per route card	11.49		Pre-wet salt
SE20R 14	Kincardine	M9 as per route card	10.2	10.2	117.3	59.0	68	103.5	6.4	44%	10.4	As per route card	12.28		Pre-wet salt

Route	Depot	Description	Depot to Route (km)	Time to Route (mins)	Total route length (km)	Total route length treated (km)	Average Speed (km/hr)	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
SE20R 15	Kincar dine	Clackmanna nshire Bridge, Kincardine Bridge, Queensferry Crossing and Forth Road Bridge as per route card	2.1	2.1	101.6	38.6	56	108.9	50.7	25%	7.3	As per route card	4393 litres		Potassium Acetate

Route	Depot	Description	Depot to Route (km)	Time to Route (mins)	Total route length (km)	Total route length treated (km)	Average Speed (km/hr)	Route Time (mins)	Route to Depot (km)	Route efficiency	Average Width of Route (m)	Alternative Access	Route volume at 20 ml/sq m (litres)	Route volume at 40 ml/sq m (litres)	Treatment Type
SEF W R1	Charles field	A6901, A7 – Selkirk, Hawick, Langholm	12	12	35.6	9.6	14	152	30	Na	1.7	A68//A698	320	640	Brine
SEF W R2	Charles field	A68 - Pathhead, Lauder, Earlston, Jedburgh	45	35	65.6	7.6	19	201.5	15	na	2.48	A698/ A7	377	754	Brine
SEF W R3	Gilmert on	A702 - Silverburn, Carlops, West Linton, Dolphington, Biggar, Coulter	15	15	43.5	10.5	13	201	48.5	na	1.7	A703/ A72	356	712	Brine
SEF W R4	Kincard ine	A977/ A985 - Kincardine, Crombie, Rosyth	5	7	23.6	3.1	11.5	124	25.5	na	1.8	Queensferr y	112	224	Brine
SEF W R5	Queens ferry	A9000 FRB footway/ cycleway/ plaza	0.2	1	10	10	6	100	0.4	na	3.6	Kincardine	720	1440	Pot acc + brine

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)	Total route length treated (km)	Average Speed (km/hr)	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
SE40 R01	Charles field	A7 as per route card	33.0	33.0	42.9	42.9	56	46.0	90.1	25%	7.3	As per route card		12.51	Pre-wet salt
SE40 R02	Charles field	A7 and A6091 as per route card	33.0	33.0	41.8	41.8	56	44.8	3.9	53%	7.5	As per route card		12.47	Pre-wet salt
SE40 R03	Charles field	A68 as per route card	13.0	13.0	76.9	44.9	56	82.4	5.3	47%	7.4	As per route card		13.35	Pre-wet salt
SE40 R04	Gilmerton	A68 as per route card	10.0	10.0	75.1	39.7	56	80.5	14.3	40%	8.4	As per route card		13.34	Pre-wet salt
SE40 R05	Gilmerton	A702 as per route card	7.5	7.5	30.9	30.9	56	33.1	31.2	46%	7.2	As per route card		8.94	Pre-wet salt
SE40 R06	Gilmerton	A702 as per route card	31.2	31.2	27.7	27.7	56	29.7	61.9	23%	7.4	As per route card		8.17	Pre-wet salt
SE40 R07	Macmerry	A1 as per route card	1.8	1.8	72.2	39.9	68	63.7	8.5	48%	9.0	As per route card		14.34	Pre-wet salt
SE40 R08	Macmerry	A1 as per route card	1.4	1.4	72.1	39.4	68	63.6	1.5	53%	9.0	As per route card		14.20	Pre-wet salt
SE40 R09	Macmerry	A1 as per route card	22.1	22.1	83.9	31.3	60	83.9	30.0	23%	8.7	As per route card		10.87	Pre-wet salt
SE40 R10	Macmerry	A1 as per route card	22.1	22.1	92.6	29.3	60	92.6	22.1	21%	8.9	As per route card		10.40	Pre-wet salt
SE40 R11	Macmerry	A720 as per route card	13.6	13.6	75.9	36.6	68	67.0	14.9	35%	9.7	As per route card		14.18	Pre-wet salt
SE40 R12	Macmerry	A720 as per route card	13.6	13.6	81.3	35.9	68	71.7	14.0	33%	9.7	As per route card		13.91	Pre-wet salt
SE40 R13	Burghmuir	M8 and M9 as per route card	17.7	17.7	74.1	37.7	68	65.4	12.6	36%	10.1	As per route card		15.27	Pre-wet salt
SE40 R14	Burghmuir	M8 and M9 as per route card	12.7	12.7	77.1	36.8	68	68.0	17.4	34%	10.2	As per route card		14.96	Pre-wet salt
SE40 R15	Burghmuir	M8 and M9 as per route card	0.7	0.7	80.8	34.3	68	71.3	0.6	42%	10.3	As per route card		14.14	Pre-wet salt
SE40 R16	Burghmuir	A90, M9 and M90 as per route card	7.6	7.6	92.8	35.2	64	87.0	10.1	32%	9.7	As per route card		13.69	Pre-wet salt

Route	Depot	Description	Depot to Route (km)	Time to Route (mins)	Total route length (km)	Total route length treated (km)	Average Speed (km/hr)	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
SE40 R17	Burghmuir	A90, M9 and M90 as per route card	10.3	10.3	82.0	32.7	64	76.9	7.5	32%	10.1	As per route card		13.27	Pre-wet salt
SE40 R18	Kincardine	M80 and M876 as per route card	6.4	6.4	71.1	31.2	68	62.7	7.6	37%	10.4	As per route card		13.01	Pre-wet salt
SE40 R19	Kincardine	M80 and M876 as per route card	7.6	7.6	71.4	31.7	68	63.0	6.4	37%	10.3	As per route card		13.06	Pre-wet salt
SE40 R20	Kincardine	M9 as per route card	10.2	10.2	73.2	36.0	68	64.6	19.0	39%	10.3	As per route card		14.89	Pre-wet salt
SE40 R21	Kincardine	M9 as per route card	10.2	10.2	53.6	33.8	68	47.3	19.0	41%	10.3	As per route card		14.05	Pre-wet salt
SE40 R22	Kincardine	A977, A985 and M823 as per route card	2.1	2.1	56.3	39.9	56	60.3	26.3	47%	8.4	As per route card		13.43	Pre-wet salt
SE40 R23	Kincardine	Clackmannanshire Bridge, Kincardine Bridge, Queensferry Crossing and Forth Road Bridge as per route card	2.1	2.1	101.6	38.6	56	108.9	50.7	25%	7.3	As per route card		8785 Litres	Potassium Acetate

Route	Depot	Description	Depot to Route (km)	Time to Route (mins)	Total route length (km)	Total route length treated (km)	Average Speed (km/hr)	Route Time (mins)	Route to Depot (km)	Route efficiency	Average Width of Route (m)	Alternative Access	Route volume at 20 ml/sq m (litres)	Route volume at 40 ml/sq m (litres)	Treatment Type
SEFW R1	Charlesfield	A6901, A7 – Selkirk, Hawick, Langholm	12	12	35.6	9.6	14	152	30	Na	1.7	A68//A698	320	640	Brine
SEFW R2	Charlesfield	A68 - Pathhead, Lauder, Earlston, Jedburgh	45	35	65.6	7.6	19	201.5	15	na	2.48	A698/ A7	377	754	Brine

Route	Depot	Description	Depot to Route (km)	Time to Route (mins)	Total route length (km)	Total route length treated (km)	Average Speed (km/hr)	Route Time (mins)	Route to Depot (km)	Route efficiency	Average Width of Route (m)	Alternative Access	Route volume at 20 ml/sq m (litres)	Route volume at 40 ml/sq m (litres)	Treatment Type
SEF W R3	Gilmerton	A702 - Silverburn, Carlops, West Linton, Dolphington, Biggar, Coulter	15	15	43.5	10.5	13	201	48.5	na	1.7	A703/ A72	356	712	Brine
SEF W R4	Kincardine	A977/ A985 - Kincardine, Crombie, Rosyth	5	7	23.6	3.1	11.5	124	25.5	na	1.8	Queensferry	112	224	Brine
SEF W R5	Queensferry	A9000 FRB footway/ cycleway/ plaza	0.2	1	10	10	6	100	0.4	na	3.6	Kincardine	720	1440	Pot acc + brine

Note: Route efficiency is calculated as per the example shown Below

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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 treated 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

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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
SEPR 01	Charlesfield	A7 as per route card	33.0	33.0	42.9	42.9	90.1	As per route card	7.3
SEPR 02	Charlesfield	A7 and A6091 as per route card	33.0	33.0	41.8	41.8	3.9	As per route card	7.5
SEPR 03	Charlesfield	A68 as per route card	13.0	13.0	76.9	44.9	5.3	As per route card	7.4
SEPR 04	Gilmerton	A68 as per route card	10.0	10.0	75.1	39.7	14.3	As per route card	8.4
SEPR 05	Gilmerton	A702 as per route card	7.5	7.5	30.9	30.9	31.2	As per route card	7.2
SEPR 06	Gilmerton	A702 as per route card	31.2	31.2	27.7	27.7	61.9	As per route card	7.4
SEPR 07	Macmerry	A1 as per route card	1.8	1.8	72.2	39.9	8.5	As per route card	9.0
SEPR 08	Macmerry	A1 as per route card	1.4	1.4	72.1	39.4	1.5	As per route card	9.0
SEPR 09	Macmerry	A1 as per route card	22.1	22.1	83.9	31.3	30.0	As per route card	8.7
SEPR 10	Macmerry	A1 as per route card	22.1	22.1	92.6	29.3	22.1	As per route card	8.9
SEPR 11	Macmerry	A720 as per route card	13.6	13.6	75.9	36.6	14.9	As per route card	9.7
SEPR 12	Macmerry	A720 as per route card	13.6	13.6	81.3	35.9	14.0	As per route card	9.7
SEPR 13	Burghmuir	M8 and M9 as per route card	17.7	17.7	74.1	37.7	12.6	As per route card	10.1
SEPR 14	Burghmuir	M8 and M9 as per route card	12.7	12.7	77.1	36.8	17.4	As per route card	10.2
SEPR 15	Burghmuir	M8 and M9 as per route card	0.7	0.7	80.8	34.3	0.6	As per route card	10.3
SEPR 16	Burghmuir	A90, M9 and M90 as per route card	7.6	7.6	92.8	35.2	10.1	As per route card	9.7
SEPR 17	Burghmuir	A90, M9 and M90 as per route card	10.3	10.3	82.0	32.7	7.5	As per route card	10.1
SEPR 18	Kincardine	M80 and M876 as per route card	6.4	6.4	71.1	31.2	7.6	As per route card	10.4

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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
SEPR 19	Kincardine	M80 and M876 as per route card	7.6	7.6	71.4	31.7	6.4	As per route card	10.3
SEPR 20	Kincardine	M9 as per route card	10.2	10.2	73.2	36.0	19.0	As per route card	10.3
SEPR 21	Kincardine	M9 as per route card	10.2	10.2	53.6	33.8	19.0	As per route card	10.3
SEPR 22	Kincardine	A977, A985 and M823 as per route card	2.1	2.1	56.3	39.9	26.3	As per route card	8.4
SEPR 23	Kincardine	Clackmannanshire Bridge, Kincardine Bridge, Queensferry Crossing and Forth Road Bridge as per route card	2.1	2.1	101.6	38.6	50.7	As per route card	7.3

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Table 6.1.5 Operational Salt Stock Levels

De-icing Material (i.e. Dry salt / ABP)	Location	Type (Barn / Open)	Min 1st Oct
Dry Salt	Charlesfield	Barn	4,000 tonnes
Dry Salt	Gilmerton	Barn	3,000 tonnes
Dry Salt	Macmerry	Barn	5,000 tonnes
Dry Salt	Burghmuir	Barn	3,000 tonnes
Dry Salt	Kincardine	Barn	10,000 tonnes
Potassium Acetate	Kincardine	Storage Tanks	135,000 litres
Potassium Acetate	Queensferry	Storage Tank	15,000 litres
Magnesium Chloride	Charlesfield	IBC	7,000 litres
Magnesium Chloride	Gilmerton	IBC	7,000 litres
Magnesium Chloride	Macmerry	IBC	10,000 litres
Magnesium Chloride	Burghmuir	IBC	10,000 litres
Magnesium Chloride	Kincardine	IBC	16,000 litres

Brine Production & Storage

Location	Type (Saturator / Storage Only)	Capacity (L)	Min (L)
Charlesfield	20,000l Saturator + 10,000l Storage	30,000	17,500
Gilmerton	20,000l Saturator	20,000	12,500
Macmerry	20,000l Saturator + 20,000l Storage	40,000	33,000
Burghmuir	20,000l Saturator + 20,000l storage	40,000	27,500
Kincardine	20,000l Saturator +20,000l storage	40,000	29,000

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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), ~~(iii)~~**
Pre-wet spreader/ tbc	Charlesfield	12m³	3	(i)
Pre-wet spreader/ tbc	Gilmerton	12m³	3	(i)
Pre-wet spreader/ tbc	Macmerry	12m³	6	(i)
Pre-wet spreader/ tbc	Burghmuir	12m³	5	(i)
Pre-wet spreader/ tbc	Kincardine	12m³	5	(i)
Tanker sprayer/ tbc	Kincardine	10,000 Litres	1	(i)
Pre-wet spreader/ tbc	Charlesfield	6m³	2	(ii)
Pre-wet spreader/ tbc	Gilmerton	6m³	1	(ii)
Pre-wet spreader/ tbc	Macmerry	12m³	4	(ii)
Pre-wet spreader/ tbc	Burghmuir	9m³	2	(ii)
Pre-wet spreader/ tbc	Kincardine	12m³	1	(ii)
Combi pre-wet spreader-sprayer/ tbc	Kincardine	6m³/ 3,000 Litres	3	(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)
Footway tractor fitted with interchangeable tank-sprayer/ salt hopper-spreader, plough	Charlesfield	500l/ 0.5t	2	(i)
Footway tractor fitted with interchangeable tank-sprayer/ salt hopper-spreader, plough	Gilmerton	500l/ 0.5t	1	(i)
Footway tractor fitted with interchangeable tank-sprayer/ salt hopper-spreader, plough	Macmerry	500l/ 0.5t	1	(i)
Footway tractor fitted with interchangeable tank-sprayer/ salt hopper-spreader, plough	Kincardine	500l/ 0.5t	1	(i)
4x4 pick up with tank-sprayer, plough attachment	Queensferry	750l	1	(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), (iii)
Demount pre-wet spreader/ tbc	Charlesfield	12m³	1	(i)
Demount pre-wet spreader/ tbc	Charlesfield	6m³	1	(i), (ii)
Demount pre-wet spreader/ tbc	Gilmerton	12m³	1	(i),
Demount pre-wet spreader/ tbc	Macmerry	12m³	2	(i)
Demount pre-wet spreader/ tbc	Macmerry	6m³	1	(i), (ii)
Demount pre-wet spreader/ tbc	Burghmuir	12m³	2	(i)
Demount pre-wet spreader/ tbc	Burghmuir	6m³	1	(i), (ii)
Demount pre-wet spreader/ tbc	Kincardine	12m³	1	(i)
Demount combi pre-wet spreader-sprayer/ tbc	Kincardine	9m³	1	(i), (ii)
Demount tanker sprayer/ tbc	Kincardine	10,000Litres	1	(i)
Footway tractor fitted with interchangeable tank-sprayer/ salt hopper-spreader, plough	Charlesfield	500l/ 0.5t	1	(i)
Footway tractor fitted with interchangeable tank-sprayer/ salt hopper-spreader, plough	Kincardine	500l/ 0.5t	1	(i)
Fastrac	Charlesfield	N/A	1	(i)
Fastrac	Gilmerton	N/A	1	(i)
Fastrac	Kincardine	N/A	1	(i)
Snowblower	Charlesfield	600t/ h	1	(i)
Snowblower	Gilmerton	600t/ h	1	(i)
Snowblower	Burghmuir	600t/ h	1	(i)
Snowblower	Kincardine	600t/ h	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
Tractor/ plough/ snowblower	REDACTED	1	4
Tractor/ plough/ salt spreader	REDACTED	2	4
Tractor/ plough	REDACTED	2	4
Raiko Ice-breaker	Transport Scotland/ tbc	1	4

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

Compound, Depot or Facility Name	Owner	Postal Address	Purpose	Access Arrangements	Contact Details	Facilities
Queensferry	**REDACTED**	**REDACTED**	Main office	M90 via A904 24 hours	TBC	Main office, welfare, FRB depot
Burghmuir	**REDACTED**	**REDACTED**	Office, Operational and Winter Depot	M9 24 hours	TBC	Office, mess, welfare, materials store, salt store and weighbridge
Kincardine	**REDACTED**	**REDACTED**	Office, Operational and Winter Depot	A977 24 hours	TBC	Office, mess, welfare, materials store, salt store and weighbridge
Charlesfield	**REDACTED**	**REDACTED**	Office, Operational and Winter Depot	A68 24 hours	TBC	Office, mess, welfare, materials store, salt store and weighbridge
Gilmerton	**REDACTED**	**REDACTED**	Office, Operational and Winter Depot	A720 via A772 24 hours	TBC	Office, mess, welfare, materials store, salt store and weighbridge
Macmerry	**REDACTED**	**REDACTED**	Office, Operational and Winter Depot	A1 via A199 24 hours	TBC	Office, Operational and Winter Depot
Shawfair Park	**REDACTED**	**REDACTED**	Office	A720 via A7 24 hours	TBC	Office

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 – Salt Stock Monitoring Report

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 – Location of Winter Service Infrastructure

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

	Snow Fence (meters)	Snow Gates (Number)	Salt Bins (Number)
A68 at Soutra	1,880		
A68 Soutra Hill – at Soutra Mains Cottage		2	
A68 Soutra Hill – North of Oxton Junction		2	
A90 South Queensferry and Public car park at Ferrymuir Gait			12
A90 at North Queensferry A702 A68			2 12 7

Table 6.5.2 - Locations of Hidden Message Signs

Road Number	Location	Detailed Description
A68	Carfraemill	Southbound at roundabout
A68	Cleikimin	Junction with A68/A689 facing north
A68	Cleikimin	Junction with A68/A689 facing west
A68	Cleikimin	50m north of junction of A68/A689 facing north
A68	Edgerston	Southbound layby Edgerton
A68	Jedburgh	Oxnam Rd end - Abbey Bridge
A68	Jedburgh	Bonjedward southern end of triangle (A68) southbound
A68	Jedburgh	Bonjedward southern end of triangle (A68) northbound

A68	Lauder	A68/A697 at High Cross
A68	St. Boswells	A68/A699 cross roads
A68	Soutra Hill	Southbound snow gates
A68	Soutra Hill	Northbound snow gates
A7	Gala Kingsknowes Roundabout	Facing west on eastbound approach
A7	Hawick	Buccleuth St
A7	Hawick	Burn Foot north of Hawick southbound
A7	Hawick	Junction with B6359
A7	Selkirk Ladylands	Ladylands junction with A699
A7	South of Teviothead	At end of widened carriageway
A702	Dolphington	Southbound between layby and 40mph sign
A702	Dolphington	Northbound between layby and 40mph sign
A702	Carlops	Northbound at 30mph signs on southside
A702	Carlops	Southbound at 30mph signs on southside
A68	Carfraemill	Southbound at roundabout

Table 6.4.3 - Locations of Weather Stations, Forecast Sites and Camera Sites (Single or Bi-Lateral)

Road Number	Location
M90	Halbeath
A985	Kincardine
M8	Livingston (J3)
M8	Whitburn (J4)
M8	Duntiland
M9	Linlithgow
M9	Newbridge

M9	J2 to 1A (wind only)
M9	Polmont
M9	Bannockburn
M9	Kier
M80	Pirnhall
M80	Haggs
A876	Clackmannanshire Bridge (Wind Only)
A90	Dolphinton
A90	Forth Bridge NW
A90	Forth Bridge Wind Site
M90	Dundas Gantry 07
M90	Queensferry Crossing gantry 09
A1	Gladsmuir
A1	Grantshouse
A1	Haddington
A1	Myreside
A1	Toreness
A1	Tyne (East Linton)
A1	Houndwood
A6091	Newstead
A68	Bonjeward
A68	Carter Bar
A68	Hope
A68	Soutra
A68	Ealrston
A7	Mosspaul
A7	Selkirk

A7	Hawick
A7	Terrona
A702	Abington
A702	Boghaul
A702	Biggar (Causewayend)
A702	Ninemileburn
A702	West Linton
A720	Swanston

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

The new Queensferry crossing has incorporated the use of centre reserve concrete barrier on the M90 from Scotstoun bend through to the junction 1 off slip at Admiralty junction.

The A720 between Water of Leith and Lothianburn Junction has Vertical concrete barrier.

Attachment 6.6 Winter Service Patrols

Table 6.6.1 – Category A and B Winter Service Patrol Routes

Route	Category
M8	A
M876	A
M80	A
M9	A
M9 Kirkliston Spur	A
M90	A
A8	A
A90	A
A720	A
A1 – from A720 Old Craighall to English Border	A
A90/M90	A
A823 (M)	A
A68	B
A6091	B
A7	B
M8	A
A702	B
A876	B
A977	B
A985	B

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	Operations / Mitigation Measures
M8	Junction 3 Dechmont – M8 Junction 5 Blairmains	M8 patrol vehicle to be fitted with an Exactrac sensor provided by Transport Scotland
A68	Huntsfords Bends to Carter Bar	
A68	South of Soutra to Carfaemill Roundabout	
A68	Pathead to Soutra Hill	
A7	Newmill to Castle Hermitage Junction	
A702	South of A703 Junction to North of West Linton	
A702	Candymill to North of Coulter	
A90	Forth Bridge	2.5 Km of the carriageway over the Forth Road Bridge where traffic flows have substantially reduced due to the change in use of the bridge as becoming part of the Public Transport Corridor. The site has experienced extreme low temperatures and high snow build up that has created, not only a risk to the few vehicles that use the bridge, but also the bridge

		itself, due to the weight of snow building up on the structure. When the North-West Weather station has identified that the surface temperature is below minus ten degrees C (-10°C), or that there is lying snow present on the carriageway, Police to close the Forth Road Bridge to all traffic and agreed diversion implemented. This will stay in place until the weather event has passed or that temperatures are high enough to ensure that frost and Ice would not form. OC shall remove any snow to avoid weight build up on the structure.

Table 6.7.2 - Water Run Off Locations

Road Number	Location
A1	Dunbar to English Border (various locations)
A68	North of Fala
A7	North of Teriothead at Priesthaugh junction
A7	North of Skippers Bridge, near Langholm
A7	South of Langholm at entrance to Sewage Treatment Works

Table 6.7.3 - Gradient Locations

Road Number	Location
A7	Auchirivock Improvement
A68	Soutra
M8	Livingston
A720	Calder to Baberton
A68	Carter Bar

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
A90	Forth Road Bridge
M90	Queensferry Crossing
A985	Kincardine Bridge
A876	Clackmannanshire Bridge
A90	Forth Road Bridge
M90	Queensferry Crossing
A985	Kincardine Bridge

Potassium acetate treatment shall be applied at the locations specified in Table 6.9.1 including those parts of the Trunk Road 400 metres beyond the limits of each of the Forth Road Bridge and the Queensferry Crossing and 200 metres beyond the limits of each other bridge.

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	Name of street (side of street to be treated)	Details of Footway		Route Centreline Length (m)
				Start	Finish	Category A
1	A68	Jedburgh	Newcastle Road (West)	Oxnam Road	Front of Queen Mary's Building	515
			Bongate/Edinburgh Road (Both)	Front of Queen Mary's Building	Riverside Workshops	900
			Edinburgh Road (East)	Riverside Workshops		200
2	A68	Earlston	Melrose Road (West)	"Leader Cottage" (13025/74/1060)	"Kirkgate Cottage" (13025/74/1220)	160
			Melrose Road/Thorn Street (Both)	"Kirkgate Cottage" (13025/74/1220)	Westfield Road	215

Location Number	Route	Location	Name of street (side of street to be treated)	Details of Footway		Route Centreline Length (m)
				Start	Finish	Category A
			Lauder Road (East)	End of divided section of road (1041/05/280)	"Otford House" (13041/05/440)	160
3	A68	Lauder	East High St (Both)	"Wyndhead Lodge" (13053/05/370)	Kirk Wynd	355
			Market Pl/West High St (Both)	Kirk Wynd	13053/57/210	330
			West High St/Edinburgh Rd (Both)	13053/57/210	"The Haven" (13055/05/115)	545
4	A68	Pathhead	A68 (Both)	"Whippielaw" (13074/64/1110)	Pathhead Primary School main gate (13075/00/105)	105

Location Number	Route	Location	Name of street (side of street to be treated)	Details of Footway		Route Centreline Length (m)
				Start	Finish	Category A
			Main St (Both)	Pathhead Primary School main gate (13075/00/105)	Oxenford Ave (13075/00/645)	545
			Main St (Both)	Oxenfoord Ave (13075/00/645)	Crichton Rd	295
5	A7	Langholm	A7/High St (West)	Glenesk Rd	94 Main St (11004/05/315)	570
			High St (Both)	94 Main St (11004/05/315)	Thomas Telford Rd (bridge)	285
			Townhead/A7 (West)	Thomas Telford Rd (bridge)	11006/05/290	645

Location Number	Route	Location	Name of street (side of street to be treated)	Details of Footway		Route Centreline Length (m)
				Start	Finish	Category A
6	A7	Hawick	Buccleuch Rd (Both)	Langheugh Rd	Second easternmost entry into Hawick High School (11035/05/725)	480
			Buccleuch Rd (South)	Second easternmost entry into Hawick High School (11035/05/725)	Buccleuch Pl	90
			Buccleuch Rd (North)	Second easternmost entry into Hawick High School (11035/05/725)	Buccleuch Pl	90

Location Number	Route	Location	Name of street (side of street to be treated)	Details of Footway		Route Centreline Length (m)
				Start	Finish	Category A
			Buccleuch St (Both)	Buccleuch Pl	Roundabout	225
			Sandbed (Both)	Roundabout	Start of Albert Rd	70
			Albert Rd (Both)	End of Sandbed	Commercial Rd	120
			Commercial Rd (Both)	Albert Rd	Bath St	285
			Commercial Rd (West)	Bath St	Dovemount Pl	415
			Dovemount Pl/Wilton Hill (Both)	Commercial Rd	Fire Station (11039/36/400)	535
			Wilton Hill/A7 (West)	Fire Station (11039/36/400)	"Rose Cottage" (11039/36/770)	385

Location Number	Route	Location	Name of street (side of street to be treated)	Details of Footway		Route Centreline Length (m)
				Start	Finish	Category A
7	A7	Selkirk	Hillside Tce (Both)	Tennis Courts (11048/05/530)	High School Ln	150
			Hillside Tce (North)	High School Ln	11048/60/65	165
			Hillside Tce (South)	High School Ln	11048/60/65	155
			Hillside Tce/Tower St (Both)	11048/60/65	Back Row	220
			Tower St (Both)	Back Row	High St	115
			High St (Both)	Tower St	Ettrick Tce	80
			Ettrick Tce (Both)	High St	Chapel St	105

Location Number	Route	Location	Name of street (side of street to be treated)	Details of Footway		Route Centreline Length (m)
				Start	Finish	Category A
			Ettrick Tce (Both)	Chapel St	Entrance into Factory (11053/05/150)	1280
8	A702	Coulter	A702 (Both)	Bend in road near PO (13501/80/00)	Brae Cottage (13501/80/720)	765
9	A702	Biggar	Coulter Rd (Both)	20 Coulter Rd (13511/05/645)	Park Pl	460
			High St (Both)	Park Pl	B7016	720
			Edinburgh Rd (Both)	B7016	22 Edinburgh Rd (13511/05/2085)	205
			Edinburgh Rd (South)	22 Edinburgh Rd (13511/05/2085)	Springdale (13511/05/2238)	150

Location Number	Route	Location	Name of street (side of street to be treated)	Details of Footway		Route Centreline Length (m)
				Start	Finish	Category A
10	A702	Dolphinton	A702 (Both)	Hillside Gardens	Bend near the Beehive (13525/63/1060)	1040
11	A702	West Linton	Dolphinton Rd/Carlops Rd (Both)	"The Paddock" (13531/05/5855)	Roundabout	960
			Carlops Rd (West)	Roundabout	"Linton Grange" (13533/79/165)	220
12	A702	Carlops	A702 (Both)	"The Old Manse" (13535/05/240)	"The Cottage" (13535/05/860)	635
13	A702	Silverburn	A702 (Both)	60m South West from Hopelands Rd	210m North East from Hopelands Rd	270

Location Number	Route	Location	Name of street (side of street to be treated)	Details of Footway		Route Centreline Length (m)
				Start	Finish	Category A
14	A6091	Tweedbank Roundabout To Kingsknowe Roundabout	A6091 (north side)	A7 Kingsknowe Roundabout (10205/05/0)	Start of Galafoot Bridge (10205/05/329)	329
			A6091 (north side)	Start of Galafoot Bridge (10205/06/0)	End of Galafoot Bridge (10205/06/213)	213
			A6091 (north side)	End of Galafoot Bridge (10205/10/0)	Tweedbank Roundabout (10205/10/451)	451
15	A985	Rosyth	Admiralty Rd/ Both Sides	Kings Rd	M90 Offramps	1220
16	A985	Crombie	Main Rd/ Southern Side	Farm Rd (14620/18/240)	14620/18/900	660
17	A977/ A985	Kincardine	A977- Feregait- Toll Rd/ Both Sides	Broomsknowe Dv	Easter Kincardine (15902/05/365)	2120

Location Number	Route	Location	Name of street (side of street to be treated)	Details of Footway		Route Centreline Length (m)
				Start	Finish	Category A
18	A90	Plaza		Forth Bridge	Echline S/B off slip	60
19	A90	Echline		S/B off slip from A90	Echline roundabout	300
20	A90	Echline		Echline roundabout N/B on slip	Plaza	230
21	A90	Echline		Plaza	Forth Bridge	170
22	A90	Forth Bridge		South end of Bridge	North end of Bridge	2500
23	A90	Welldean		North end of Bridge	N/B off slip to Ferrytoll	750
24	A90	Ferrytoll		Start of N/B off slip at Ferrytoll	End of slip at roundabout	200

Location Number	Route	Location	Name of street (side of street to be treated)	Details of Footway		Route Centreline Length (m)
				Start	Finish	Category A
25	A90	Ferrytoll roundabout		Roundabout section		220
26	A90	Ferrytoll		Start of S/B slip on Ferrytoll	Top of S/B slip to A90	130
27	A90	Ferrytoll		S/B A90 from Ferrytoll on slip	A90 S/B at north end of Bridge	850
28	A90	Forth Bridge		North end of Bridge	South end of Bridge	2500
29	A90	Plaza		South end of Bridge	Plaza area	200
30	A90	Plaza Area	Steps up and down to south underpass and underpass	South end of Bridge	Plaza area	40
31	A90	North Queensferry	Steps up and down to north abutment	North end of Bridge		30

Location Number	Route	Location	Name of street (side of street to be treated)	Details of Footway		Route Centreline Length (m)
				Start	Finish	Category A
32	A90	Car Park	Ramp and steps from Car Park to A90 (Toll Plaza)	Plaza area	Plaza area	15
33	A90	Echline	Link path from A90	Ferrymuir Gait		10
34	A90	Forth Bridge Compound	Car Park Area	Viewing area including office entrance		30
35	A90	Forth Bridge Compound	Footpath adjacent service road	South abutment		300
36	A90	Ferrymuir Gate		Ferrymuit Gait		375
37	A90	Carpark Footways		North end of Bridge		Treated by Spreader

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.