

The **Bradford** Winter Strategy

David John Mazurke

Group Manager

Highways Maintenance

City of Bradford M.D.C.

Ready for 2018-2019 Winter



Winter 2018-2019

- Priority 1 Route = 712 Miles
- 37 Treatments @ 15gms and 20gms
- Priority 2 = Residential Areas
- 9 Treatments
- Priority 4
- Night Patrols
- 48 Treatments




2018-2019

- Warmest February Day on record 20 Degrees 20/2
- 15/2 to 4/3 RST well above zero
- Last full grit 17/3
- Climate Change
- Records in summer 2019 breaking records

29/01/2019 16:17:55 BOSCH

New view
New view (1)

Thornton Rd/Halifax Rd



Thornton Rd/Halifax Rd

- Output 1
- Output 1
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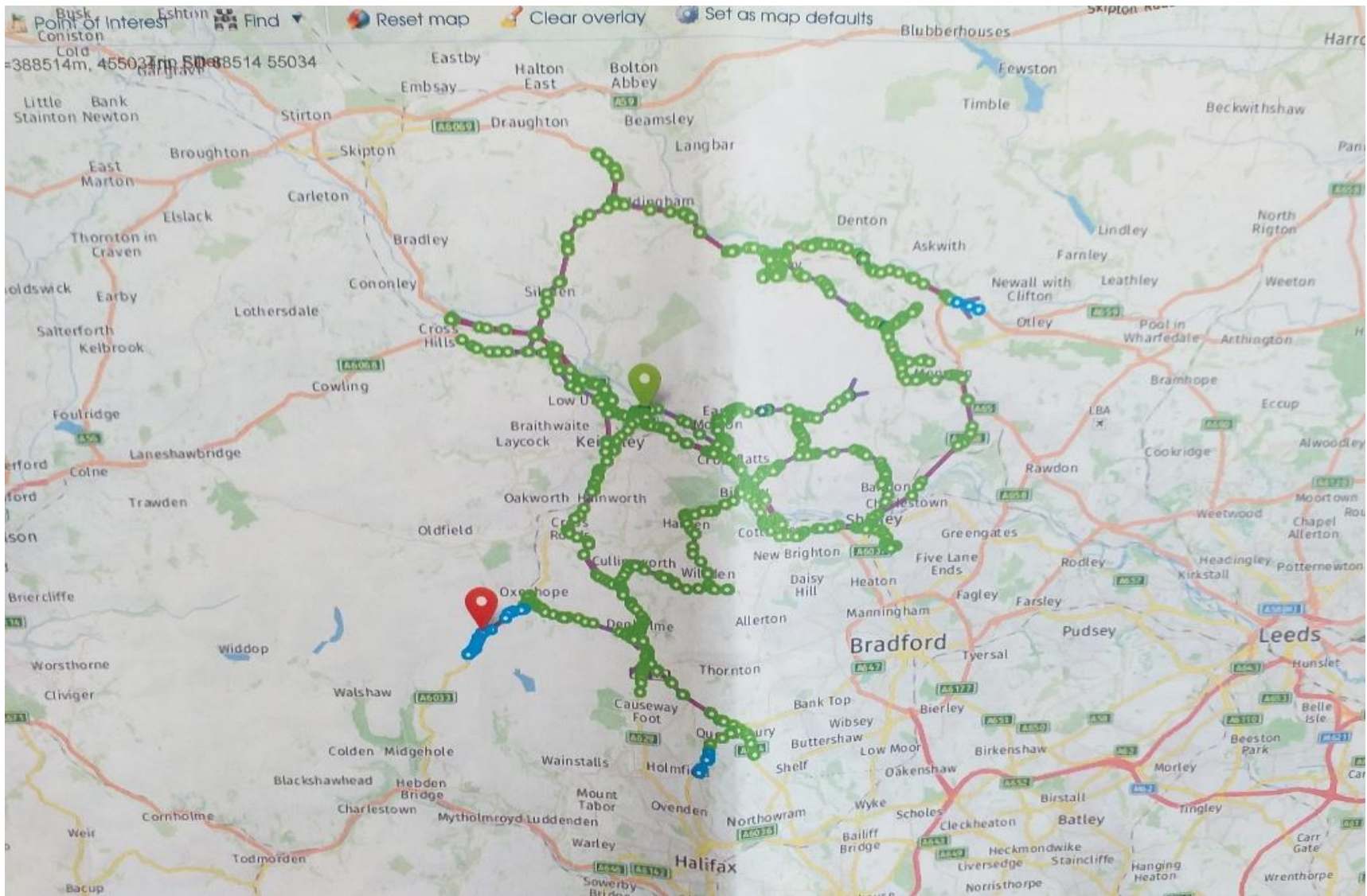
Time	Device	Events
29/01/2019 14:59:26	Queensbury	10.140.73.9 is connected
29/01/2019 14:58:17	Queensbury	Connection to 10.140.73.9 (IP bullet 4000 HD) was lost
		Connection to 10.140.81.433 (IP bullet 4000 HD) failed

New view (1)



- Output 1
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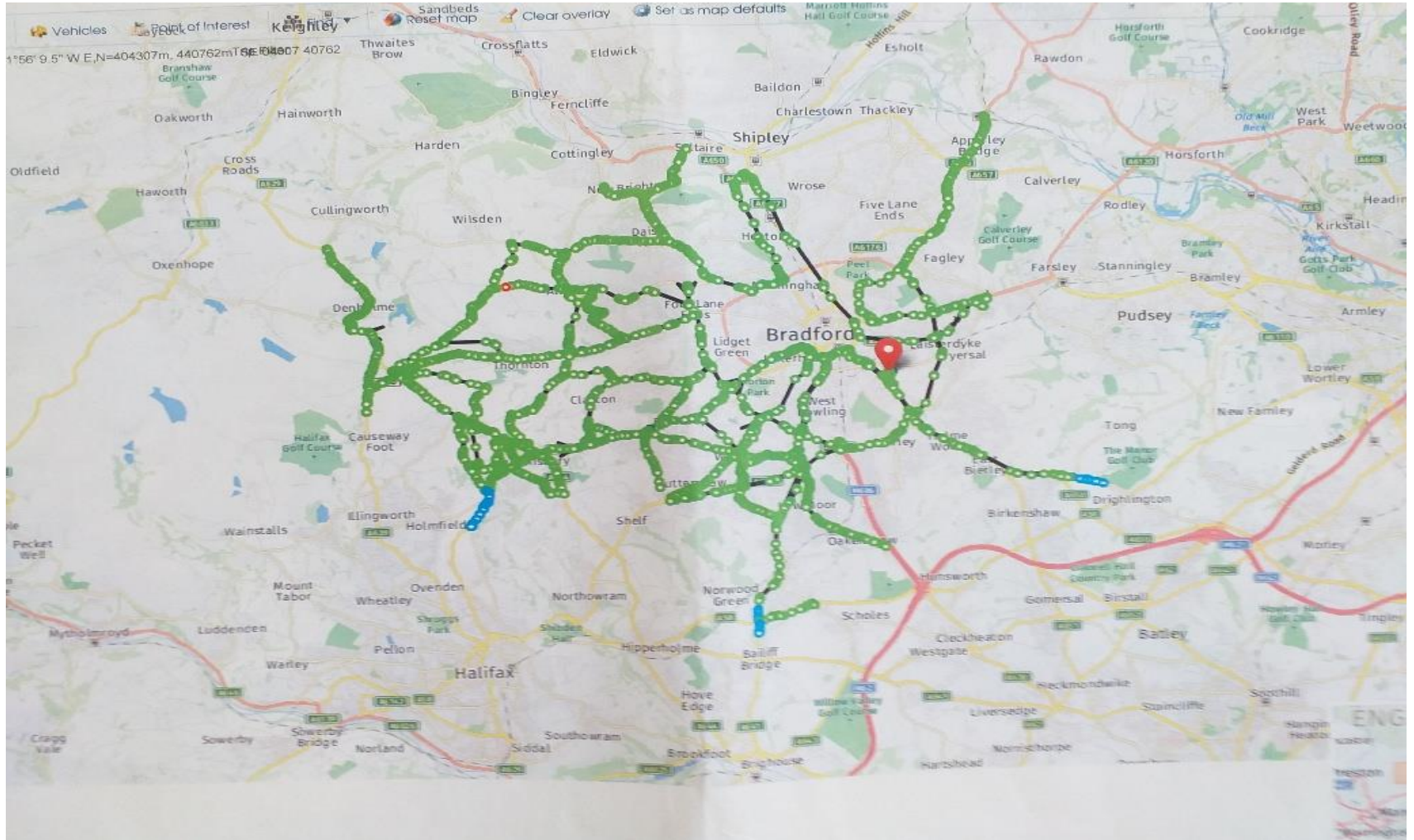
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Night Patrol

- 1 or 2 Gritters Treating designated routes on High ground
- Used when Temps are marginal and dry
- Only cold on High ground above 300m
- High Speed Dual carriageways
- 160 or 300 mile network
- Commence at 21;00 or 22;00
- Finish 07:00
- Sub-contractor Drivers using hired gritters

2nd Night patrol



- Night Patrol called emergency gritting on 3 occasions
- 17th December 05:00
- 1st February - 05:25 Light Snow showers turned heavy high ground
- 11th March- 06:25 due to snow
- NO TRAFFIC DISRUPTION
- Night Patrol costs were £55k

West Yorkshire Comparison

ROCK SALT USED 2018 - 2019				
District	Tonnes	% Network	Full Grits	Night Patrols
Calderdale	8,600	60%	55	23
Leeds	8,800	43%	48	
Kirklees	4500	53%	50	114
Bradford	6,500	62%	37	47
Wakefield	3,341	40%	46	

date time	weather type	precip. prob. (%)	precip. (mm/hour)	Snow (cm/hour)	snowfall height (m)	temperature 1.5m (°C)	road		dewpoint (°C)	rel. hum. (%)	cloud mass (h/8)	wind direction	windspeed (mph)	windgust (mph)
							temp. (°C)	condition						
10:00	partly cloudy	20	<0.1	0	265	1.9	8.8	D	-0.7	83	5/8	rw	9.2	15.5
11:00	partly cloudy	20	<0.1	0	320	2.5	11.7	D	-0.6	80	5/8	wnw	9.2	16.1
12:00	partly cloudy	20	<0.1	0	365	3.1	14.4	D	-0.6	77	5/8	wnw	9.2	16.9
13:00	partly cloudy	25	<0.1	0	415	3.6	16.3	D	-0.6	74	5/8	wnw	9.2	17.6
14:00	partly cloudy	25	<0.1	0	485	4.0	17.2	D	-0.5	72	4/8	wnw	10.4	18.0
15:00	partly cloudy	25	<0.1	0	510	4.2	17.2	D	-0.6	71	4/8	→ w	10.4	18.6
16:00	partly cloudy	30	<0.1	0	510	4.2	16.3	D	-0.6	71	4/8	→ w	10.4	19.3
17:00	partly cloudy	30	<0.1	0	485	3.9	13.9	D	-0.6	72	4/8	↗ wsw	10.4	19.9
18:00	light sleet shower	30	<0.1	0	420	3.5	10.0	Sl	-0.5	75	4/8	↗ wsw	10.4	20.1
19:00	light sleet shower	35	<0.1	0	385	2.9	6.1	Sl	-0.4	79	4/8	↗ sw	10.4	20.0
20:00	light snow shower	40	0.2	0	350	2.3	3.5	S	-0.4	82	4/8	↗ ssw	10.4	19.9
21:00	snow shower	45	0.4	<0.1	320	1.8	2.0	S	-0.4	85	4/8	↗ ssw	10.4	19.3
22:00	snow shower	50	0.5	0.2	305	1.5	1.1	S	-0.4	87	4/8	↑ s	10.4	18.9
23:00	snow shower	50	0.5	0.3	300	1.2	0.3	S	-0.4	89	5/8	↖ sse	11.5	18.9
Thu 4 April 2019														
00:00	snow shower	55	0.6	0.4	290	1.0	-0.3	S	-0.5	90	5/8	↖ se	11.5	19.0
01:00	snow shower	60	0.4	0.2	295	0.8	-0.2	S	-0.6	90	5/8	↖ se	11.5	19.2
02:00	light snow shower	60	0.1	<0.1	300	0.6	0.1	S	-0.6	91	5/8	↖ se	12.7	19.4
03:00	light snow shower	60	0.1	<0.1	295	0.5	0.2	S	-0.6	92	5/8	↖ se	12.7	20.1
04:00	light snow shower	60	<0.1	<0.1	290	0.5	0.3	S	-0.5	93	5/8	↖ ese	13.8	21.1
05:00	light snow shower	60	0.1	<0.1	290	0.4	0.2	S	-0.5	94	6/8	↖ ese	13.8	22.0
06:00	light snow shower	60	0.1	<0.1	280	0.4	0.1	S	-0.4	94	6/8	↖ ese	13.8	22.9
07:00	light snow shower	60	<0.1	<0.1	280	0.6	0.4	S	-0.2	94	6/8	↖ ese	15.0	23.6
08:00	light snow shower	60	0.2	<0.1	300	1.0	1.6	S	0.0	93	6/8	↖ ese	15.0	24.1
09:00	light snow shower	65	0.3	<0.1	315	1.6	3.3	S	0.3	91	6/8	↖ ese	15.0	24.6
10:00	snow shower	65	0.4	<0.1	345	2.2	5.3	S	0.5	89	6/8	↖ ese	16.1	25.1
11:00	light sleet shower	65	0.4	0	380	2.7	7.0	Sl	0.6	86	6/8	↖ se	16.1	25.7
12:00	light sleet shower	70	0.4	0	415	3.3	8.4	Sl	0.7	83	6/8	↖ se	16.1	26.1
13:00	light sleet shower	70	0.3	0	475	3.7	9.3	Sl	0.8	81	6/8	↖ se	16.1	26.4
14:00	light rain shower	70	0.2	0	600	4.1	9.7	R	0.9	80	6/8	↖ se	16.1	26.4
15:00	light rain shower	65	0.2	0	600	4.5	9.7	R	0.9	78	6/8	↖ se	16.1	25.9
16:00	light rain shower	65	0.2	0	600	4.7	9.3	R	0.9	76	6/8	↖ se	15.0	25.3
17:00	light rain shower	65	0.2	0	600	4.6	8.3	R	0.9	77	6/8	↖ se	15.0	24.4
18:00	light rain shower	60	0.2	0	600	4.2	6.6	R	0.9	80	6/8	↖ se	13.8	22.9
19:00	light rain shower	55	<0.1	0	600	3.7	4.9	R	1.0	83	6/8	↖ se	12.7	21.1



Cold Spell Dry- April 2019

- Night Patrol on network 5 nights
- How many Councils and Contractors gritted in April on full network
- Cost of Full Treatment about £10k
- Night Patrol 1 treatment cost £1k

issue: Tuesday 2 April 22:00

date time	weathertype	precip-prob. (%)	precip (mm/hour)	Snow (cm/hour)	snowfall height (m)	temperature 1.5m (°C)	road temp. (°C)	condition	dewpoint (°C)	rel. hum. (%)	cloud iness (8/8)	wind direction	windspeed (mph)	windgust (mph)
Wed 3 April 2019														
00:00	mostly cloudy	20	0.0	0	330	0.8	2.6	D	-0.6	90	6/8	wmw	9.2	9.9
01:00	snow shower	55	0.5	0.3	340	1.0	1.5	S	-0.6	89	5/8	nw	6.9	10.8
02:00	partly cloudy	15	0.0	0	340	0.9	1.3	W	-0.6	90	5/8	nw	5.8	12.0
03:00	partly cloudy	10	0.0	0	335	0.7	0.7	W	-0.5	91	5/8	nw	6.9	11.9
04:00	partly cloudy	10	0.0	0	335	0.5	0.2	W	-0.6	93	5/8	wmw	6.9	12.0
05:00	partly cloudy	15	0.0	0	330	0.4	-0.1	I	-0.7	92	5/8	wmw	8.1	13.0
06:00	partly cloudy	20	0.0	0	320	0.3	-0.3	I	-0.9	92	5/8	wmw	8.1	14.3
07:00	mostly cloudy	25	0.0	0	315	0.4	0.2	W	-0.9	91	6/8	wmw	9.2	15.1
08:00	light snow shower	35	<0.1	<0.1	300	0.7	1.9	S	-0.7	91	6/8	wmw	9.2	15.3
09:00	light snow shower	50	0.1	<0.1	275	1.1	3.9	S	-0.6	89	6/8	wmw	9.2	15.3
10:00	light snow at times	55	0.1	0	270	1.7	5.4	S	-0.6	85	7/8	wmw	9.2	15.3
11:00	light snow at times	50	0.1	0	310	2.2	6.9	S	-0.6	82	7/8	wmw	9.2	15.9
12:00	Light rain and snow	40	<0.1	0	365	2.7	8.5	SI	-0.8	78	7/8	w	9.2	16.3
13:00	light sleet shower	30	<0.1	0	430	3.3	10.0	SI	-0.9	74	6/8	w	9.2	16.3
14:00	mostly cloudy	30	<0.1	0	470	3.6	11.4	W	-0.9	73	6/8	w	9.2	15.9
15:00	mostly cloudy	30	<0.1	0	495	3.8	12.3	D	-0.8	72	6/8	wsw	8.1	15.2
16:00	mostly cloudy	30	<0.1	0	500	3.8	12.2	D	-0.8	72	6/8	sw	8.1	14.6
17:00	mostly cloudy	30	<0.1	0	485	3.6	11.4	D	-0.6	74	6/8	sw	8.1	15.2
18:00	mostly cloudy	30	<0.1	0	470	3.3	9.0	D	-0.5	76	6/8	ssw	8.1	16.3
19:00	light sleet shower	35	<0.1	0	450	2.8	6.0	SI	-0.4	80	5/8	s	9.2	17.0
20:00	light sleet shower	40	<0.1	0	405	2.3	4.1	SI	0.0	85	5/8	se	9.2	17.3
21:00	light sleet shower	40	0.1	0	375	1.9	3.0	SI	0.5	90	6/8	ese	9.2	16.8
22:00	light sleet shower	35	<0.1	0	360	1.6	2.5	SI	0.8	95	6/8	e	10.4	16.5
23:00	light snow shower	35	<0.1	0	350	1.4	2.1	S	0.9	96	6/8	e	9.2	16.3
Thu 4 April 2019														
00:00	mostly cloudy	30	<0.1	0	340	1.3	1.8	W	0.9	97	6/8	ene	9.2	15.8
01:00	mostly cloudy	25	<0.1	0	330	1.1	1.6	W	0.8	97	6/8	ene	9.2	15.2
02:00	mostly cloudy	20	0.0	0	320	0.9	1.3	W	0.6	97	6/8	ene	9.2	15.3
03:00	mostly cloudy	15	0.0	0	315	0.8	1.1	W	0.4	97	6/8	ene	9.2	15.5
04:00	mostly cloudy	15	0.0	0	310	0.8	0.9	W	0.3	97	6/8	ene	9.2	15.8
05:00	mostly cloudy	10	0.0	0	305	0.6	0.7	W	0.3	98	6/8	ene	9.2	16.2
06:00	mostly cloudy	10	0.0	0	300	0.5	0.5	W	0.5	100	6/8	ene	9.2	16.5
07:00	mostly cloudy	15	0.0	0	300	0.7	0.8	W	0.5	99	6/8	e	9.2	16.8
08:00	mostly cloudy	15	0.0	0	300	1.1	2.3	W	0.6	96	6/8	e	10.4	17.1
09:00	mostly cloudy	15	0.0	0	310	1.8	4.8	W	0.6	92	6/8	e	11.5	18.6
10:00	mostly cloudy	10	0.0	0	335	2.6	7.5	W	0.5	85	6/8	e	12.7	20.4

2015 - 2016		NIGHT PATROL			Bradford ✓	
Start Date: 3. 14. 19		Finish Date: 4. 14. 19				
Driver Name: Brett Snowden			Signature: <i>B.S.</i>			
Vehicle Fleet No: 415						
Vehicle reg No:						
Mileage Start		Mileage Finish		Gritting		
2920		3042		Yes	No	Salt Used
Time	Location	Conditions		Yes	No	Salt Used
22:00	HLY	Dry wet	5°C	✓		
23:00	Dunholme	Dry	3°C	✓		
00:00	Stecton	Dry	4°C	✓		
01:00	menston	Dry	4°C	✓		
02:00	HLY	Dry	4°C	✓		
03:00	arenhope	Dry	2°C	✓		
04:00	skanbray	Dry	2°C	✓		
05:00	oakworth	Dry	2°C	✓		
06:00	Dunholme	Dry	2°C	✓		
07:00	HLY	Dry	4°C	✓		
08:00						
					Total Salt Used	(5TON)

BS




Ikley Town Council
Grit Bin

GRIT-SALT

Parish Council Grit Bins

- Grit Bin £100 plus £50 re-fill
- Ilkley 8
- Bingley 8
- Haworth 5
- Wilsden 4
- Addingham 6



Cold Comfort 2019 – Salt Association

- Supply Chain
- How the UK's rock salt suppliers are ensuring consistency of supply
- Investing in the future
- Demonstrating improvements and efficiencies made in production and supply

Salt Deliveries

- West Yorks concern in October 2018
- Meeting at Bradford and West Yorks partners on 1st November
- Orders made in summer but no deliveries
- Harvest early, feed for animals (Grass killed off due to hot summer)
- 2018-19 Re-Stock was 750,000 Tonnes compared to 400,000 Tonnes

- Compass has 12 Haulage Partners
- Leeds and Kirklees previously with Cleveland Potash but orders could not be met
- Leeds and Kirklees gave Compass an extra order of 46,000 tonnes
- Huge impact on Supply Chain
- Orders to West Yorks not completed until Xmas 2018
- Further Meeting for West Yorkshire Co-Ordination in Feb 2019

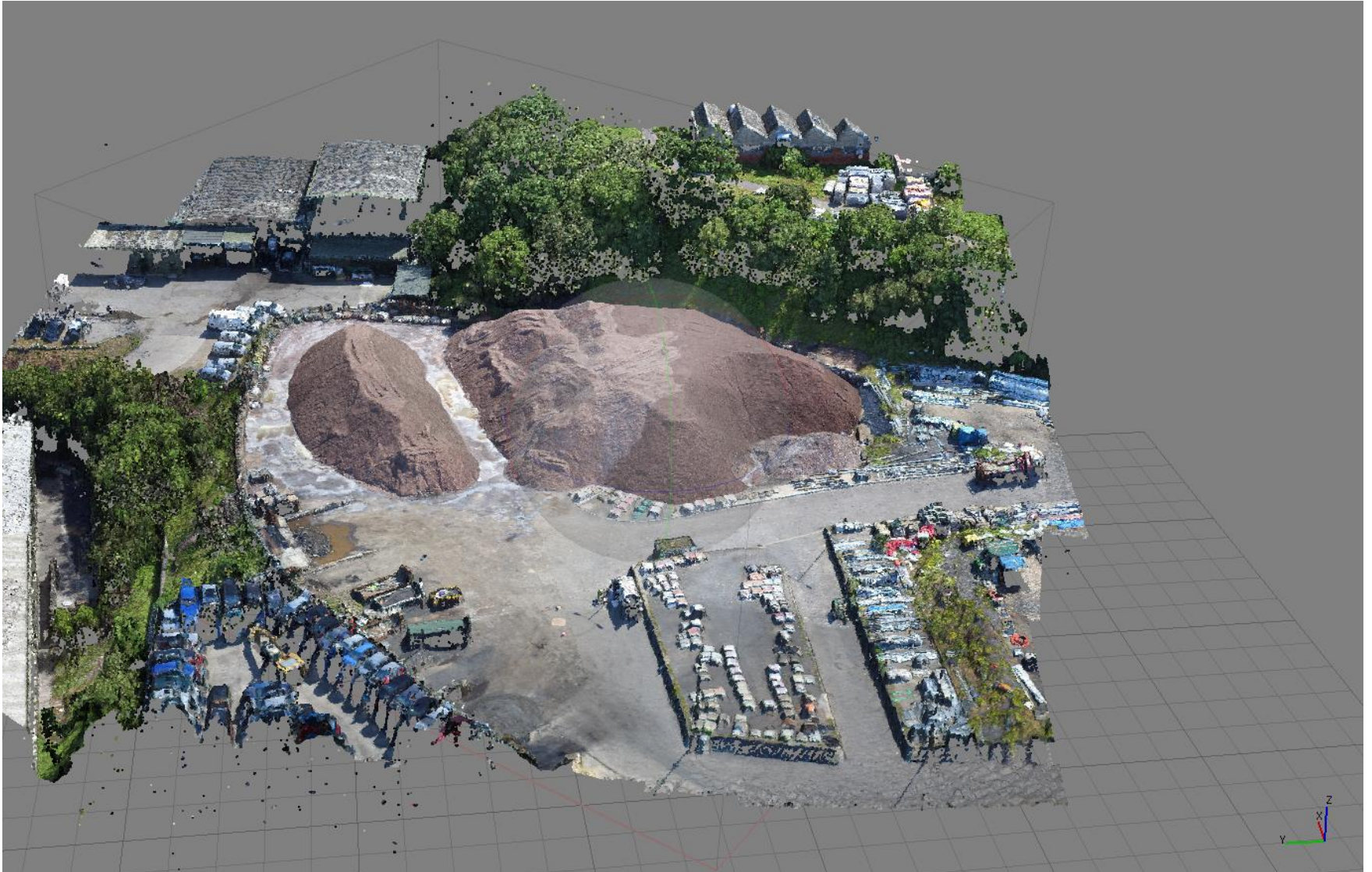


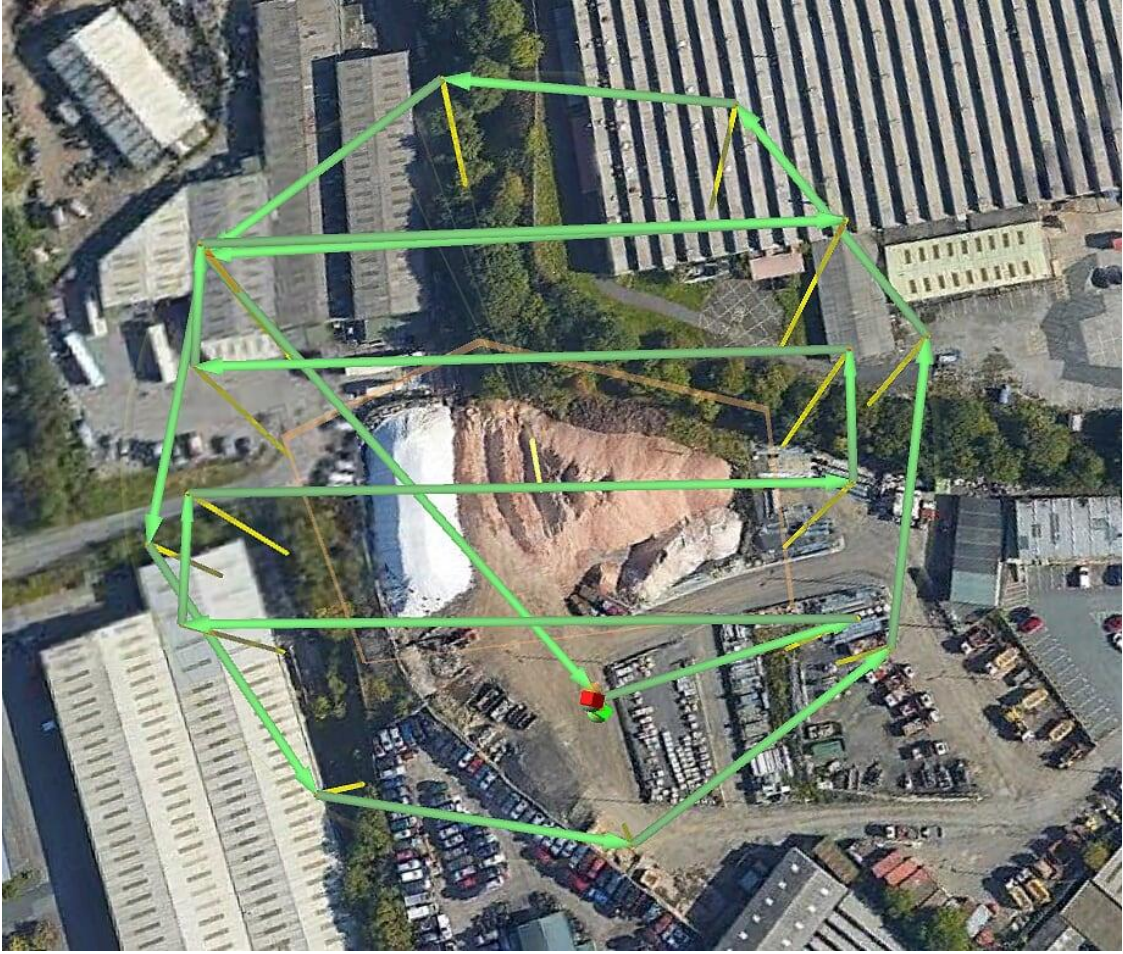
Gritting Costs

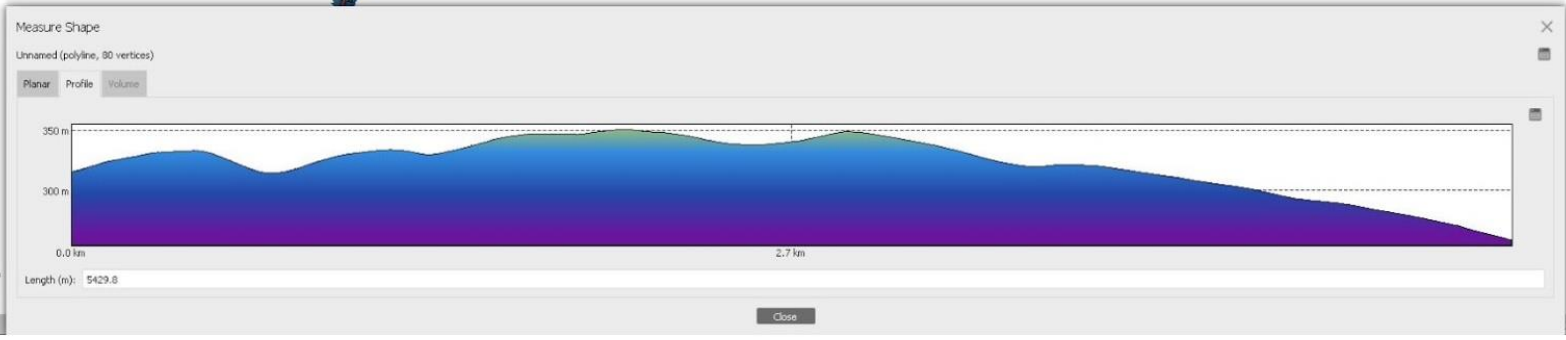
Hire v. Buy

- Gritter 2012 Purchase Price £88,775.00
- Lump sum maint. £11,751.36 p.a.
- Prudential Cost £15,903.00 p.a.
- SLA £13,985.00 p.a.
- 7 Year Prudential Borrowing
- Staggering £291,478.27 Cost

Drone Technology







10) Queensbury Site Photo.jpg

Queensbury Mapping Screenshots

Files

- 1) QueensburyDEM-V1.J...
- 2) QueensburyDEM-Elev...
- 3) Queensbury-VisualM...
- 4) Queensbury-3DModel...
- 5) Queensbury-3DModel...
- 6) Queensbury-3DModel...
- 7) Queensbury-3DModel...
- 8) Queensbury-3DModel...
- 9) Queensbury-Measure...
- 10) Queensbury-3DModel...



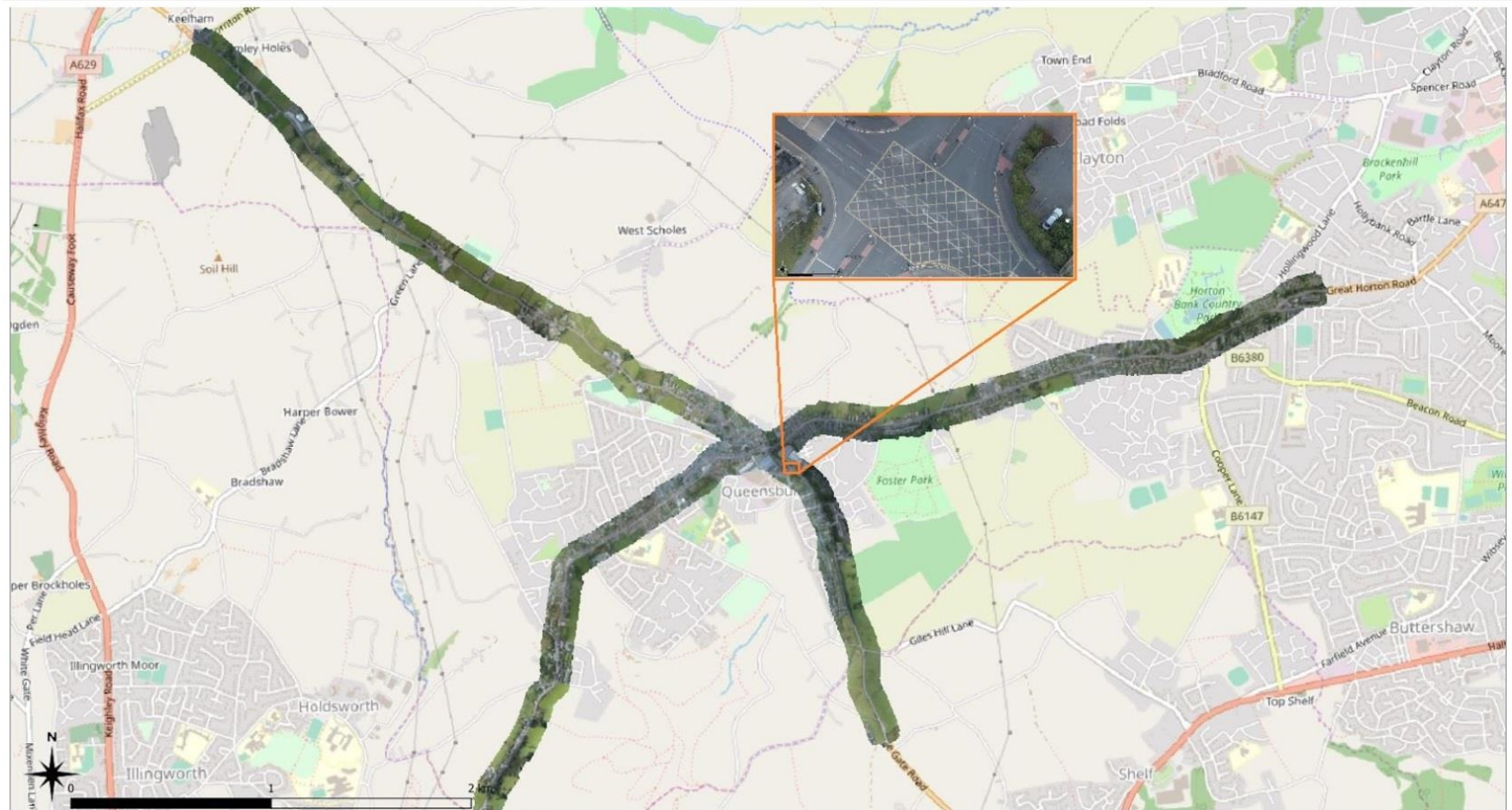
DOWNLOAD ALL

Name ↑

- 1) QueensburyDEM-V1.J...
- 2) QueensburyDEM-Elev...
- 3) Queensbury-VisualM...
- 4) Queensbury-3DModel...
- 5) Queensbury-3DModel...
- 6) Queensbury-3DModel...
- 7) Queensbury-3DModel...
- 8) Queensbury-3DModel...
- 9) Queensbury-Measure...
- 10) Queensbury-3DModel...

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Perspective 30°



faces: 999,999 vertices: 503,937



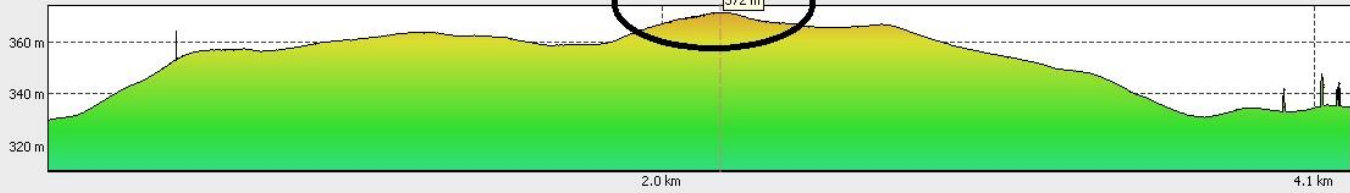
1.65 m

86.3 cm

Measure Shape

Unnamed (polyline, 79 vertices)

Planar Profile Volume



Length (m): 5330.5

Close

386 m
317 m
248 m

24.8 m





Prince Andrew
'knows what
he's done'
ACCUSER'S ANGER: PAGE 9

MIRROR SHOCK REPORT

Children play in the sea in a 22C heatwave.. yet this is a town 700 miles north of the Arctic Circle. It should be just 8C, but now ancient glaciers are vanishing, threatening a global rise in sea levels which will hit Britain. A compelling despatch from Greenland that everybody must read...



TOO WARM
Boys swim off sunny Greenland. Below, a lone, shrinking iceberg. Pictures: ADAM O'NEILL



OUR WORLD IS IN MELTDOWN



EXCLUSIVE: NADA FARHOUD ON THE CLIMATE CRISIS FRONT LINE - PAGES 2,3,4&5