Royal Berkshire Fire & Rescue Service

Analysis and Modelling Support

Modelling and Analysis Work, February to May 2010

Final Report

ORH

Introduction

1. ORH has been asked by RBFRS to provide various analytical and modelling support (initially given as a specified list of tasks) in order to inform work being undertaken by RBFRS around retained viability.

2. A series of previous papers have been produced incorporating analyses of incident rates and draft modelling runs around Greenfield options and fixed configurations. This paper builds on the work in these papers and also focuses on a proposed option, which was agreed upon through consultation between ORH and RBFRS.

Analysis of Hourly Incident Profiles (Tasks 10, 11 & 12)

3. The annual number of incidents by type for 2008/09 are given in Appendix **A1**. This is shown by hour to give the annual total and also the average hourly profile for each incident type attended by RBFRS. In 2008/09, RBFRS pumping appliances attended 10,078 incidents, and average 27.6 incidents per day.

4. The average hourly profiles are graphed in Appendix **A2**. Incidents are divided by category and the profiles are shown for all incidents (**A2a**), all operational incidents (**A2b**), fires (**A2c**) and special service incidents (**A2d**). In all cases, the average RDS unavailability for 2008/09 is plotted against the demand levels.

Modelling Changes to the Current Deployment (Task 14 & Tasks 5 to 9)

5. Appendix **B1** shows the modelled performance impact of all RDS crews being both 100% and 0% available during daytime hours against 2008/09 response standards. Performance is shown for daytime hours only and for the impact across the 24/7 period.

6. If all RDS crews were 100% available during the day, the attendance performance during this period would increase by 3.0% across Berkshire at the current attendance standard for dwelling fires. The performance of the first appliance to RTCs would improve by 3.1% at the 11-minute target.

7. The impacts for individually closing three RDS stations (Pangbourne, Wargrave and Cookham) are shown in Appendix **B2**. An adjusted base position has been used to incorporate planned changes to crewing arrangements (at Wokingham

and Windsor) and to assume 100% RDS availability in order to provide a relevant comparison of options.

8. The modelling shows that closing Pangbourne (**B2a**) would have the most significant effect on performance across Berkshire, followed by Wargrave (**B2b**) and then Cookham (**B2c**).

9. The combined impact of closing these three RDS stations against the adjusted base position is shown in Appendix **B3**.

Greenfield Optimisation Runs (Tasks 1 & 2)

10. The ORH optimisation model (OGRE) has been used to quickly identify greenfield locations across Berkshire for between 4 and 16 WDS units.

11. Two optimisation criteria were considered: maximising the percentage of first appliance responses to Dwelling Fires and RTCs within 8 and within 10 minutes.

12. In order to compare the large range of deployment options (and consider both optimisation criteria), these OGRE runs were undertaken using a rapid assessment method and therefore should be considered only as indicative results.

13. Initial results identified using 'first in 8' as the more robust approach for this greenfield optimisation. The maps of the greenfield locations are presented in Appendices **C1a** to **C1m**.

14. ORH's Fire Simulation Model (FSM) was then used to measure appliance response performance to all incidents for each deployment option (see Appendix **C2**). The results indicate that 14 WDS units are needed to achieve a higher level of performance (against all standards) than measured for both current performance and the 'adjusted base' position.

15. Appendices **C3** and **C4** consider how 14 WDS crews could be optimally deployed across Berkshire at greenfield locations. For these options, more detailed optimisation runs were performed.

16. Two options are presented here, with 12 of the 14 locations being consistent in the two deployments (see **C3a** and **C3b**). Option 2 places a WDS unit in Windsor.

17. The modelled performance for the two options is very similar across all response types. When compared to the adjusted base position, both options provide small improvements for the first attendance to Dwelling Fires. The greenfield options provide a significantly quicker response in terms of the first appliance attendance to RTCs. The adjusted base position provides faster second appliance responses to Dwelling Fires than either greenfield option.

18. Appendices **C5** and **C6** repeat this modelling process for considering how 15 WDS crews would be optimally deployed across Berkshire. Again, two options are repeatedly put forward through OGRE modelling, with one of the options including a WDS unit at Windsor.

19. The options for 15 crews both place an extra appliance at Junction 13 of the M4 (Chieveley) when compared against the options for 14 crews. The impact of this additional appliance is more significant in terms of the improvement to performance standards for RTCs than Dwelling Fires.

Additional WDS Appliances (Tasks 3 & 4)

20. OGRE has been used to consider where additional WDS appliances would be optimally located around the existing 10 WDS locations in Berkshire (including Wokingham and excluding Windsor). Using 'first in 8' was again found to be the more robust optimisation approach.

21. The map at Appendix **D1** indicates where additional WDS stations would be optimally located around the current 10 WDS sites. The additional sites are completely 'nested', ie, the option for three further locations includes the first, second and third additional sites.

22. The modelling results are presented in Appendix **B2**. For the purposes of this modelling, Slough has been modelled with two pumps (as current deployment, see **B2a**) and one pump (see **B2b**).

23. In both cases, in order to surpass the performance achieved from the adjusted base position, four additional WDS crews are required.

24. In comparison to the options presented for tasks one and two, the first response to RTCs is significantly poorer from the same number of locations; first appliance attendance to Dwelling Fires is very similar.

Closing 3 RDS Stations & Adding Two Day-Only Appliances (Task 15)

25. Modelling Paper 2 (produced on 25th March 2010) presented two options for locating two additional WDS pumps (available 0800-1600, weekday only) with the assumption that Stations 7, 9 and 12 are all closed.

26. It was agreed with the RBFRS that the option presented in Appendix **C1b** in this previous paper (and replicated here at Appendix **E1a**), was the most suitable option to pursue. This option gives one additional appliance close to Junction 12 of the M4 (Theale) and a second crew located at Knowl Hill on the A4. This option is referred to as the 'Proposed Solution (Task 15)'.

27. The modelling results presented in the rest of Appendix E compare this option to a 'Current + 10 & 13' option, with the new deployments at Wokingham and Windsor in place and RDS availability at current levels (as shown in Appendix **E1b**). This has been necessary in order to produce a fair comparison; the addition of two new WDS resources (with retained support officers) will be intrinsically linked to increasing RDS availability to 100%.

28. Full simulation results are presented for the 24/7 period (**E2**), and for the day (**E3**), the evening (**E4**) and the night (**E5**). In each case, the modelled performance distributions are shown for the first and second appliances to Dwelling Fires and the first appliance to RTCs.

29. For each modelling period, a map is shown in each appendix indicating areas where the average first appliance attendance times are modelled to increase and decrease under the new scenario. Areas shown in blue on each map highlight those regions of Berkshire where the average attendance times would be improved in comparison to the 'Current + 10 & 13' configuration. The darker colours on the map indicate the most significant changes to response times.

30. Appendix **E6** shows how average and maximum response times would be expected to change in the station grounds of the three stations to be closed under this option. The results are shown by period of the day for the first appliance response times to Dwelling Fires and RTCs. The results for Pangbourne station ground (see **E6a**) show the average response times decreasing to both incident types during the day, but increasing in the evening and at night. This pattern is also observed for Wargrave and Cookham station grounds. For all three station grounds, the average annual number of incidents which will be affected are small.

31. The comparison of maximum response times for each station ground highlights the change in the longest response times observed under the Proposed Solution compared to Current + 10 & 13 configuration.

32. Appendix **E7** provides a breakdown of the number of incidents (by station ground) receiving quicker and slower responses when comparing the Proposed Solution to the Current + 10 & 13 configuration. The average annual number of incidents which would receive a response in a slower time, the same time or a quicker time are shown in **E7a**; the percentage of incidents are shown in **E7b**. Overall, 4.9% of Dwelling Fires and 8.7% of RTCs would receive a quicker first appliance response under the Proposed Solution.

Fixed & Unfixed Station Location Modelling (Second Mapping Specification)

33. Appendix **F** considers optimised greenfield WDS locations around different sets of fixed stations and appliances. Each option fixed eight of the current WDS stations, but leaves the Wokingham Road and Dee Road stations as unfixed. The options which have been appraised, and the optimum sites chosen, are given in Appendix **F1**.

34. For each option modelled, a map is provided which shows the locations of the fixed and unfixed stations and the optimum sites identified using OGRE. The response distributions compare the modelled options with the Current + 10 & 13 configuration in terms of the first and second appliance response to Dwelling Fires and the first appliance to RTCs for the 24/7 period.

35. All of the options involve optimised WDS locations being selected at Node 607 (near to Junction 12 of the M4) and Node 1266 (near to the Loddon Bridge roundabout). In addition, each option models only one WDS appliance at Slough station and there is a reduction in second appliance performance when compared to two in the Current + 10 & 13 configuration (which includes two WDS pumps at Slough).

APPENDICES

A **Analysis of Hourly Incident Profiles** ***(Tasks 10, 11 & 12)***

B **Modelled Impacts of Changes to the Current Deployment** ***(Task 14 & Tasks 5 to 9)***

C **Greenfield Optimisation Runs** ***(Tasks 1 & 2)***

D **Additional WDS Appliances (Tasks 3 & 4)**

E **Closing 3 RDS Stations & Creating Two Additional WDS Appliances** ***(Task 15)***

F **Fixed and Unfixed Station Location Modelling** ***(Second Mapping Specification)***

A Analysis of Hourly Incident Profiles *(Tasks 10, 11 & 12)*

A1 Total and Average Incident Volumes by Hour

A2 Hourly Incident Profiles

- **A2a** All Incidents
- **A2b** All Operational Incidents
- **A2c** Fires
- **A2d** Special Services

Royal Berkshire Fire & Rescue Service

Hourly Incident Profile by Incident Type

One-Year Sample (April 08 to March 09)

These tables show the hourly profile of all incidents attended by RBFRS during 2008/09, broken down by category. The unavailability of all RDS crews by hour is also shown.

Total Incidents by Hour

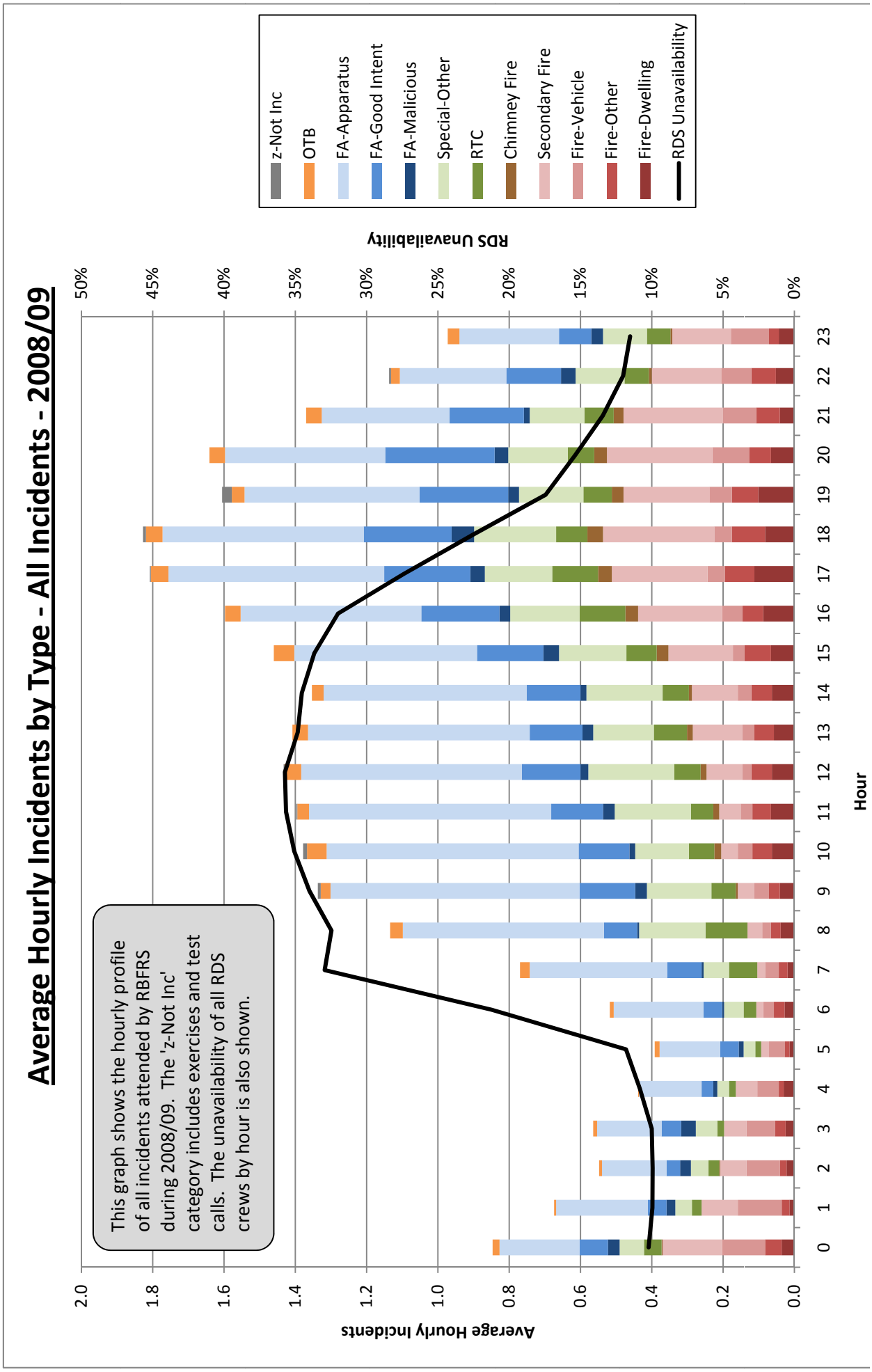
		Hour																							
Incident Type		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	**Total**
Primary Fire	Dwelling	13	5	8	9	11	5	10	7	14	15	23	24	23	21	23	24	32	41	30	37	24	15	19	16	**449**
	Other	17	8	7	11	5	5	11	9	10	11	20	19	21	20	21	27	21	30	34	27	22	24	25	10	**415**
	Vehicle	44	45	34	29	22	16	11	14	9	15	15	12	9	12	14	12	21	18	18	23	38	34	31	39	**535**
Secondary Fire		61	37	27	23	22	8	7	8	15	17	17	22	37	51	47	66	86	98	114	88	108	102	71	60	**1,192**
Chimney Fire		1	0	1	0	0	0	0	0	0	2	7	6	6	6	3	12	13	14	16	12	13	10	3	2	**127**
Special Services	RTC	18	10	11	7	7	6	13	29	43	25	26	23	27	34	27	31	47	47	32	29	27	30	25	24	**598**
	Other	25	17	18	22	12	12	20	26	68	66	55	78	88	62	78	69	71	69	84	66	61	56	50	45	**1,218**
False Alarm	Malicious	12	9	11	15	4	5	2	2	2	12	6	12	8	11	6	16	11	15	23	11	14	6	15	12	**240**
	Good Intent	29	19	14	20	12	19	19	35	34	57	52	53	60	54	55	68	80	88	90	91	112	76	56	33	**1,226**
	Apparatus	82	94	66	66	64	62	92	141	206	255	258	248	226	227	208	187	185	221	206	179	164	131	109	102	**3,779**
Over The Border		7	2	3	4	1	5	4	10	13	10	20	12	17	16	12	21	16	18	17	13	16	16	9	12	**274**
Exercises, Duplicates, Tests		0	0	0	0	0	0	0	0	0	3	4	1	1	0	0	0	0	1	3	10	0	0	2	0	**25**
Total		**309**	**246**	**200**	**206**	**160**	**143**	**189**	**281**	**414**	**488**	**503**	**510**	**523**	**514**	**494**	**533**	**583**	**660**	**667**	**586**	**599**	**500**	**415**	**355**	**10,078**

Average Hourly Incidents

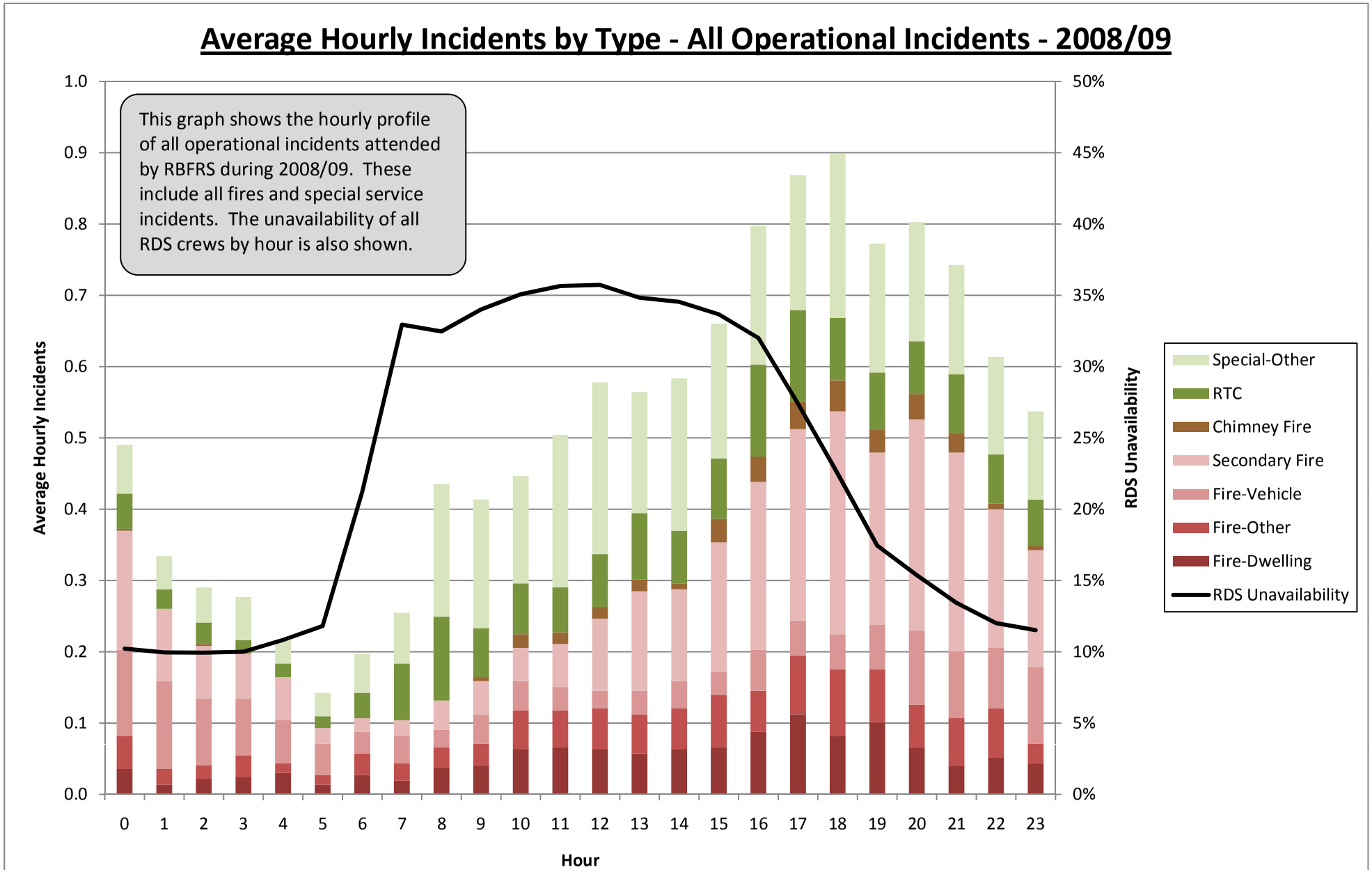
		Hour																							
Incident Type		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	**Total**
Primary Fire	Dwelling	0.04	0.01	0.02	0.02	0.03	0.01	0.03	0.02	0.04	0.04	0.06	0.07	0.06	0.06	0.06	0.07	0.09	0.11	0.08	0.10	0.07	0.04	0.05	0.04	**1.23**
	Other	0.05	0.02	0.02	0.03	0.01	0.01	0.03	0.02	0.03	0.03	0.05	0.05	0.06	0.05	0.06	0.07	0.06	0.08	0.09	0.07	0.06	0.07	0.07	0.03	**1.14**
	Vehicle	0.12	0.12	0.09	0.08	0.06	0.04	0.03	0.04	0.02	0.04	0.04	0.03	0.02	0.03	0.04	0.03	0.06	0.05	0.05	0.06	0.10	0.09	0.08	0.11	**1.47**
Secondary Fire		0.17	0.10	0.07	0.06	0.06	0.02	0.02	0.02	0.04	0.05	0.05	0.06	0.10	0.14	0.13	0.18	0.24	0.27	0.31	0.24	0.30	0.28	0.19	0.16	**3.27**
Chimney Fire		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.02	0.02	0.02	0.01	0.03	0.04	0.04	0.04	0.03	0.04	0.03	0.01	0.01	**0.35**
Special Services	RTC	0.05	0.03	0.03	0.02	0.02	0.02	0.04	0.08	0.12	0.07	0.07	0.06	0.07	0.09	0.07	0.08	0.13	0.13	0.09	0.08	0.07	0.08	0.07	0.07	**1.64**
	Other	0.07	0.05	0.05	0.06	0.03	0.03	0.05	0.07	0.19	0.18	0.15	0.21	0.24	0.17	0.21	0.19	0.19	0.19	0.23	0.18	0.17	0.15	0.14	0.12	**3.34**
False Alarm	Malicious	0.03	0.02	0.03	0.04	0.01	0.01	0.01	0.01	0.01	0.03	0.02	0.03	0.02	0.03	0.02	0.04	0.03	0.04	0.06	0.03	0.04	0.02	0.04	0.03	**0.66**
	Good Intent	0.08	0.05	0.04	0.05	0.03	0.05	0.05	0.10	0.09	0.16	0.14	0.15	0.16	0.15	0.15	0.19	0.22	0.24	0.25	0.25	0.31	0.21	0.15	0.09	**3.36**
	Apparatus	0.22	0.26	0.18	0.18	0.18	0.17	0.25	0.39	0.56	0.70	0.71	0.68	0.62	0.62	0.57	0.51	0.51	0.61	0.56	0.49	0.45	0.36	0.30	0.28	**10.35**
Over The Border		0.02	0.01	0.01	0.01	0.00	0.01	0.01	0.03	0.04	0.03	0.05	0.03	0.05	0.04	0.03	0.06	0.04	0.05	0.05	0.04	0.04	0.04	0.02	0.03	**0.75**
Exercises, Duplicates, Tests		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.03	0.00	0.00	0.01	0.00	**0.07**
Total		**0.85**	**0.67**	**0.55**	**0.56**	**0.44**	**0.39**	**0.52**	**0.77**	**1.13**	**1.34**	**1.38**	**1.40**	**1.43**	**1.41**	**1.35**	**1.46**	**1.60**	**1.81**	**1.83**	**1.61**	**1.64**	**1.37**	**1.14**	**0.97**	**27.61**

RDS Unavailability

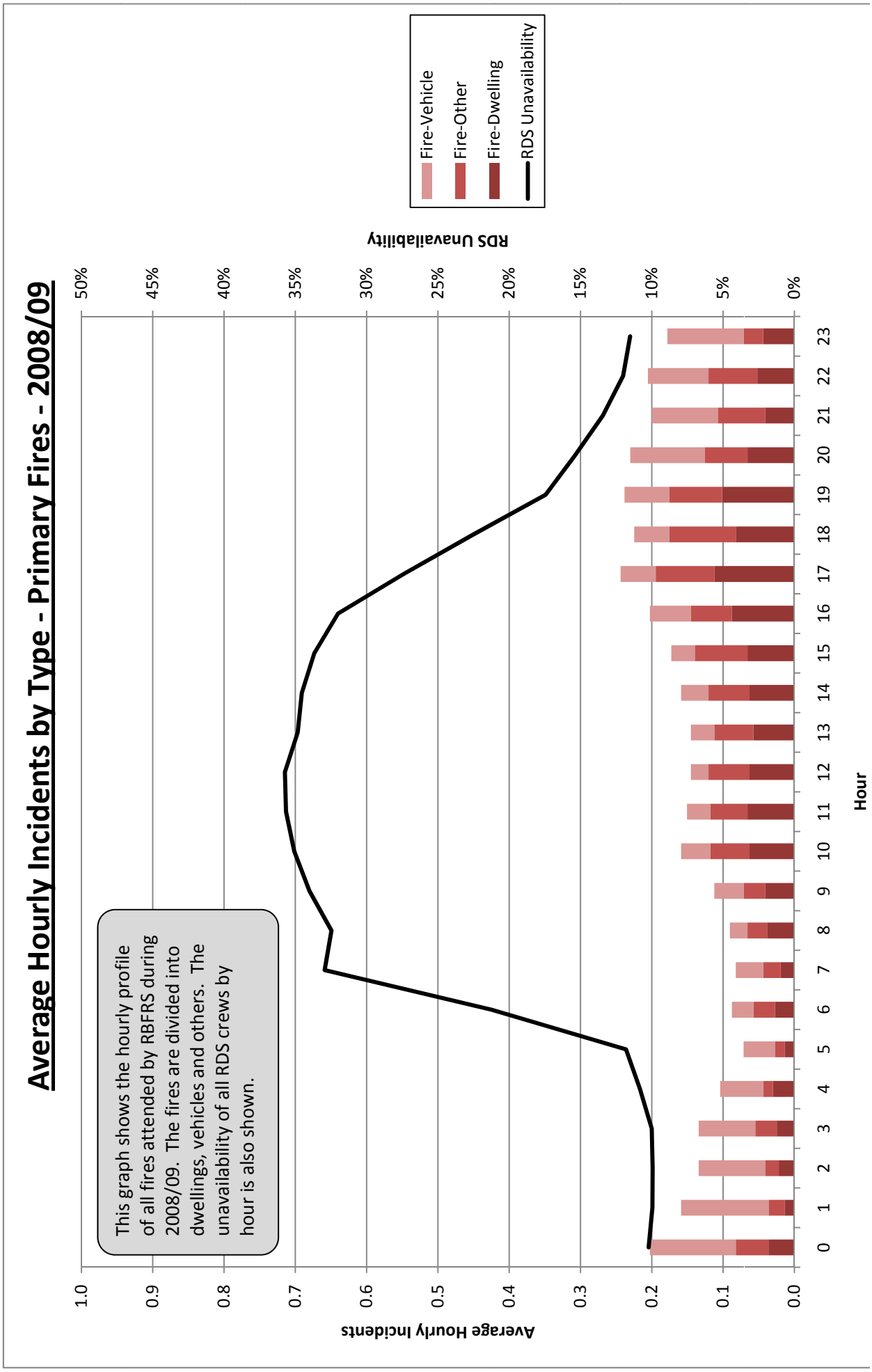
	Hour																							
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Average
RDS Unavailability	10%	10%	10%	10%	11%	12%	21%	33%	32%	34%	35%	36%	36%	35%	35%	34%	32%	27%	22%	17%	15%	13%	12%	12%	23%


Average Hourly Incidents by Type - All Incidents - 2008/09
This graph shows the hourly profile of all incidents attended by RBFRS during 2008/09. The 'z-Not Inc' category includes exercises and test calls. The unavailability of all RDS crews by hour is also shown.
z-Not Inc
OTB
FA-Apparatus
FA-Good Intent
FA-Malicious
Special-Other
RTC
Chimney Fire
Secondary Fire
Fire-Vehicle
Fire-Other
Fire-Dwelling
RDS Unavailability
Average Hourly Incidents
RDS Unavailability
Hour
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0
0%
5%
10%
15%
20%
25%
30%
35%
40%
45%
50%
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

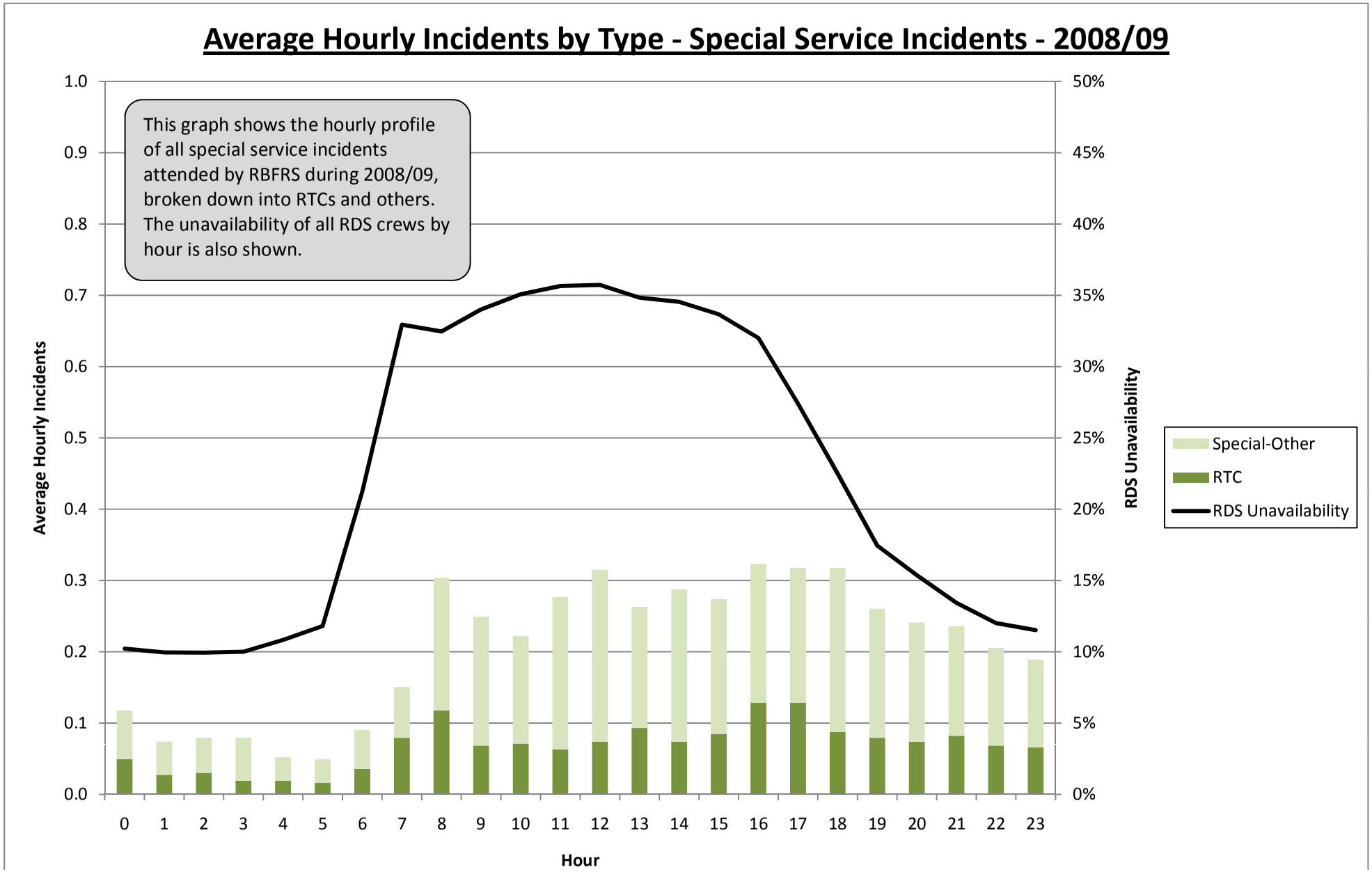
Average Hourly Incidents by Type - All Operational Incidents - 2008/09



A2b


Average Hourly Incidents by Type - Primary Fires - 2008/09
This graph shows the hourly profile of all fires attended by RBFRS during 2008/09. The fires are divided into dwellings, vehicles and others. The unavailability of all RDS crews by hour is also shown.
Fire-Vehicle
Fire-Other
Fire-Dwelling
RDS Unavailability
Average Hourly Incidents
RDS Unavailability
Hour
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
0%
5%
10%
15%
20%
25%
30%
35%
40%
45%
50%
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23

Average Hourly Incidents by Type - Special Service Incidents - 2008/09



A2d

B Modelled Impacts of Changes to the Current Deployment *(Task 14 & Tasks 5 to 9)*

B1 Impact of Changing RDS Availability

B2 Individual Station Closure Impacts

- **B2a** Pangbourne
- **B2b** Wargrave
- **B2c** Cookham

B3 Combined Impact of Three Station Closures

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Modelled Impact of Variable Availability of All RDS Units During the Weekday

Performance Against 08/09 Response Standards

These tables provide the modelled impacts of increasing RDS availability to 100%, or reducing it to 0%, during daytime hours against 08/09 performance levels. The impacts are shown for daytime hours only and the 24/7 period.

Impact During the Day (0800-1600)

Response Standards			08/09 Performance	100% RDS Availability (*)		No RDS Crews Available (**)	
				Modelled Result	Difference	Modelled Result	Difference
Dwelling Fires	1st	in 8 minutes	79.3%	81.1%	1.8%	74.2%	-5.1%
		in 10 minutes	90.5%	92.9%	2.3%	85.2%	-5.4%
	2nd	in 10 minutes	67.2%	70.5%	3.2%	59.9%	-7.3%
		in 12 minutes	83.6%	87.3%	3.7%	75.0%	-8.6%
	Combined	1st in 8 & 2nd in 10	62.9%	66.0%	3.0%	55.4%	-7.5%
		1st in 10 & 2nd in 12	81.0%	84.9%	3.9%	72.6%	-8.4%
RTCs	1st	in 11 minutes	80.4%	83.5%	3.1%	73.5%	-6.9%

Impact Across the 24/7 Period (***)

Response Standards			08/09 Performance	100% RDS Availability (*)		No RDS Crews Available (**)	
				Modelled Result	Difference	Modelled Result	Difference
Dwelling Fires	1st	in 8 minutes	81.9%	82.6%	0.7%	79.9%	-2.0%
		in 10 minutes	91.3%	92.2%	0.9%	89.2%	-2.1%
	2nd	in 10 minutes	68.3%	69.6%	1.3%	65.4%	-2.9%
		in 12 minutes	85.4%	86.8%	1.5%	82.0%	-3.4%
	Combined	1st in 8 & 2nd in 10	63.5%	64.7%	1.2%	60.5%	-3.0%
		1st in 10 & 2nd in 12	81.2%	82.7%	1.5%	77.8%	-3.3%
RTCs	1st	in 11 minutes	79.1%	80.3%	1.2%	76.3%	-2.7%

Notes:

* - Modelled impact of increasing the availability of all RDS crews from 08/09 levels to 100% during daytime hours

** - Modelled impact of reducing the availability of all RDS crews from 08/09 levels to 0% during daytime hours (effectively remove all RDS crews)

*** - 24/7 impacts are calculated against the assumption that RDS availability during evening and night time hours remains at 08/09 levels

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Modelled Impact of Closing Station 7 (Pangbourne)

Performance Against Adjusted Base

Response Standards			Adjusted Base	Modelled Option	Difference
Dwelling Fires	1st	in 8 minutes	82.38%	81.77%	-0.61%
		in 10 minutes	93.72%	93.43%	-0.29%
	2nd	in 10 minutes	71.62%	71.25%	-0.37%
		in 12 minutes	87.82%	87.45%	-0.37%
	Combined	1st in 8 & 2nd in 10	65.78%	65.37%	-0.41%
		1st in 10 & 2nd in 12	84.43%	83.98%	-0.45%
RTCs	1st	in 11 minutes	82.37%	81.29%	-1.08%

Note:

'Adjusted Base' assumes 100% availability at RDS stations and new crewing arrangements at Stations 10 & 13

This table provides the modelled impacts of closing Station 7 (Pangbourne), against an adjusted base position where all RDS crews are 100% available, and the new crewing arrangements are in place at Stations 10 & 13. The impacts are shown for the 24/7 period.

B2a

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Modelled Impact of Closing Station 9 (Wargrave)

Performance Against Adjusted Base

Response Standards			Adjusted Base	Modelled Option	Difference
Dwelling Fires	1st	in 8 minutes	82.38%	82.12%	-0.25%
		in 10 minutes	93.72%	93.37%	-0.35%
	2nd	in 10 minutes	71.62%	71.47%	-0.16%
		in 12 minutes	87.82%	87.59%	-0.24%
	Combined	1st in 8 & 2nd in 10	65.78%	65.63%	-0.16%
		1st in 10 & 2nd in 12	84.43%	84.22%	-0.22%
RTCs	1st	in 11 minutes	82.37%	81.61%	-0.76%

Note:

'Adjusted Base' assumes 100% availability at RDS stations and new crewing arrangements at Stations 10 & 13

This table provides the modelled impacts of closing Station 9 (Wargrave), against an adjusted base position where all RDS crews are 100% available, and the new crewing arrangements are in place at Stations 10 & 13. The impacts are shown for the 24/7 period.

B2b

Royal Berkshire Fire & Rescue Service

Modelled Impact of Closing Station 12 (Cookham)

Performance Against Adjusted Base

Response Standards			Adjusted Base	Modelled Option	Difference
Dwelling Fires	1st	in 8 minutes	82.38%	82.20%	-0.18%
		in 10 minutes	93.72%	93.62%	-0.10%
	2nd	in 10 minutes	71.62%	71.23%	-0.39%
		in 12 minutes	87.82%	87.49%	-0.33%
	Combined	1st in 8 & 2nd in 10	65.78%	65.51%	-0.27%
		1st in 10 & 2nd in 12	84.43%	84.10%	-0.33%
RTCs	1st	in 11 minutes	82.37%	82.35%	-0.01%

Note:

'Adjusted Base' assumes 100% availability at RDS stations and new crewing arrangements at Stations 10 & 13

This table provides the modelled impacts of closing Station 12 (Cookham), against an adjusted base position where all RDS crews are 100% available, and the new crewing arrangements are in place at Stations 10 & 13. The impacts are shown for the 24/7 period.

B2c

Royal Berkshire Fire & Rescue Service

Modelled Impact of Closing 3 RDS Stations (Pangbourne, Wargrave & Cookham)

Performance Against Adjusted Base

Response Standards			Adjusted Base	Modelled Option	Difference
Dwelling Fires	1st	in 8 minutes	82.38%	81.34%	-1.04%
		in 10 minutes	93.72%	92.98%	-0.74%
	2nd	in 10 minutes	71.62%	70.70%	-0.92%
		in 12 minutes	87.82%	86.85%	-0.98%
	Combined	1st in 8 & 2nd in 10	65.78%	64.94%	-0.84%
		1st in 10 & 2nd in 12	84.43%	83.42%	-1.02%
RTCs	1st	in 11 minutes	82.37%	80.48%	-1.89%

Note:

'Adjusted Base' assumes 100% availability at RDS stations and new crewing arrangements at Stations 10 & 13

This table provides the modelled impacts of closing Stations 7, 9 and 12 (Pangbourne, Wargrave and Cookham), against an adjusted base position where all RDS crews are 100% available, and the new crewing arrangements are in place at Stations 10 & 13. The impacts are shown for the 24/7 period.

C Greenfield Optimisation Runs *(Tasks 1 & 2)*

C1 Indicative Greenfield Optimisation Maps (1st in 8-minutes)

C2 Modelled Performance Impacts of Indicative Runs

C3 Deployment Options for 14 Greenfield WDS Appliances

C4 Full Simulation Results for 14 Greenfield WDS Appliances

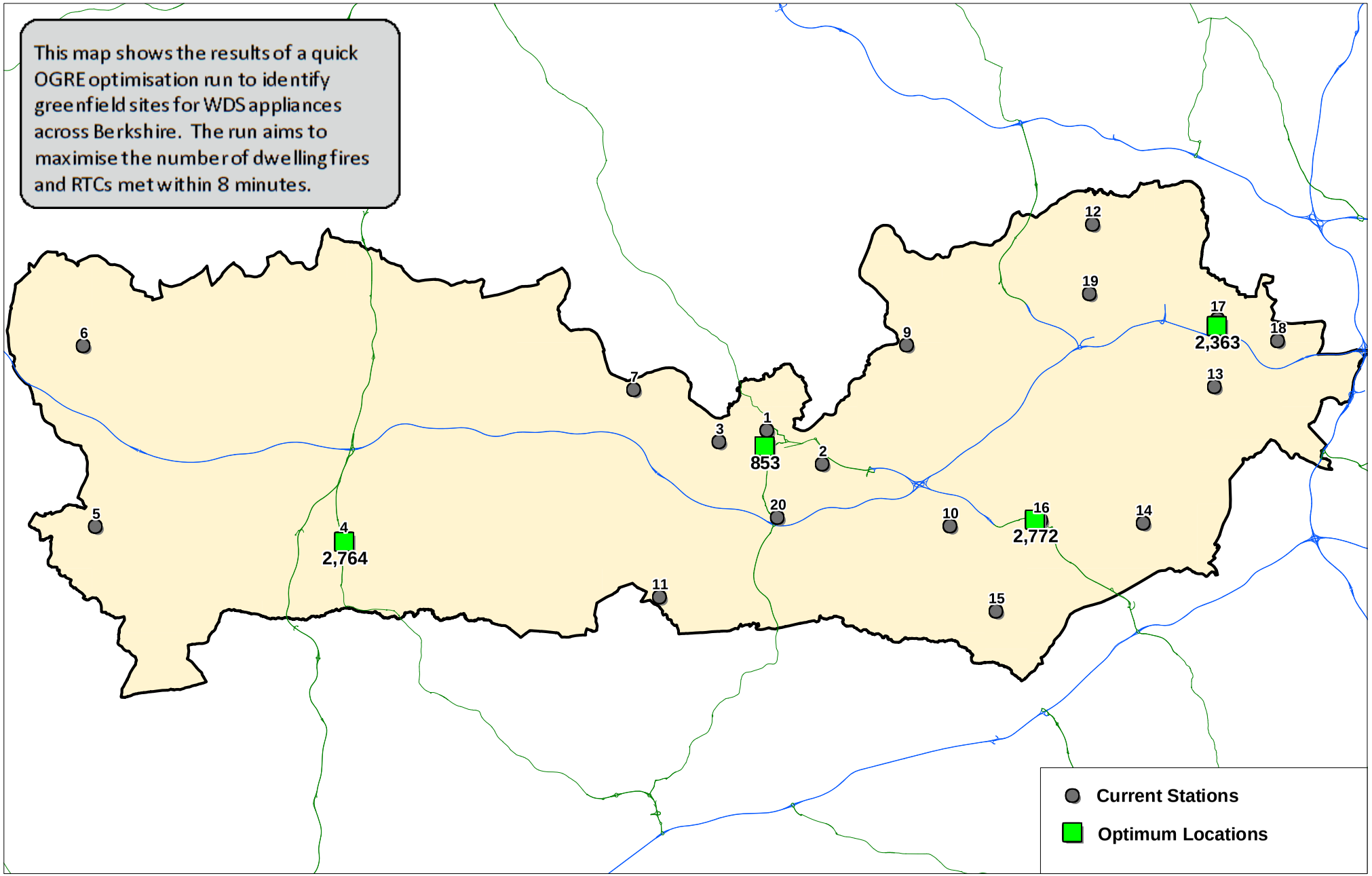
- **C4a** Table of Results
- **C4b** 1st Appliance to DFs
- **C4c** 2nd Appliance to DFs
- **C4d** 1st Appliance to RTCs

C5 Deployment Options for 15 Greenfield WDS Appliances

C6 Full Simulation Results for 15 Greenfield WDS Appliances

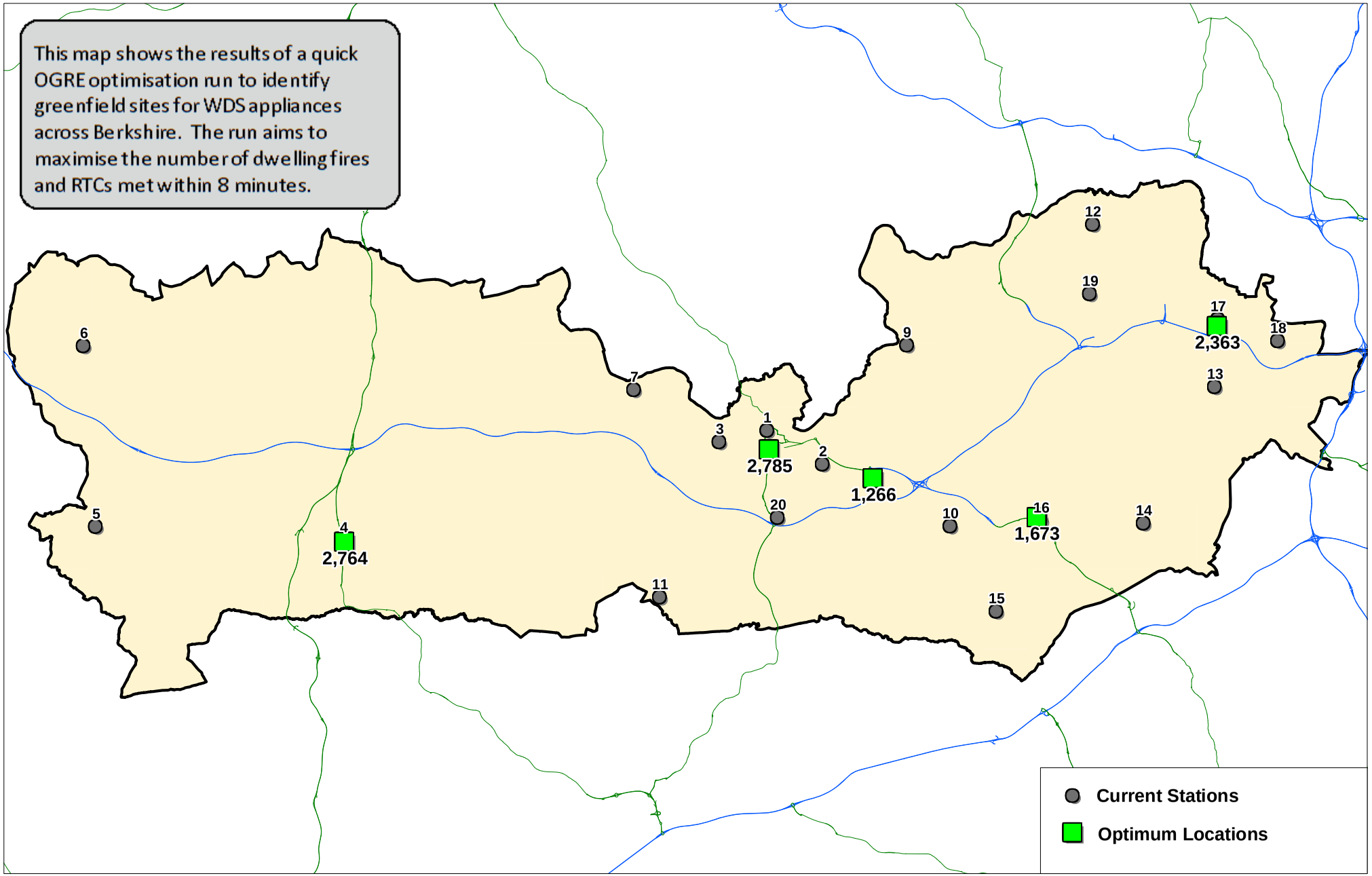
- **C6a** Table of Results
- **C6b** 1st Appliance to DFs
- **C6c** 2nd Appliance to DFs
- **C6d** 1st Appliance to RTCs

1st Appliance in 8 Minutes - Optimum Location for 4 Appliances



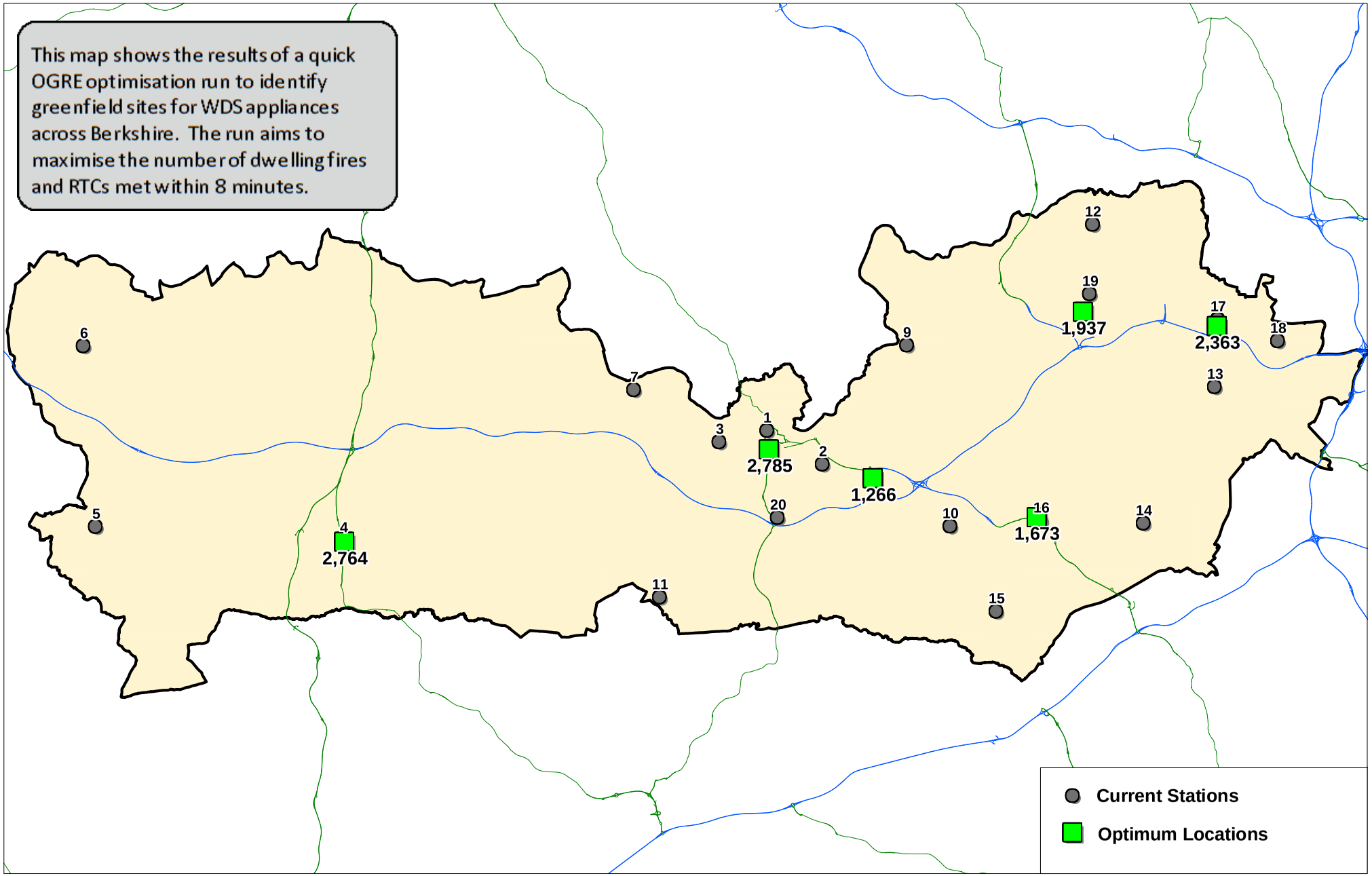
C1a

1st Appliance in 8 Minutes - Optimum Location for 5 Appliances



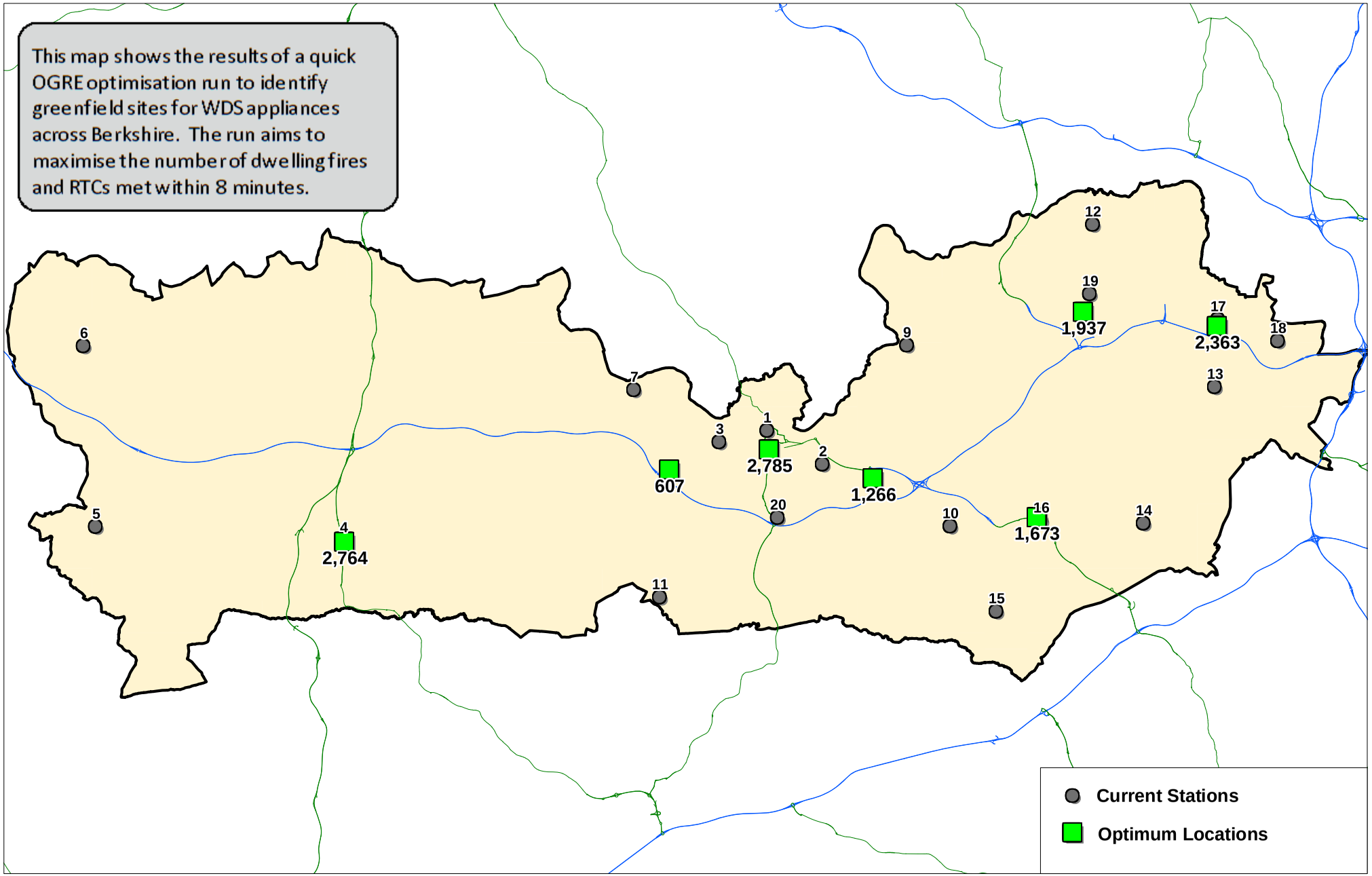
C1b

1st Appliance in 8 Minutes - Optimum Location for 6 Appliances



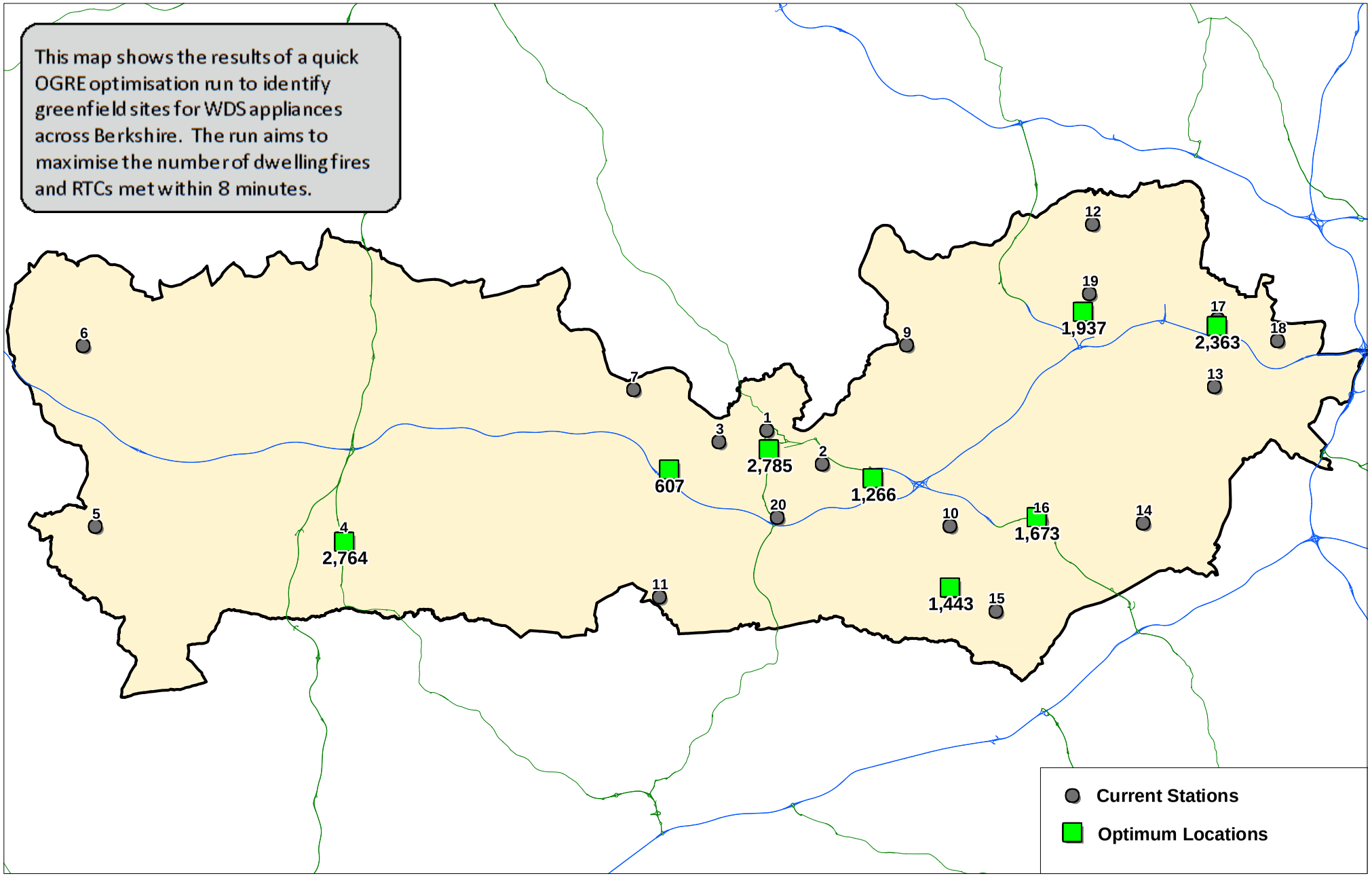
C1c

1st Appliance in 8 Minutes - Optimum Location for 7 Appliances



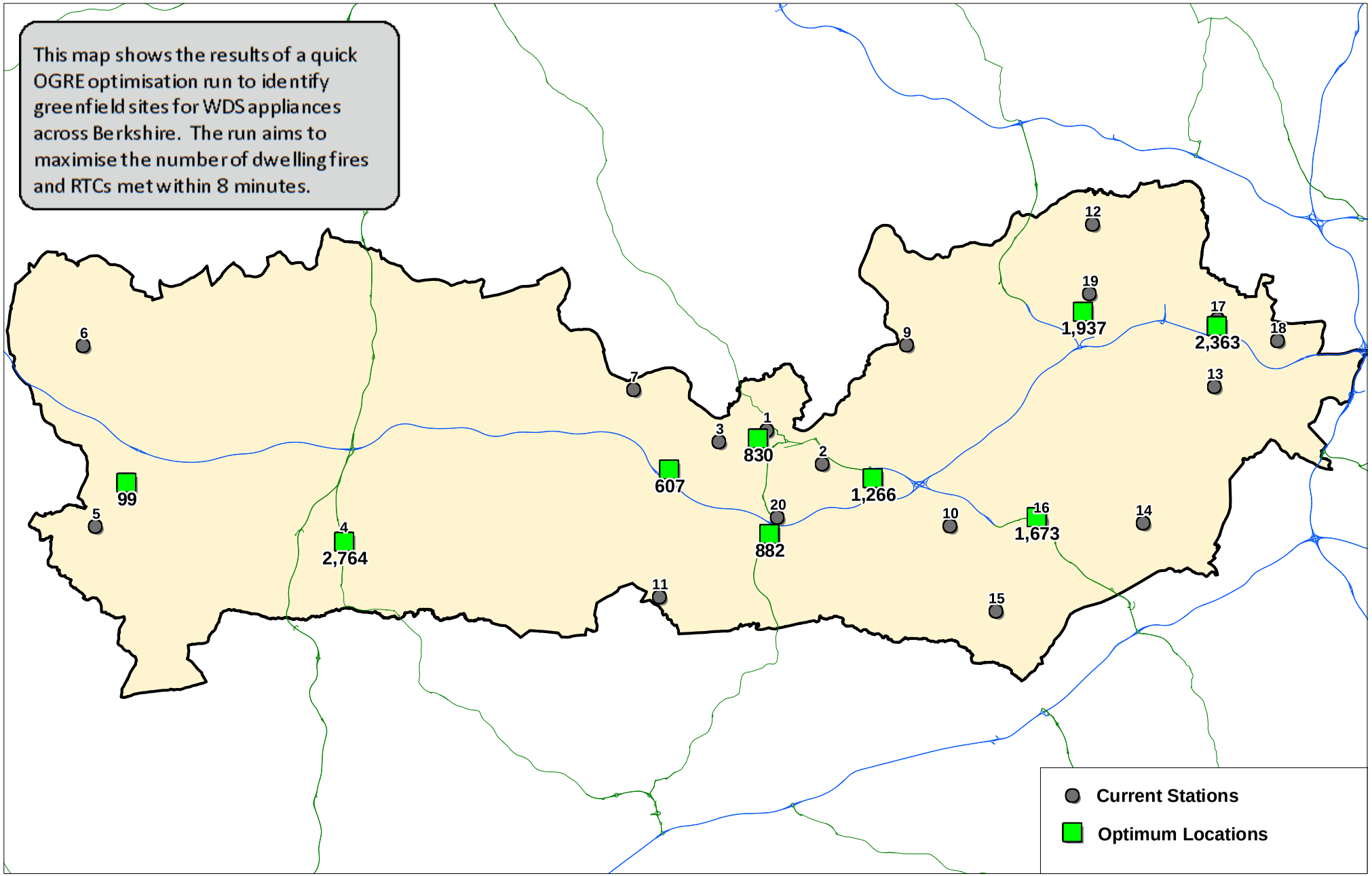
C1d

1st Appliance in 8 Minutes - Optimum Location for 8 Appliances



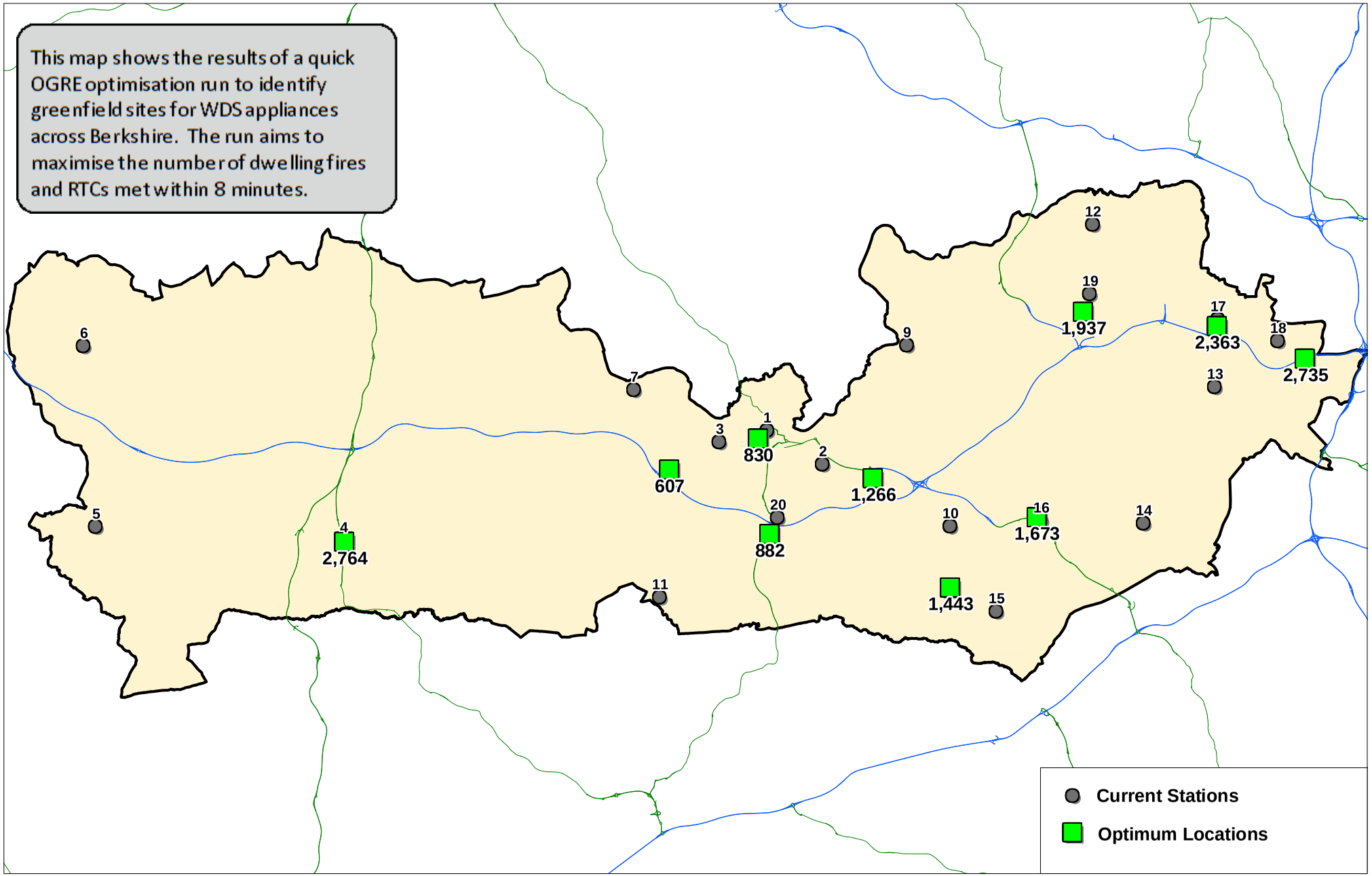
C1e

1st Appliance in 8 Minutes - Optimum Location for 9 Appliances



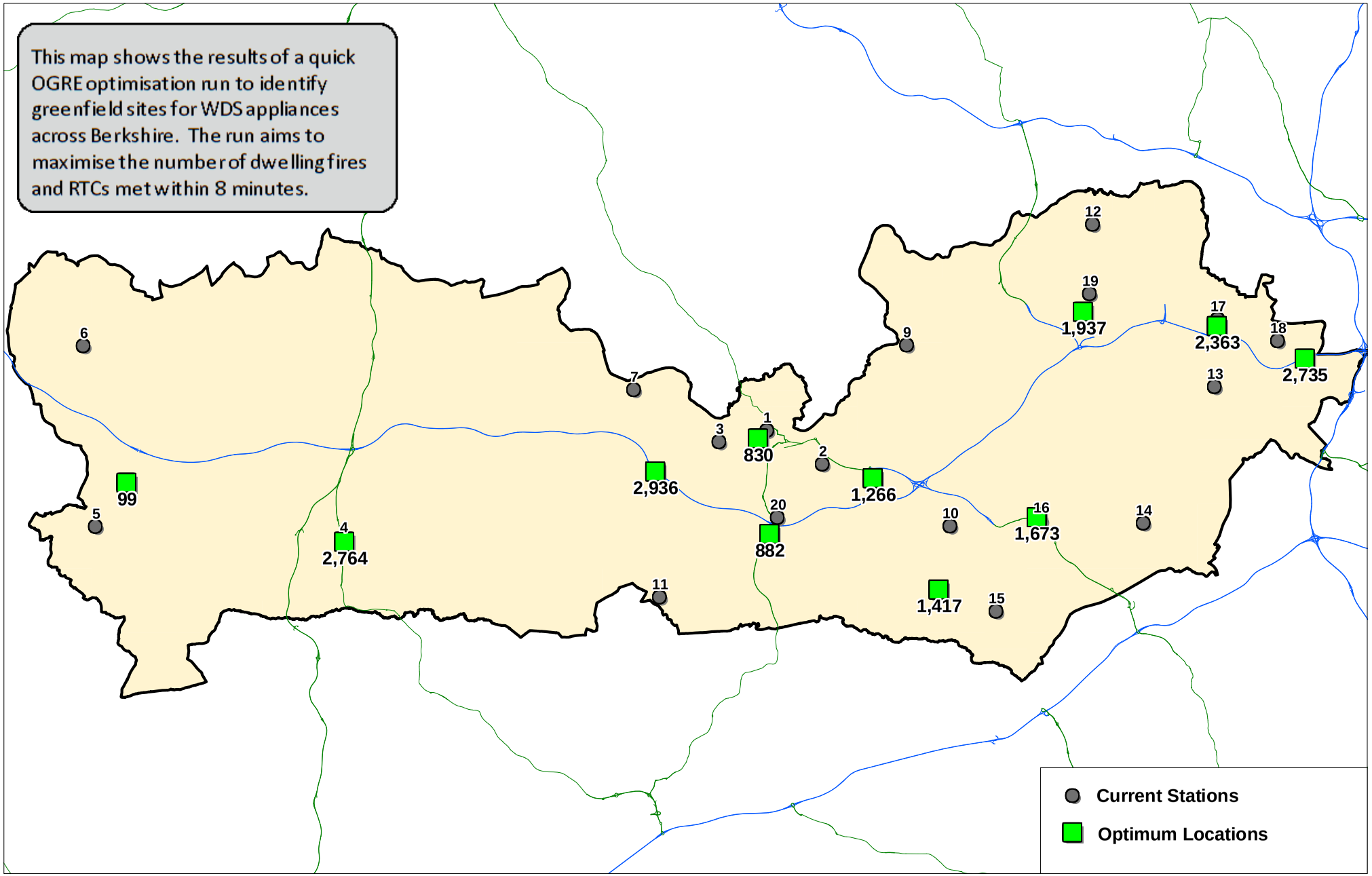
C1f

1st Appliance in 8 Minutes - Optimum Location for 10 Appliances



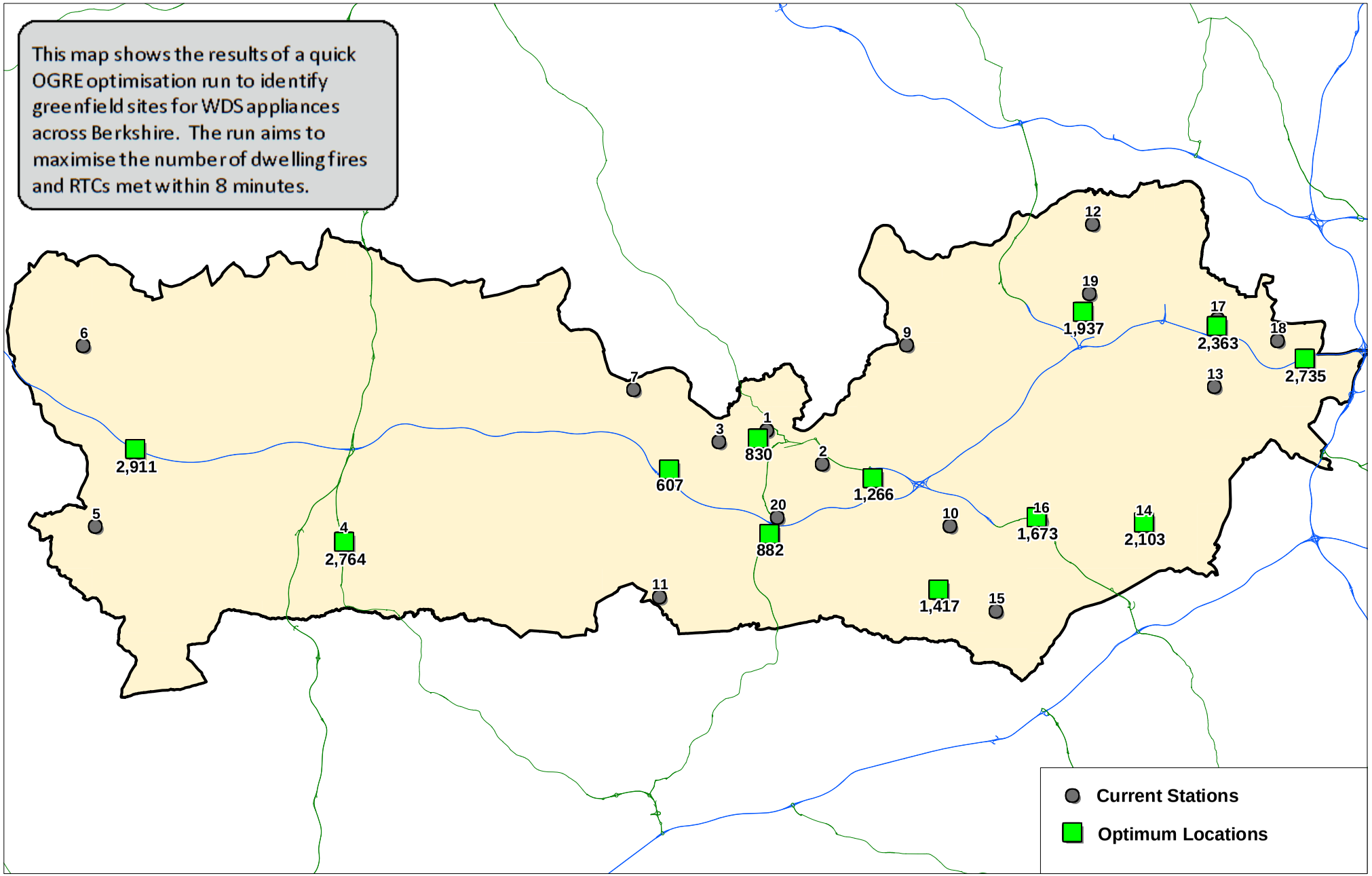
C1g

1st Appliance in 8 Minutes - Optimum Location for 11 Appliances



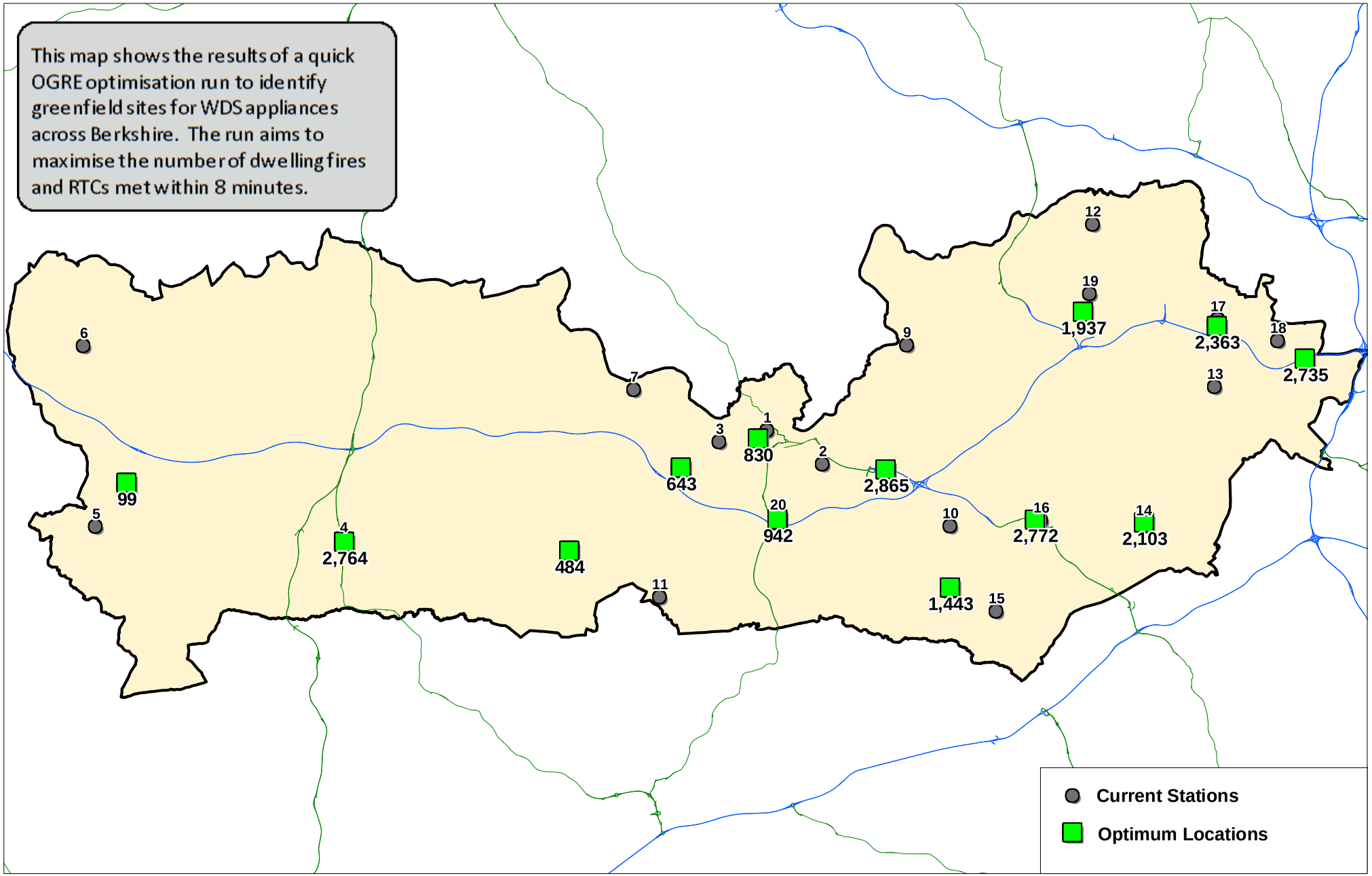
C1h

1st Appliance in 8 Minutes - Optimum Location for 12 Appliances



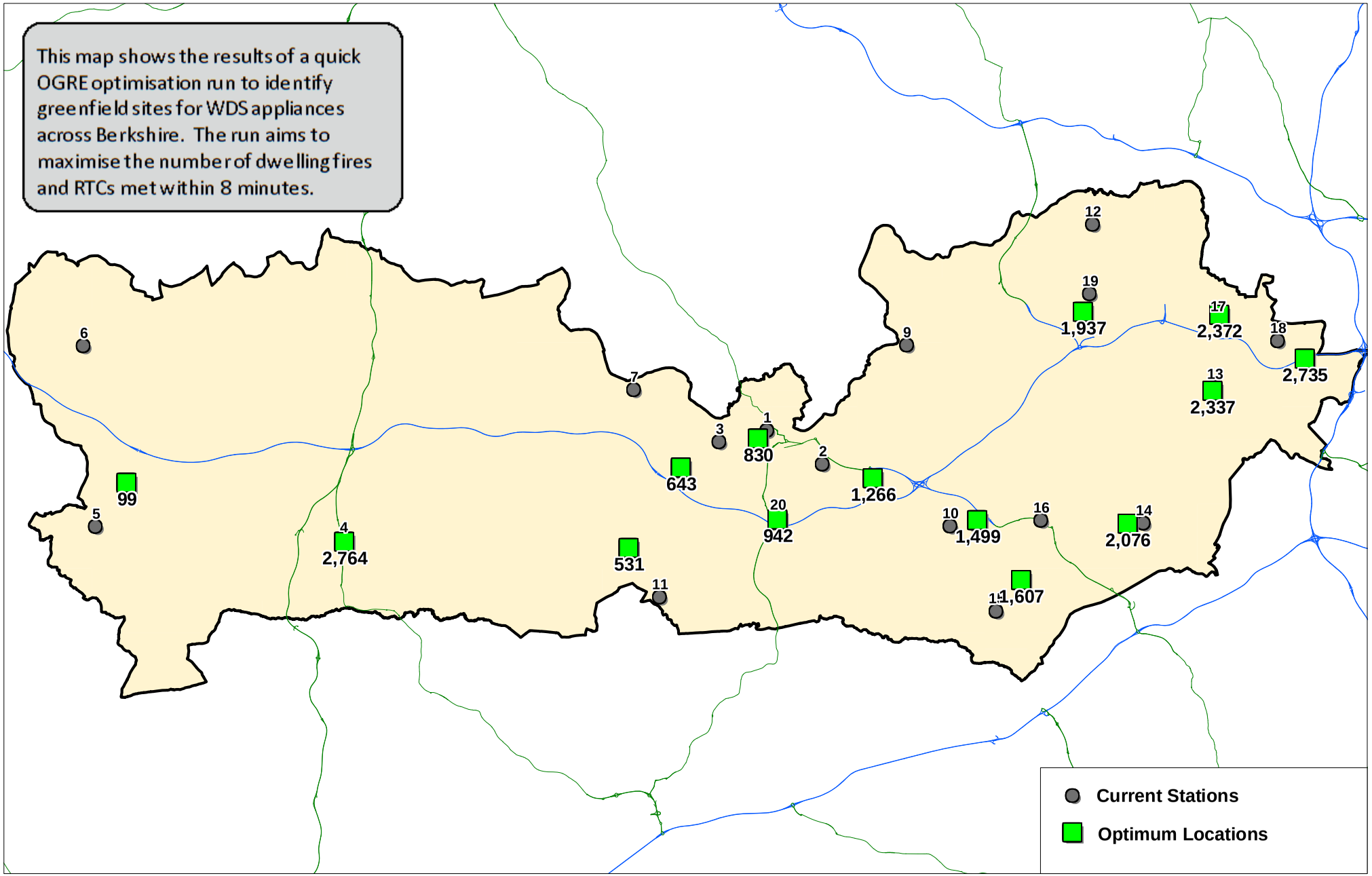
C1i

1st Appliance in 8 Minutes - Optimum Location for 13 Appliances



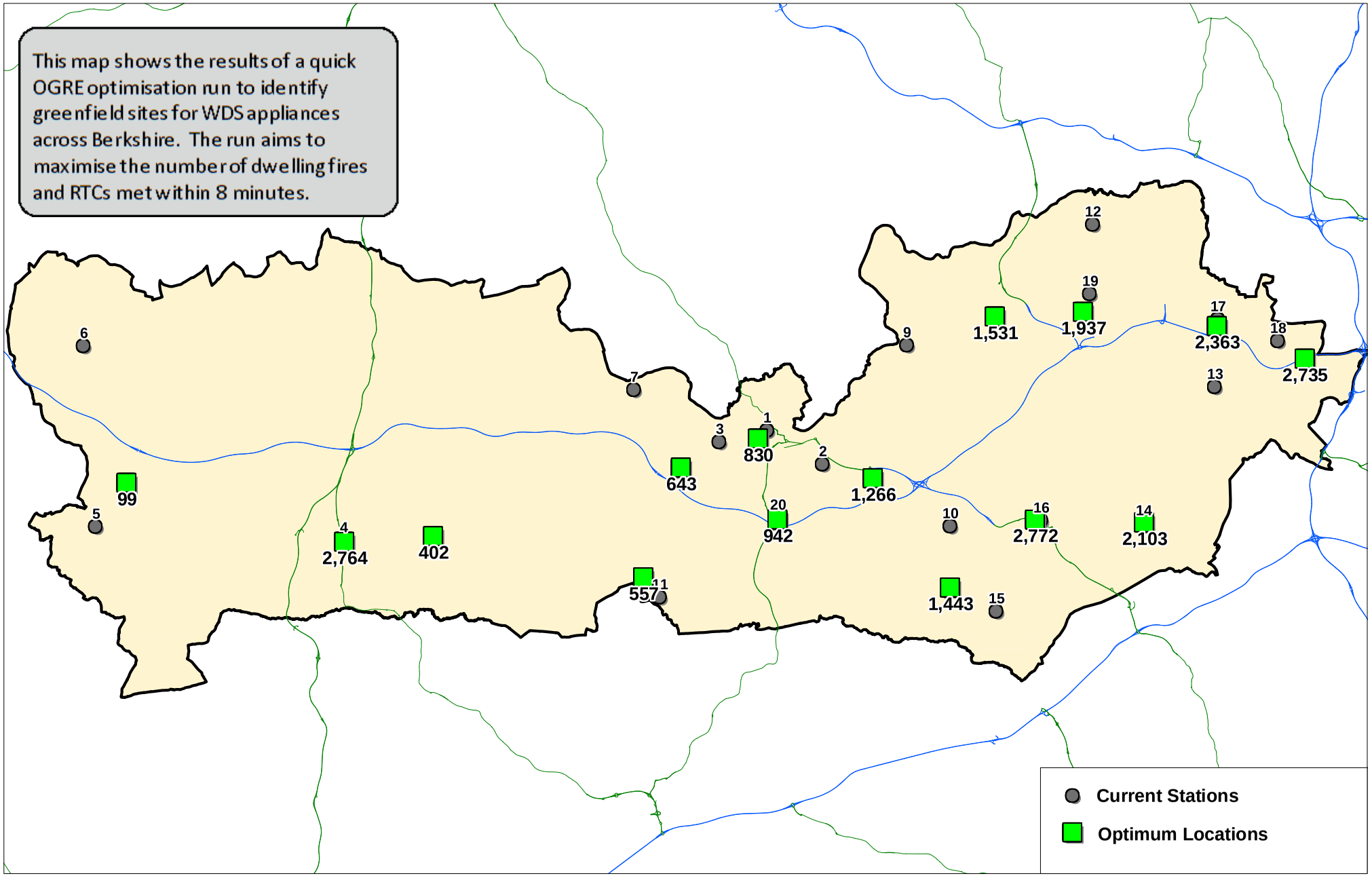
C1j

1st Appliance in 8 Minutes - Optimum Location for 14 Appliances



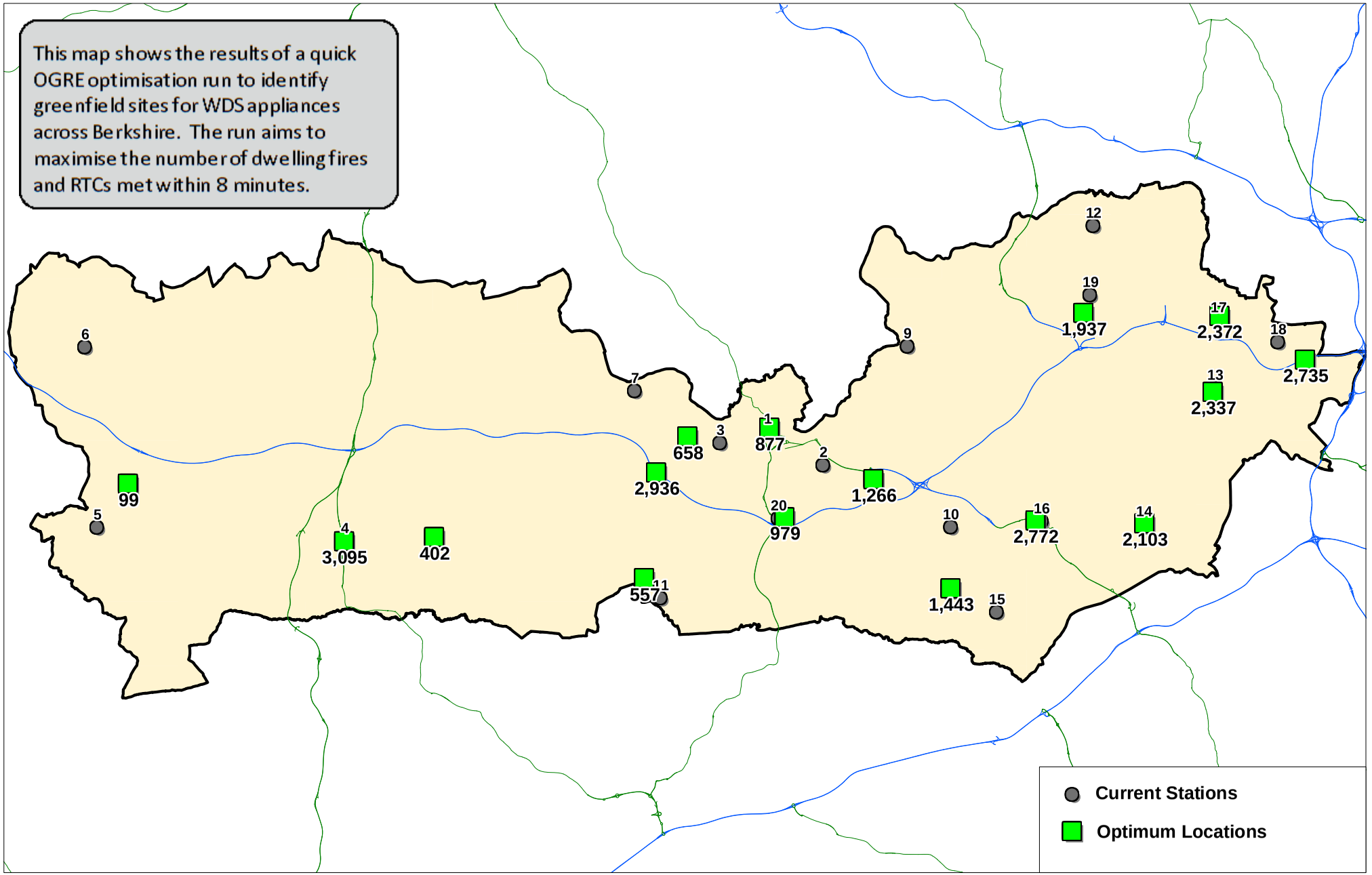
C1k

1st Appliance in 8 Minutes - Optimum Location for 15 Appliances

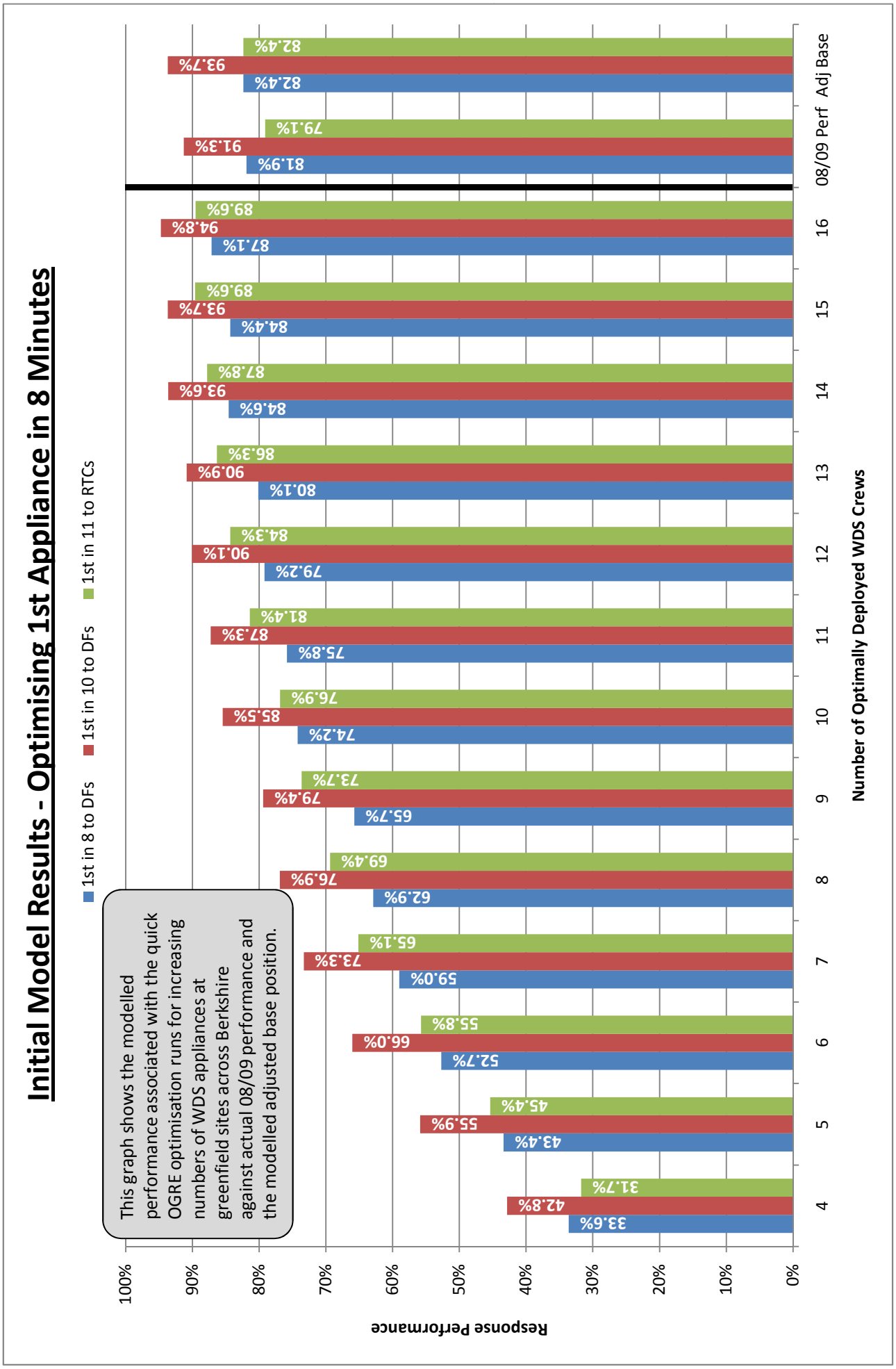


C1l

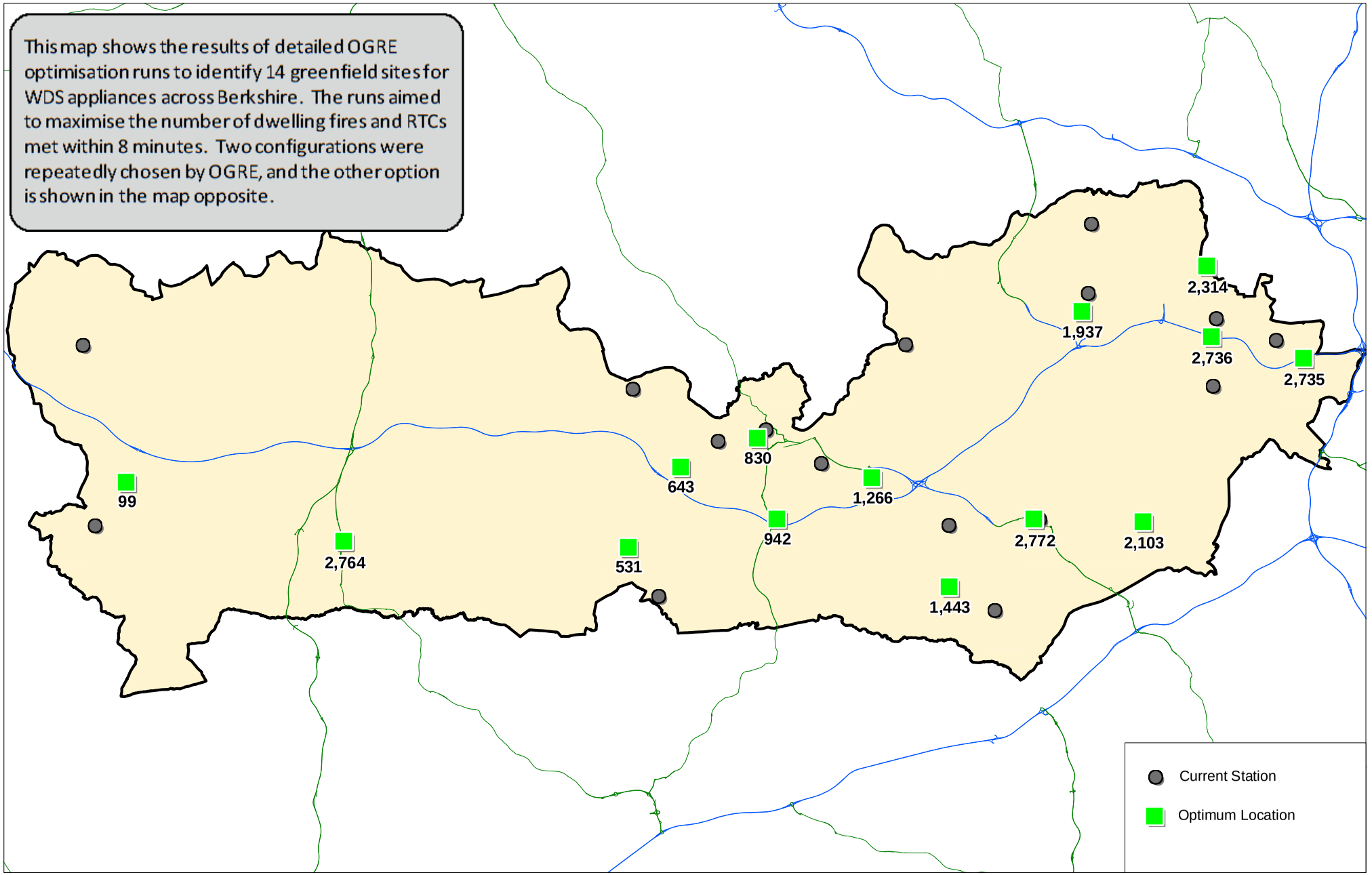
1st Appliance in 8 Minutes to Dwelling Fires - Optimum Location for 16 Appliances



C1m

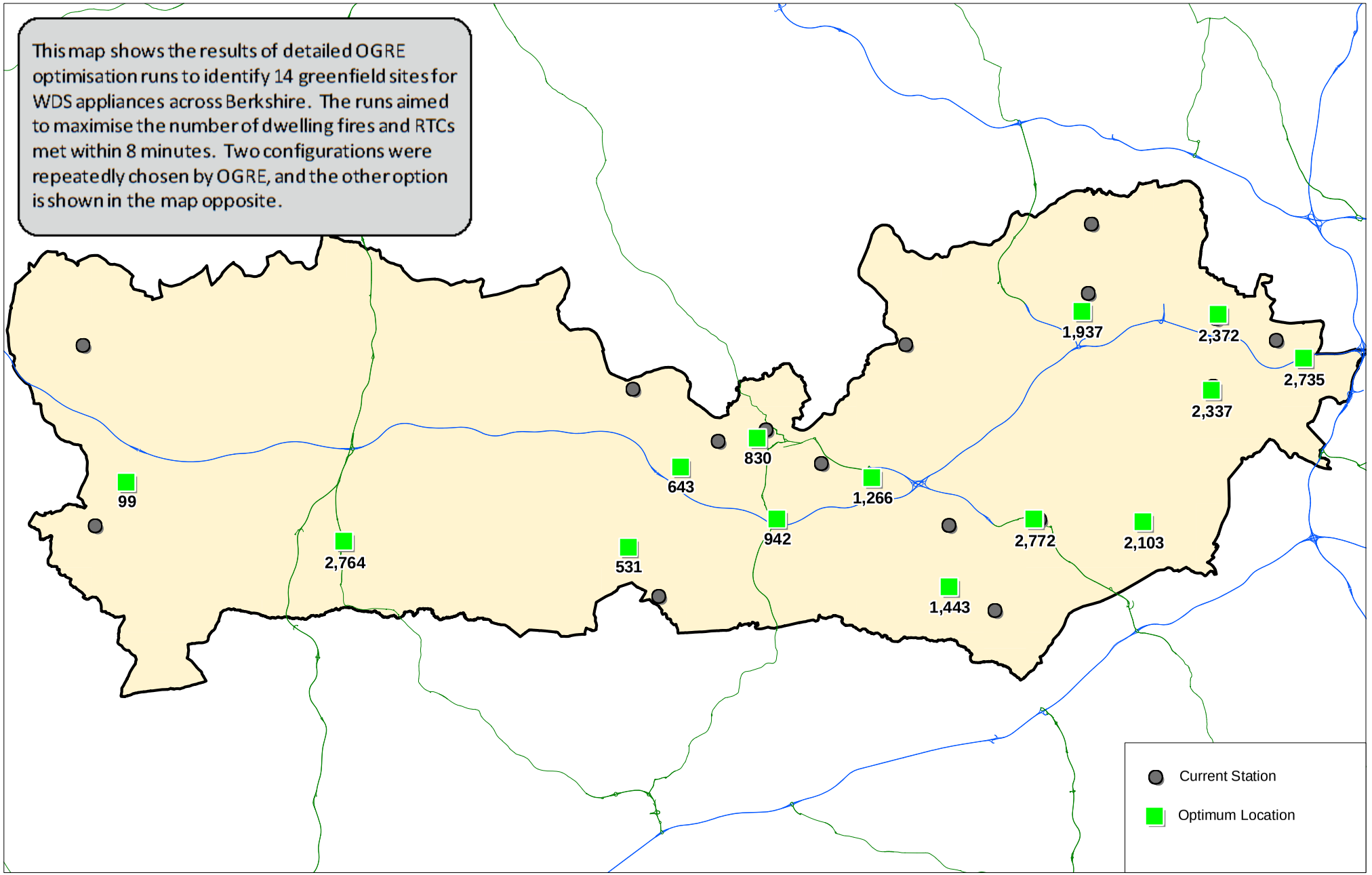

Initial Model Results - Optimising 1st Appliance in 8 Minutes
1st in 8 to DFs
1st in 10 to DFs
1st in 11 to RTCs
This graph shows the modelled performance associated with the quick OGRE optimisation runs for increasing numbers of WDS appliances at greenfield sites across Berkshire against actual 08/09 performance and the modelled adjusted base position.
Response Performance
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Number of Optimally Deployed WDS Crews
4
5
6
7
8
9
10
11
12
13
14
15
16
08/09 Perf
Adj Base
33.6%
42.8%
31.7%
43.4%
55.9%
45.4%
52.7%
66.0%
55.8%
59.0%
73.3%
65.1%
62.9%
76.9%
69.4%
65.7%
79.4%
73.7%
74.2%
85.5%
76.9%
75.8%
87.3%
81.4%
79.2%
90.1%
84.3%
80.1%
90.9%
86.3%
84.6%
93.6%
87.8%
84.4%
93.7%
89.6%
87.1%
94.8%
89.6%
81.9%
91.3%
79.1%
82.4%
93.7%
82.4%

Optimising 1st Appliance in 8 Minutes - 14 Locations - Option 1



C3a

Optimising 1st Appliance in 8 Minutes - 14 Locations - Option 2



C3b

Royal Berkshire Fire & Rescue Service

Response Distributions for Optimal Greenfiled Deployment of 14 WDS Appliances

Performance Against Adjusted Base

1st Appliance to Dwelling Fires

Mins	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Current	0.0%	0.0%	2.9%	17.6%	38.0%	57.1%	73.5%	**81.9%**	87.1%	**91.3%**	93.4%	95.6%	98.2%	98.8%	99.4%	99.7%	99.7%	99.7%	100.0%	100.0%
Adjusted Base	0.0%	0.5%	5.0%	16.8%	36.2%	56.6%	71.7%	**82.4%**	89.5%	**93.7%**	96.5%	98.0%	98.9%	99.4%	99.6%	99.8%	99.9%	100.0%	100.0%	100.0%
Option 1	0.0%	1.2%	6.1%	20.3%	39.7%	60.2%	75.3%	**84.6%**	90.6%	**93.8%**	95.9%	97.1%	97.8%	98.5%	99.1%	99.5%	99.7%	99.8%	99.9%	99.9%
Option 2	0.0%	1.4%	6.3%	20.7%	40.2%	60.0%	75.2%	**84.8%**	90.7%	**93.8%**	96.0%	97.2%	97.8%	98.5%	99.1%	99.4%	99.7%	99.8%	99.9%	99.9%

2nd Appliance to Dwelling Fires

Mins	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Current	0.0%	0.0%	0.6%	5.1%	12.4%	22.0%	36.2%	48.2%	57.5%	**68.3%**	75.9%	**85.4%**	91.0%	94.5%	97.1%	98.0%	98.0%	99.0%	99.7%	100.0%
Adjusted Base	0.0%	0.0%	0.6%	3.1%	8.8%	18.2%	30.2%	45.4%	59.5%	**71.6%**	81.6%	**87.8%**	92.4%	95.2%	96.9%	97.9%	98.5%	99.1%	99.3%	99.6%
Option 1	0.0%	0.0%	0.0%	0.0%	0.4%	3.4%	13.3%	31.4%	51.2%	**64.3%**	73.3%	**80.6%**	85.9%	89.7%	93.2%	96.0%	97.6%	98.8%	99.3%	99.6%
Option 2	0.0%	0.0%	0.0%	0.1%	0.8%	4.5%	14.2%	30.5%	47.4%	**61.0%**	71.9%	**79.9%**	85.7%	89.8%	93.3%	95.9%	97.5%	98.6%	99.3%	99.5%

1st Appliance to RTCs

Mins	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Current	3.8%	4.9%	7.8%	14.5%	25.6%	36.3%	46.0%	57.2%	65.3%	72.6%	**79.1%**	84.0%	88.9%	92.4%	95.7%	97.1%	98.6%	99.0%	99.3%	100.0%
Adjusted Base	0.1%	1.0%	4.5%	11.3%	21.2%	34.4%	47.7%	59.1%	68.7%	76.3%	**82.4%**	87.2%	91.2%	94.0%	95.8%	97.0%	97.7%	98.1%	98.5%	98.8%
Option 1	0.2%	3.0%	9.1%	18.8%	31.9%	45.5%	59.7%	70.7%	77.6%	82.7%	**87.4%**	91.5%	93.7%	95.5%	96.6%	97.3%	97.6%	98.1%	98.4%	98.8%
Option 2	0.1%	2.6%	8.4%	18.4%	31.8%	45.8%	60.5%	71.4%	78.3%	83.1%	**87.5%**	91.7%	93.8%	95.5%	96.6%	97.3%	97.6%	98.0%	98.4%	98.7%

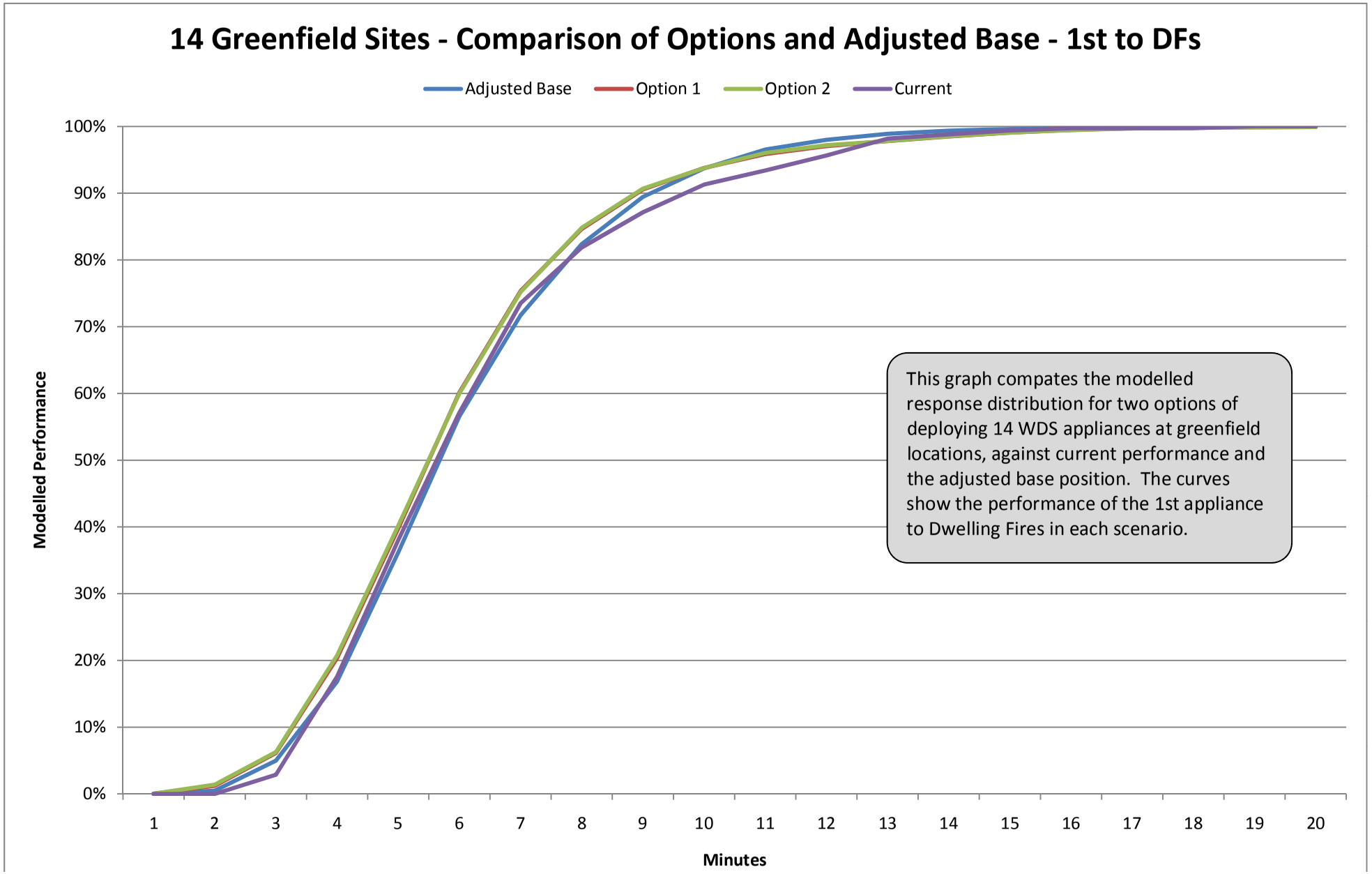
Note:

'Adjusted Base' assumes 100% availability at RDS stations and new crewing arrangements at Stations 10 & 13

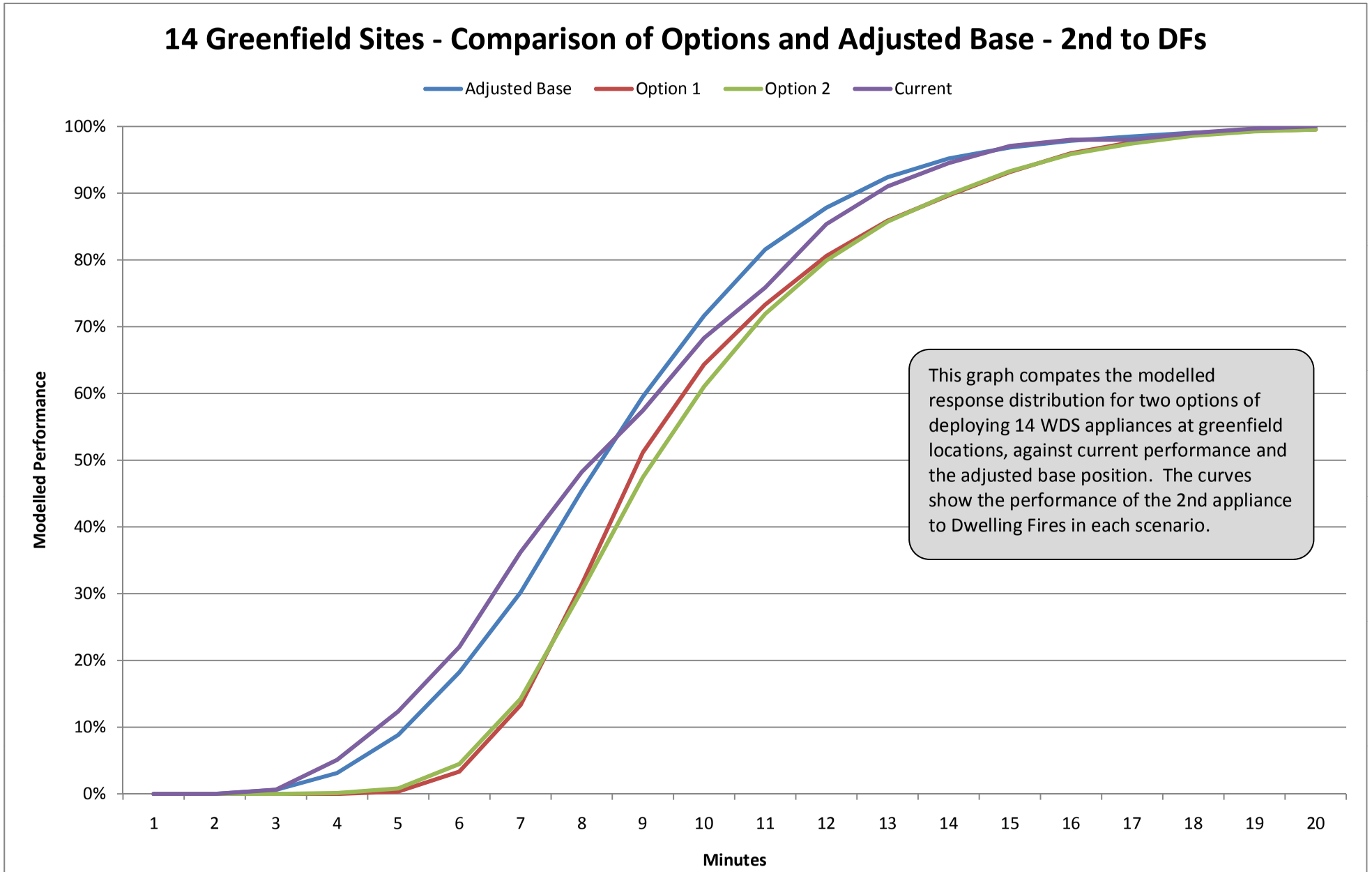
This table provides the modelled for two options of deploying 14 WDS appliances at greenfield locations, against current performance and the adjusted base position. The impacts are shown for the 24/7 period, and cover 1st and 2nd appliance to DFs and 1st to RTCs.

C4a

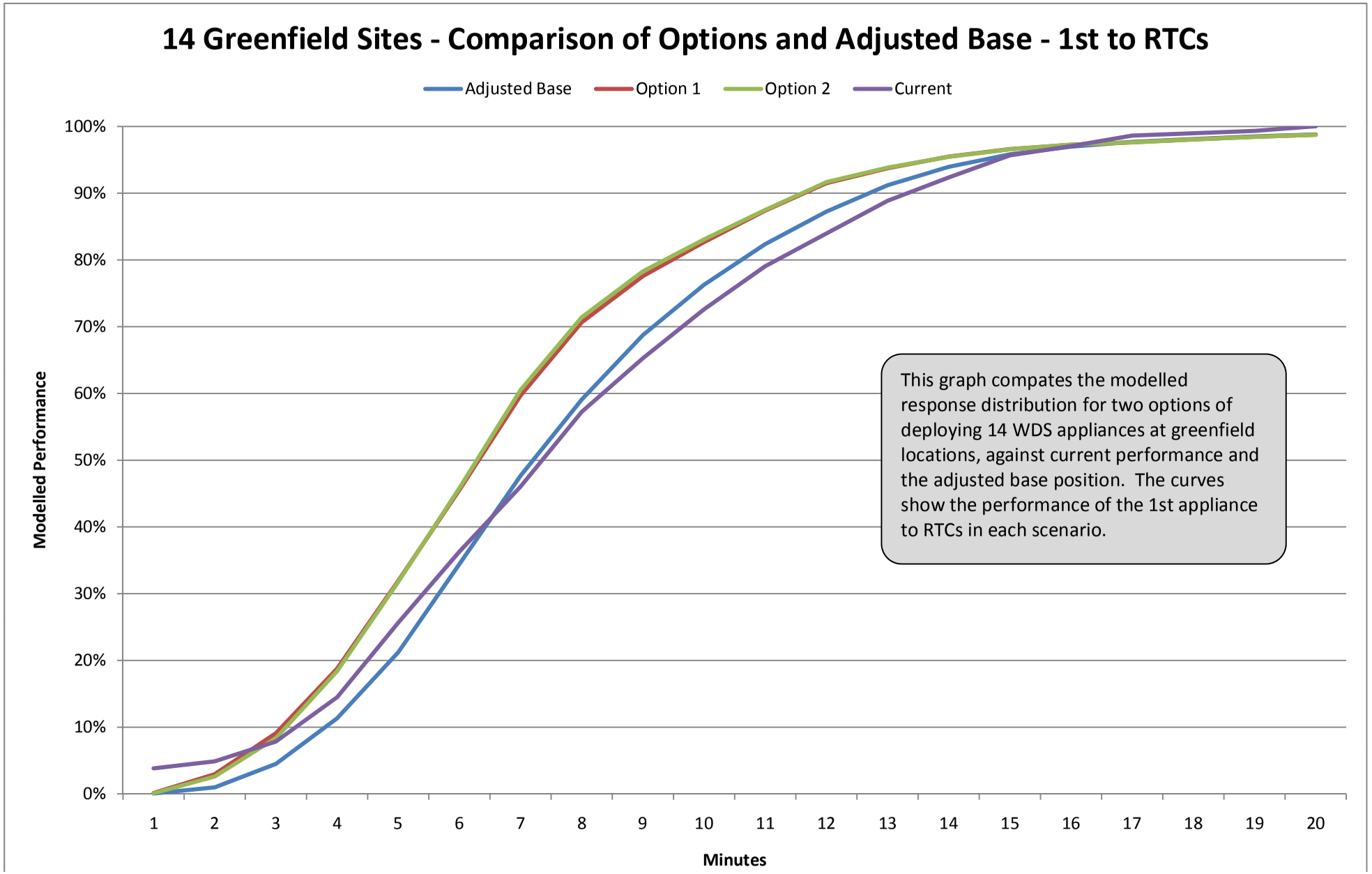
14 Greenfield Sites - Comparison of Options and Adjusted Base - 1st to DFs



C4b

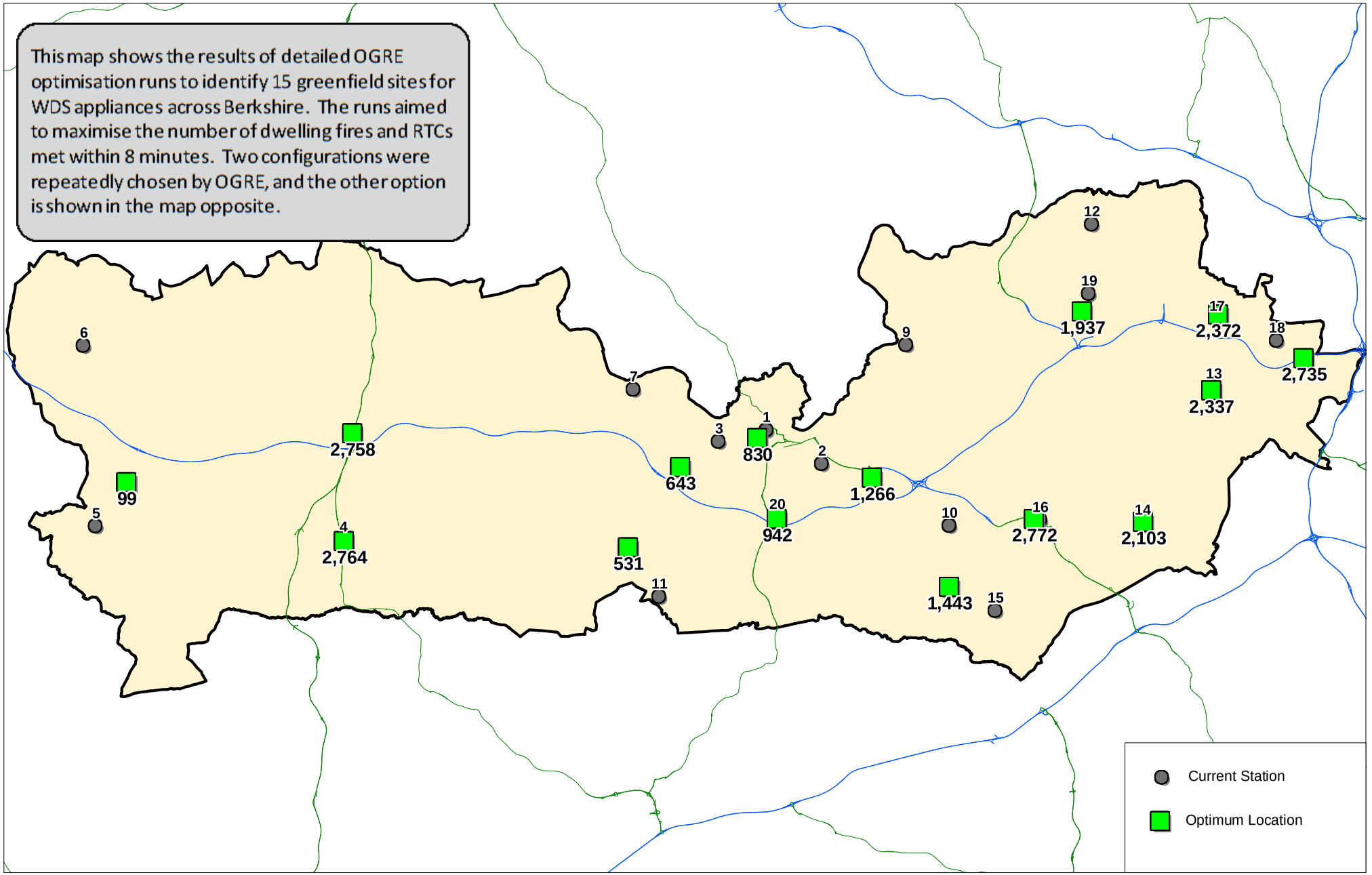

14 Greenfield Sites - Comparison of Options and Adjusted Base - 2nd to DFs
Adjusted Base
Option 1
Option 2
Current
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Modelled Performance
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
Minutes
This graph compates the modelled response distribution for two options of deploying 14 WDS appliances at greenfield locations, against current performance and the adjusted base position. The curves show the performance of the 2nd appliance to Dwelling Fires in each scenario.

C4c


14 Greenfield Sites - Comparison of Options and Adjusted Base - 1st to RTCs
Adjusted Base
Option 1
Option 2
Current
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Modelled Performance
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
Minutes
This graph compates the modelled response distribution for two options of deploying 14 WDS appliances at greenfield locations, against current performance and the adjusted base position. The curves show the performance of the 1st appliance to RTCs in each scenario.

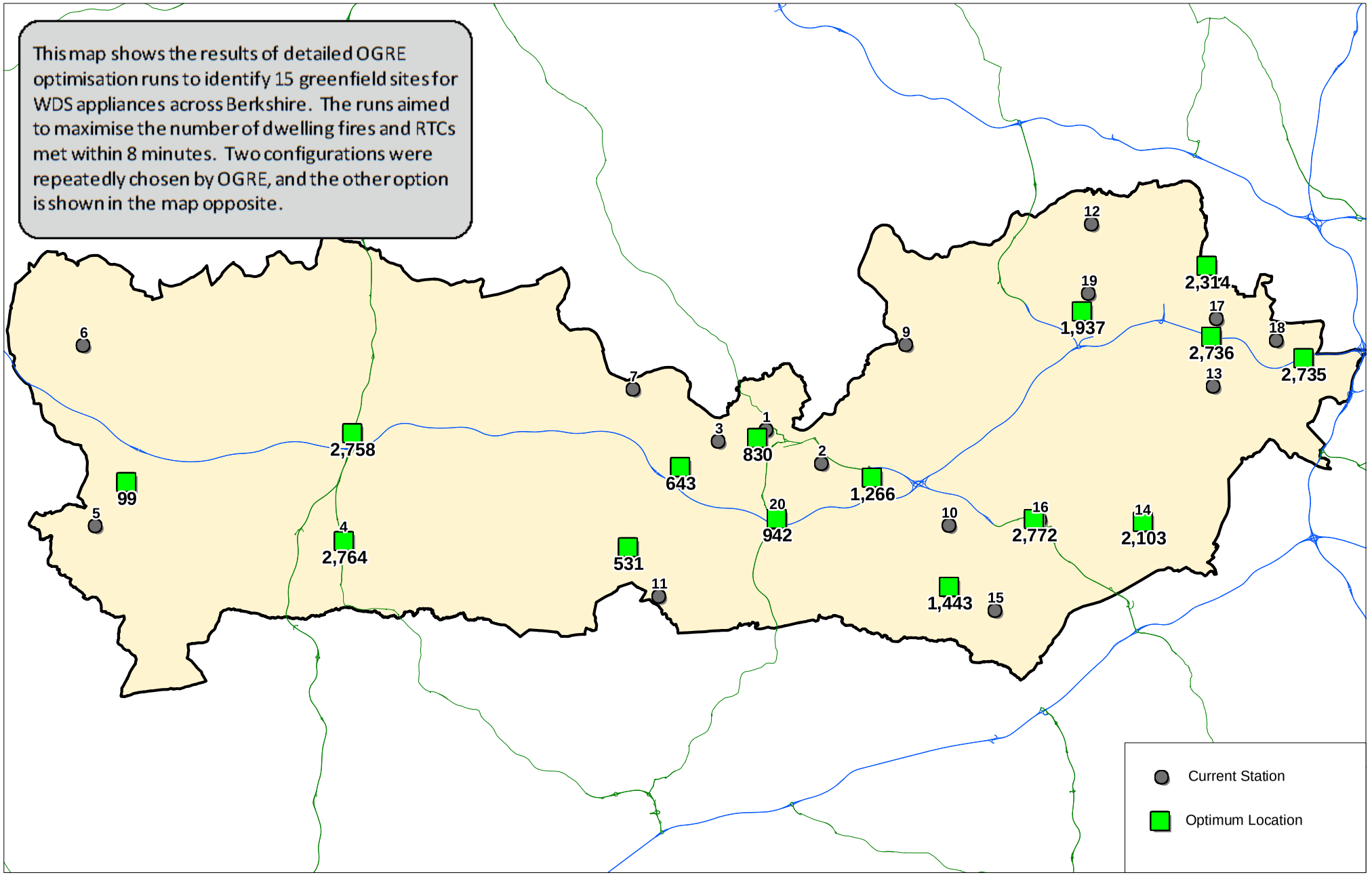
C4d

Optimising 1st Appliance in 8 Minutes - 15 Locations - Option 1



C5a

Optimising 1st Appliance in 8 Minutes - 15 Locations - Option 2



C5b

Royal Berkshire Fire & Rescue Service

Response Distributions for Optimal Greenfiled Deployment of 15 WDS Appliances

Performance Against Adjusted Base

1st Appliance to Dwelling Fires

Mins	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Current	0.0%	0.0%	2.9%	17.6%	38.0%	57.1%	73.5%	**81.9%**	87.1%	**91.3%**	93.4%	95.6%	98.2%	98.8%	99.4%	99.7%	99.7%	99.7%	100.0%	100.0%
Adjusted Base	0.0%	0.5%	5.0%	16.8%	36.2%	56.6%	71.7%	**82.4%**	89.5%	**93.7%**	96.5%	98.0%	98.9%	99.4%	99.6%	99.8%	99.9%	100.0%	100.0%	100.0%
Option 1	0.0%	1.4%	6.3%	20.9%	40.4%	60.3%	75.5%	**85.3%**	91.2%	**94.4%**	96.7%	98.0%	98.5%	99.0%	99.4%	99.6%	99.8%	99.8%	99.9%	99.9%
Option 2	0.0%	1.2%	6.2%	20.5%	39.9%	60.5%	75.7%	**85.1%**	91.1%	**94.4%**	96.6%	97.8%	98.5%	99.0%	99.4%	99.7%	99.8%	99.8%	99.9%	99.9%

2nd Appliance to Dwelling Fires

Mins	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Current	0.0%	0.0%	0.6%	5.1%	12.4%	22.0%	36.2%	48.2%	57.5%	**68.3%**	75.9%	**85.4%**	91.0%	94.5%	97.1%	98.0%	98.0%	99.0%	99.7%	100.0%
Adjusted Base	0.0%	0.0%	0.6%	3.1%	8.8%	18.2%	30.2%	45.4%	59.5%	**71.6%**	81.6%	**87.8%**	92.4%	95.2%	96.9%	97.9%	98.5%	99.1%	99.3%	99.6%
Option 1	0.0%	0.0%	0.0%	0.1%	0.8%	4.8%	15.6%	33.4%	51.6%	**65.8%**	77.1%	**85.4%**	90.9%	93.9%	96.1%	97.4%	98.5%	99.1%	99.5%	99.8%
Option 2	0.0%	0.0%	0.0%	0.0%	0.4%	3.7%	14.7%	34.3%	55.3%	**69.1%**	78.5%	**86.0%**	91.0%	93.8%	96.0%	97.6%	98.7%	99.3%	99.6%	99.8%

1st Appliance to RTCs

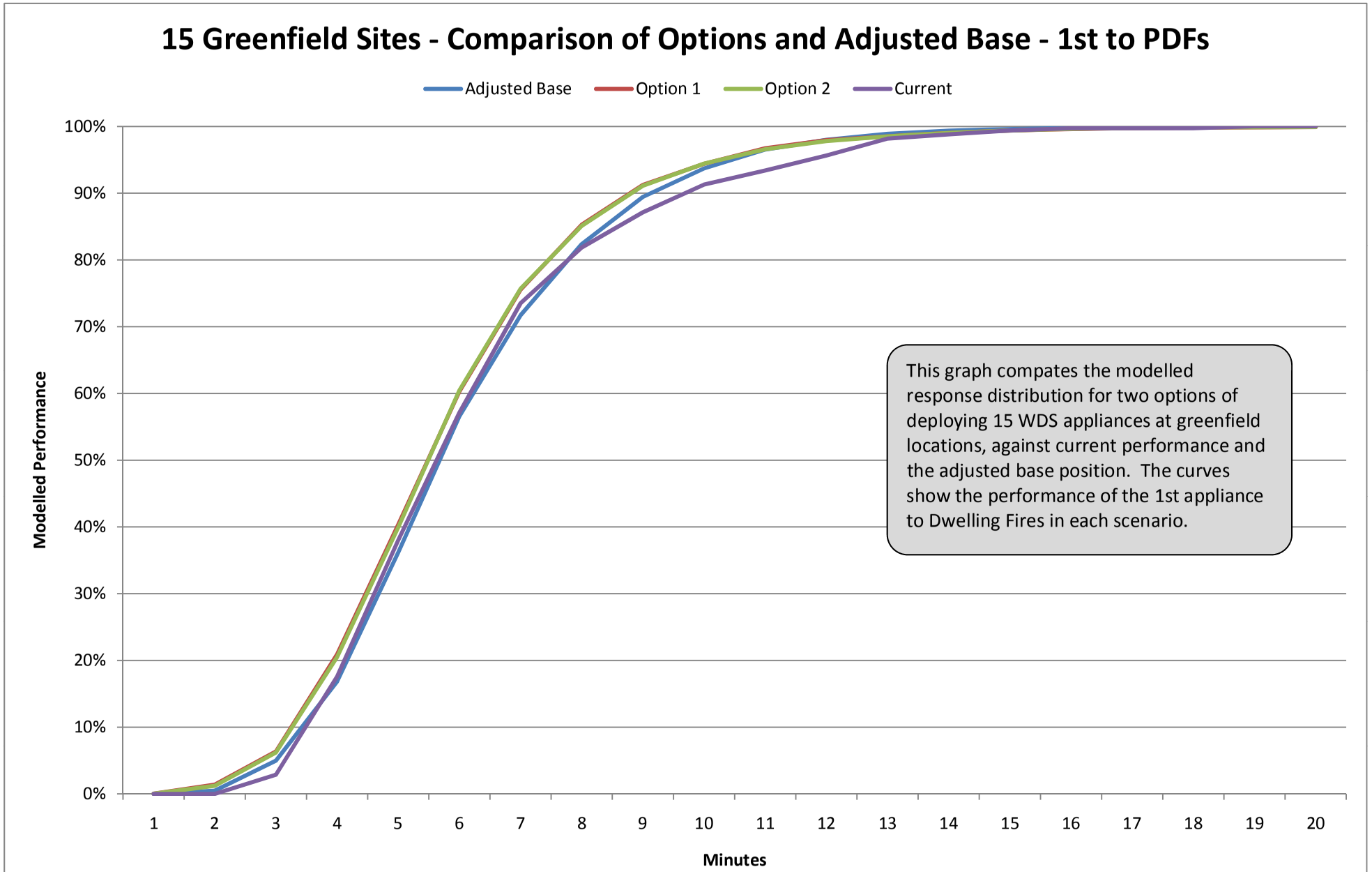
Mins	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Current	3.8%	4.9%	7.8%	14.5%	25.6%	36.3%	46.0%	57.2%	65.3%	72.6%	**79.1%**	84.0%	88.9%	92.4%	95.7%	97.1%	98.6%	99.0%	99.3%	100.0%
Adjusted Base	0.1%	1.0%	4.5%	11.3%	21.2%	34.4%	47.7%	59.1%	68.7%	76.3%	**82.4%**	87.2%	91.2%	94.0%	95.8%	97.0%	97.7%	98.1%	98.5%	98.8%
Option 1	0.1%	3.4%	10.7%	21.4%	35.2%	48.7%	62.7%	73.6%	80.7%	85.7%	**89.9%**	93.7%	95.5%	96.7%	97.7%	98.3%	98.5%	98.8%	99.1%	99.2%
Option 2	0.2%	3.8%	11.4%	21.8%	35.3%	48.4%	61.8%	72.9%	80.0%	85.3%	**89.8%**	93.5%	95.4%	96.7%	97.7%	98.3%	98.5%	98.8%	99.1%	99.2%

Note:

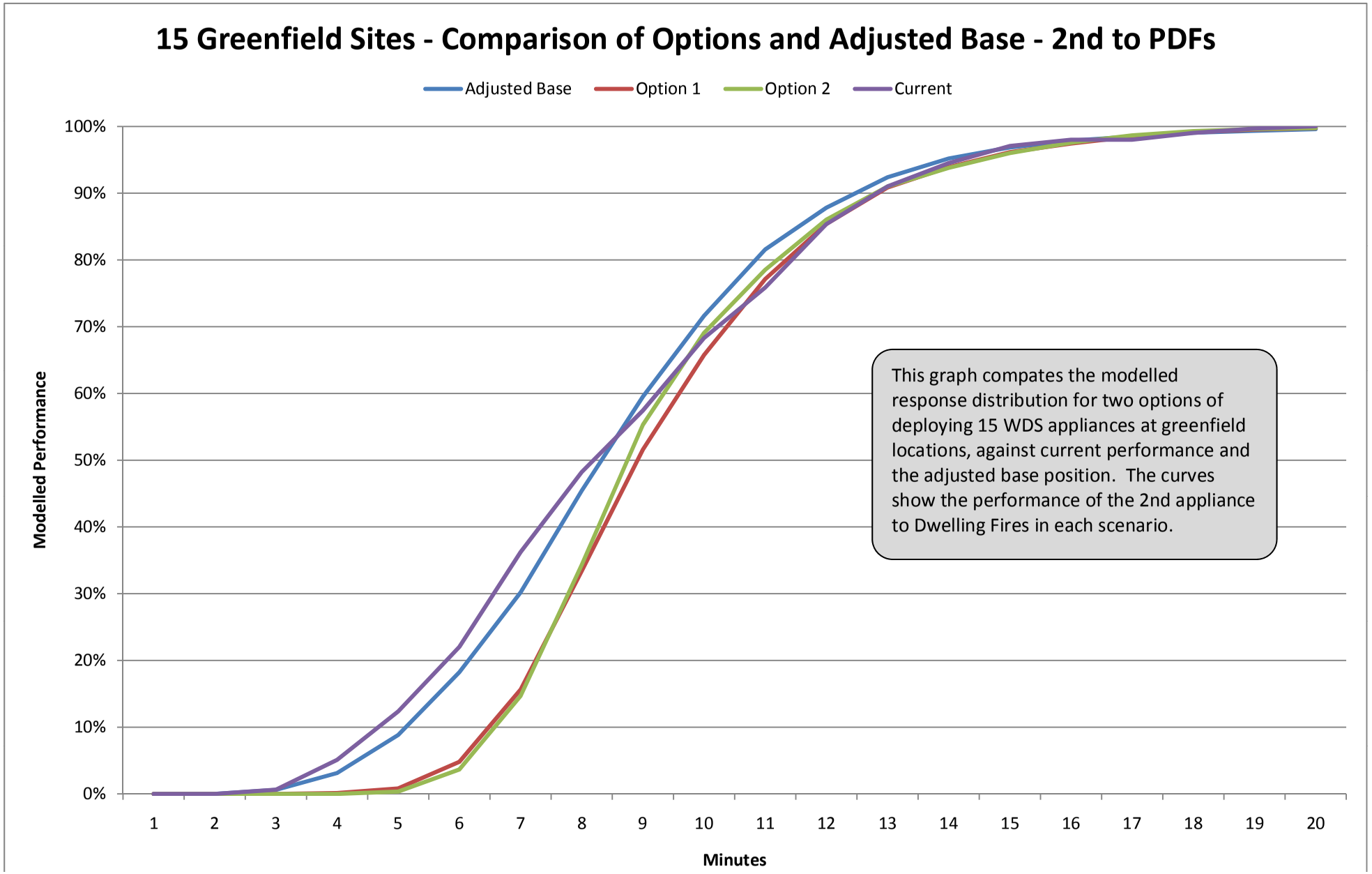
'Adjusted Base' assumes 100% availability at RDS stations and new crewing arrangements at Stations 10 & 13

This table provides the modelled for two options of deploying 15 WDS appliances at greenfield locations, against current performance and the adjusted base position. The impacts are shown for the 24/7 period, and cover 1st and 2nd appliance to DFs and 1st to RTCs.

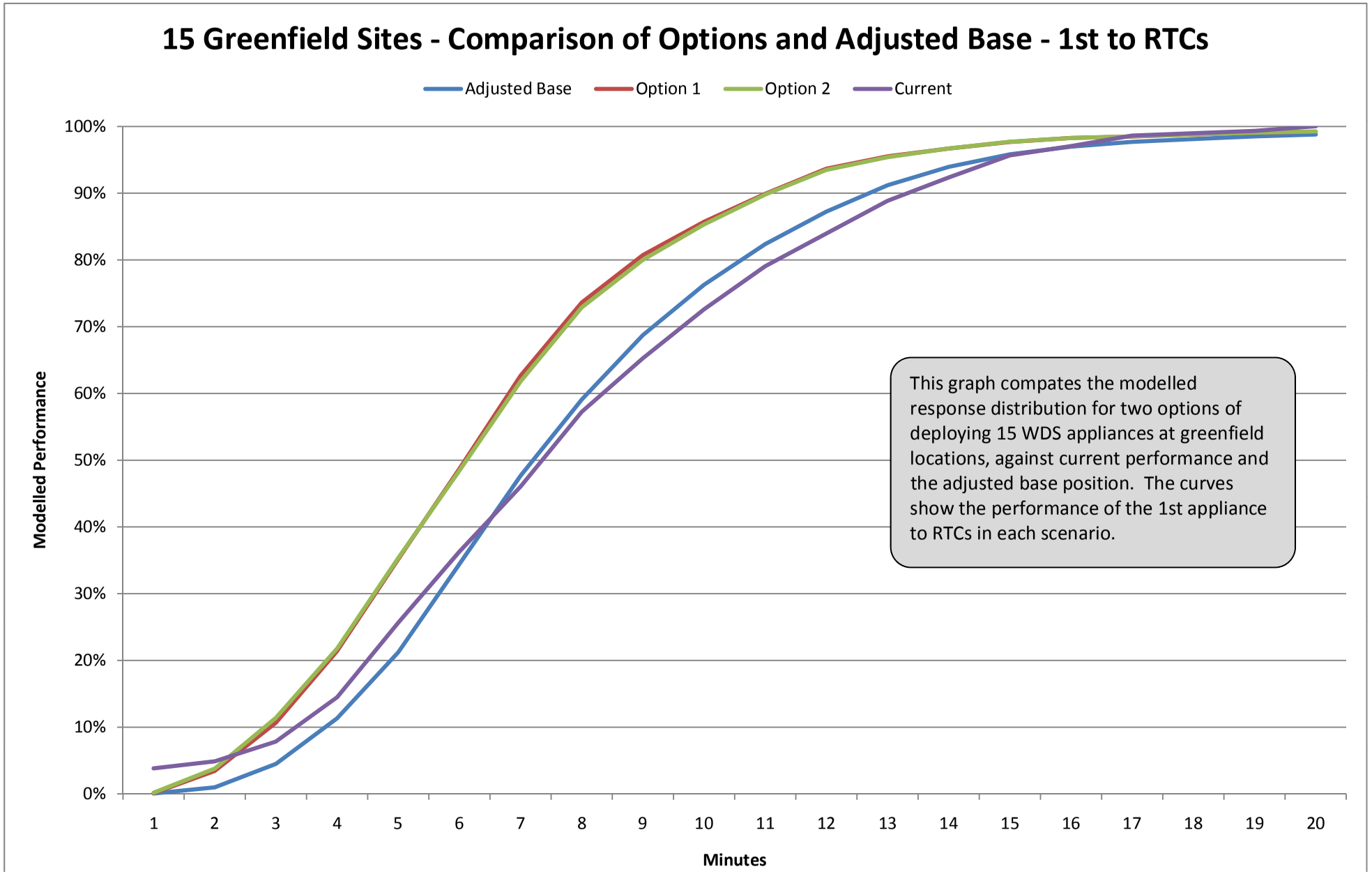
C6a


15 Greenfield Sites - Comparison of Options and Adjusted Base - 1st to PDFs
Adjusted Base
Option 1
Option 2
Current
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Modelled Performance
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
Minutes
This graph compates the modelled response distribution for two options of deploying 15 WDS appliances at greenfield locations, against current performance and the adjusted base position. The curves show the performance of the 1st appliance to Dwelling Fires in each scenario.

C6b


15 Greenfield Sites - Comparison of Options and Adjusted Base - 2nd to PDFs
Adjusted Base
Option 1
Option 2
Current
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Modelled Performance
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
Minutes
This graph compates the modelled response distribution for two options of deploying 15 WDS appliances at greenfield locations, against current performance and the adjusted base position. The curves show the performance of the 2nd appliance to Dwelling Fires in each scenario.

C6c


15 Greenfield Sites - Comparison of Options and Adjusted Base - 1st to RTCs
Adjusted Base
Option 1
Option 2
Current
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Modelled Performance
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
Minutes
This graph compates the modelled response distribution for two options of deploying 15 WDS appliances at greenfield locations, against current performance and the adjusted base position. The curves show the performance of the 1st appliance to RTCs in each scenario.

C6d

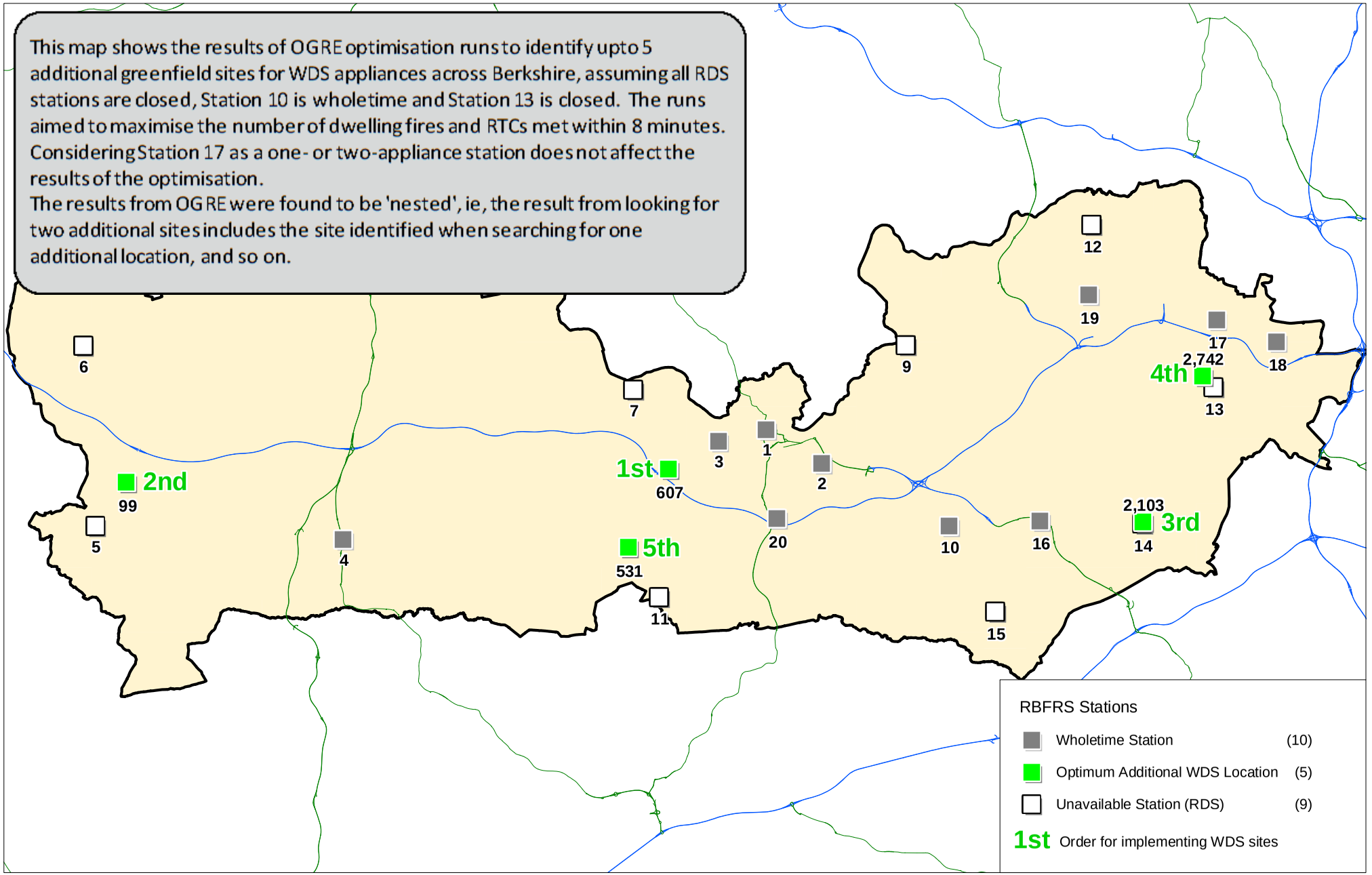
D Additional WDS Appliances *(Tasks 3 & 4)*

D1 Map of Additional Optimum Locations

D2 Simulation Results for 1 to 5 Additional Optimum Locations

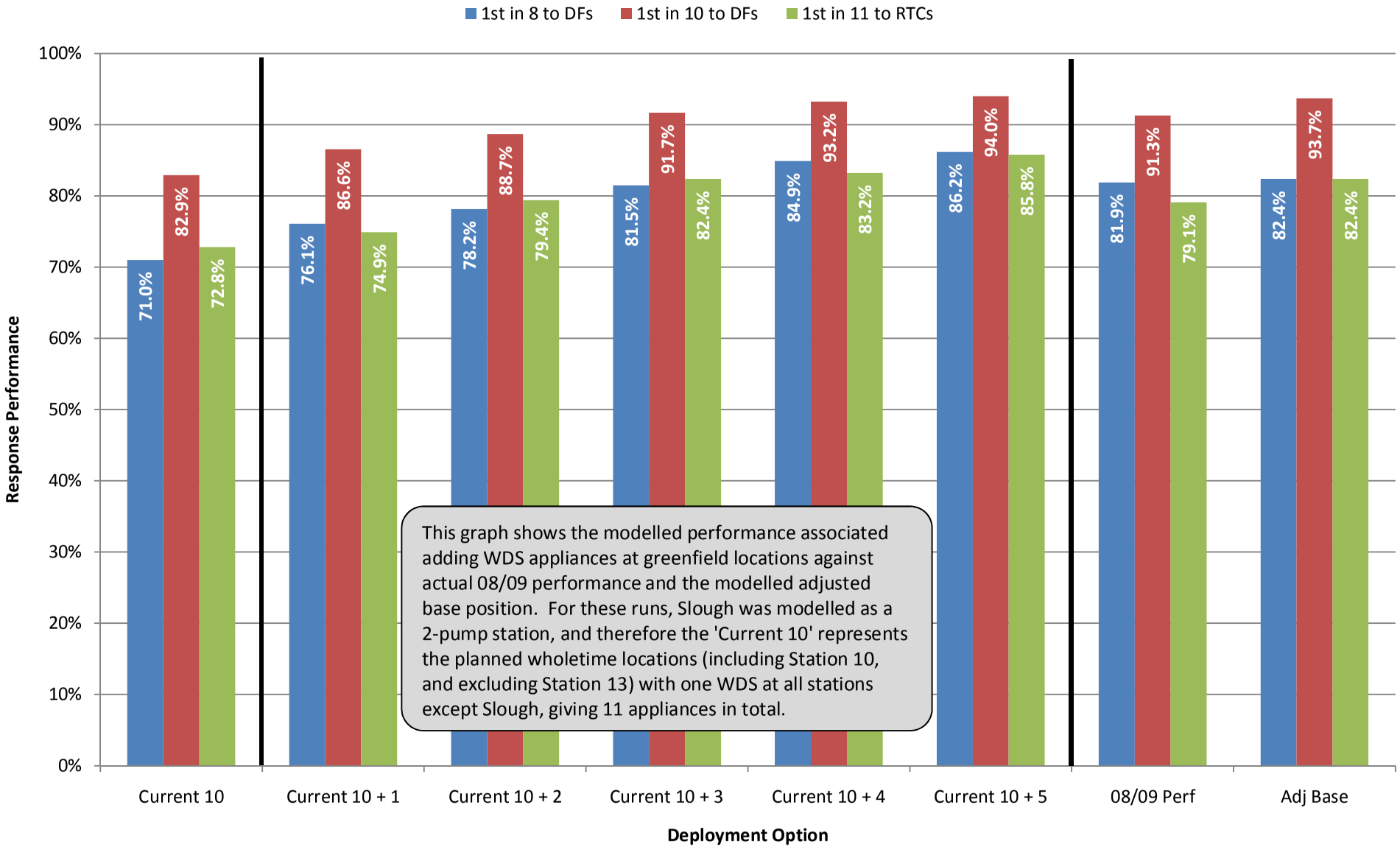
D2a Two Pumps at Slough
D2b One Pump at Slough

Additional WDS Units to Meet 1st Pump Attendance Times (Stn 10 = WDS; Stn 13 = Not Included)



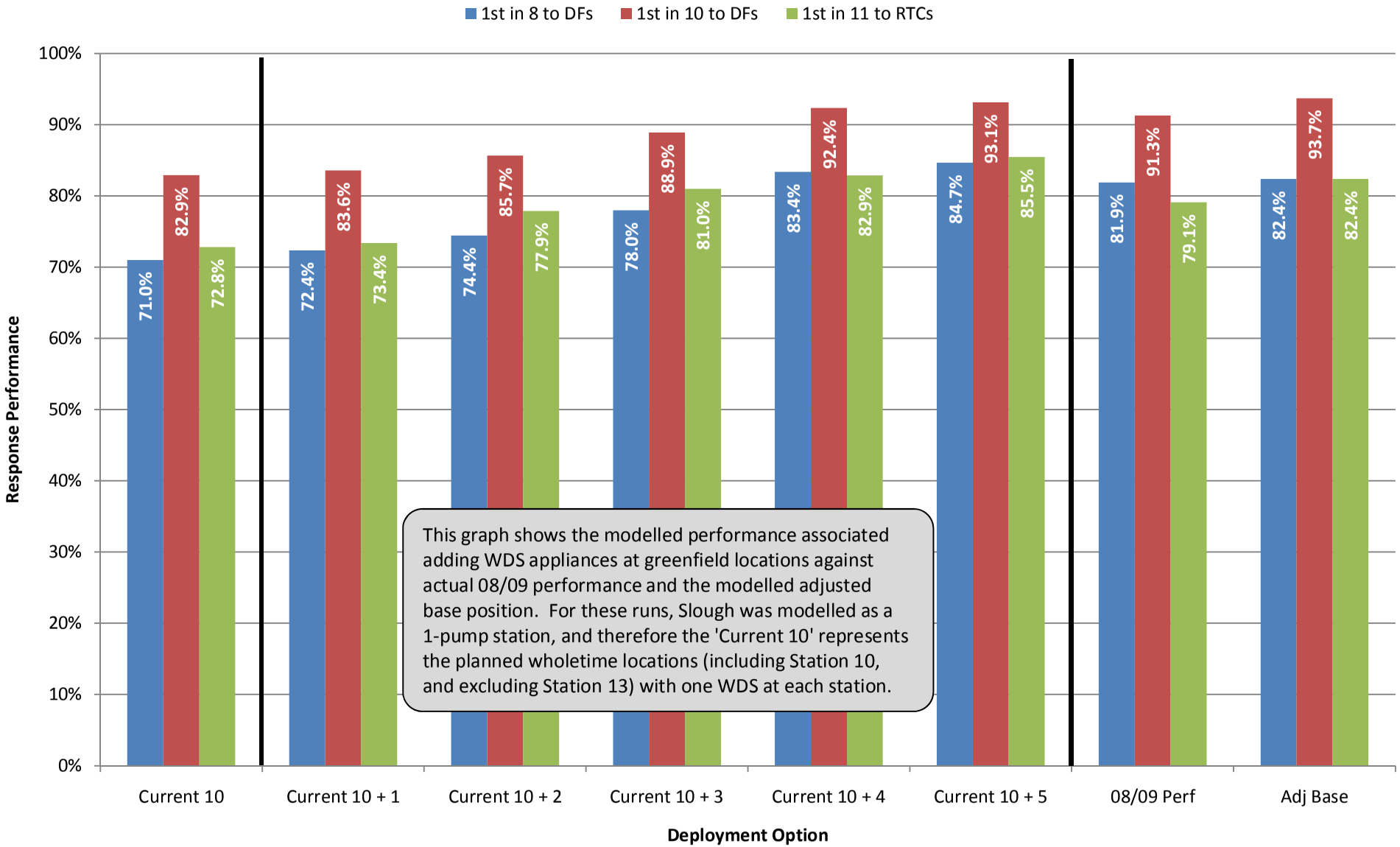
D1

Modelling Option 3 - Additional WDS Units to Current Stations - 2 Pumps at Slough



D2a

Modelling Option 3 - Additional WDS Units to Current Stations - 1 Pump at Slough



D2b

E Closing 3 RDS Stations & Creating Two Additional WDS Appliances *(Task 15)*

E1 Task 15 Deployment

E1a Map of Optimal Locations
E1b Table of Deployment Options Modelled

E2 Full Simulation Results – 24/7 Period

E2a Table of Results
E2b 1st Appliance to DFs
E2c 2nd Appliance to DFs
E2d 1st Appliance to RTCs
E2e Map of Changes in Response Times

E3 Full Simulation Results – Day Period (*)

E4 Full Simulation Results – Evening Period (*)

E5 Full Simulation Results – Night Period (*)

E6 Average and Maximum Response Times by Area

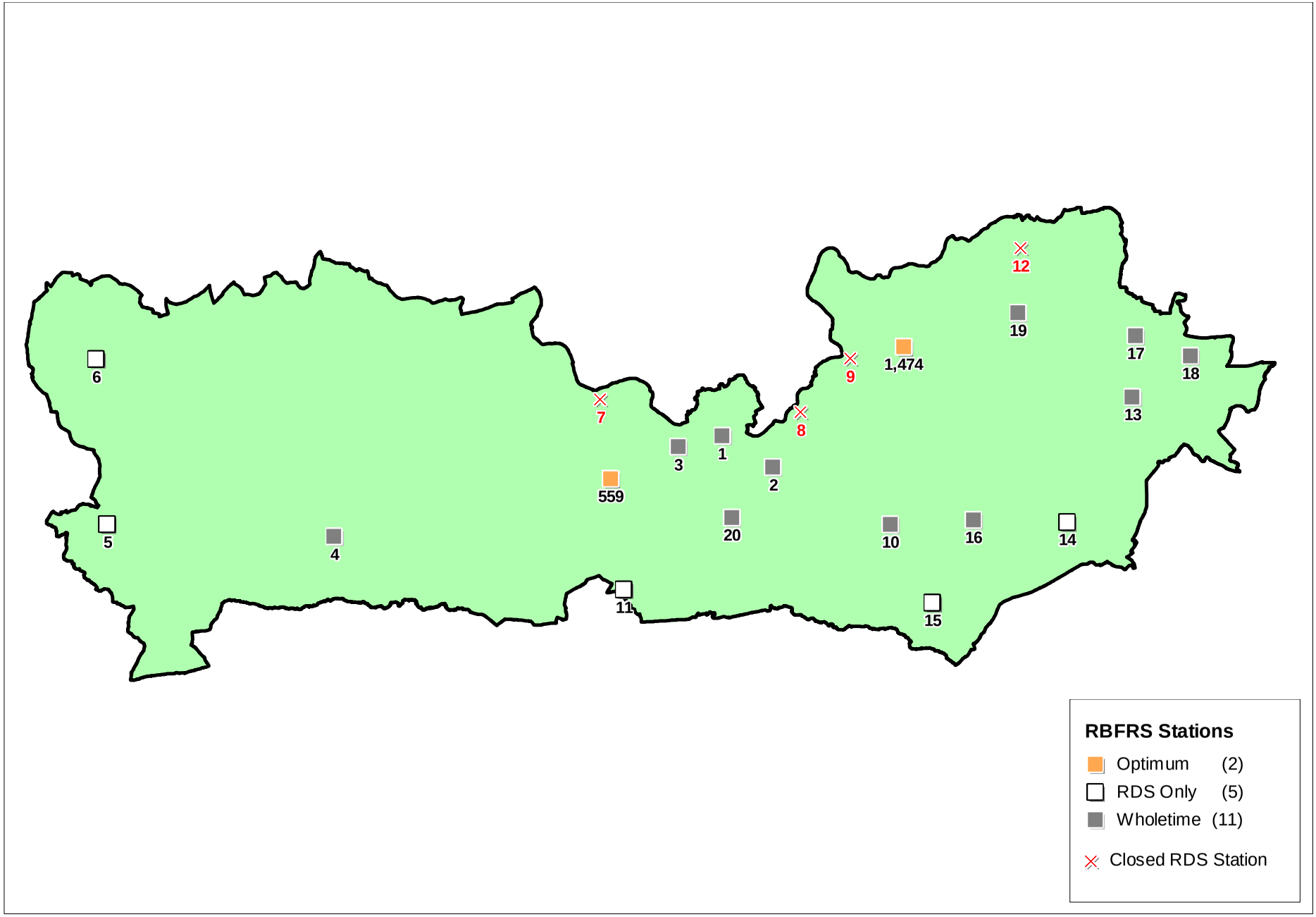
E6a Pangbourne
E6b Wargrave
E6c Cookham

E7 Incidents Affected by Station Ground

E7a Average Annual Number of Incidents
E7b Percentage of Incidents

(*) – Appendix follows same structure as E2

Task 15 – Optimal Configuration



E1a

Royal Berkshire Fire & Rescue Service

Deployment Options Modelled for Closing 3 RDS Stations & Deploying Two Additional Day-Only Appliances

Station Number	Station Name	Current	Adjusted Base	Current + 10 & 13	Proposed Solution (Task 15)
1	Caversham Road	WDS	WDS	WDS	WDS
2	Wokingham Road	WDS	WDS	WDS	WDS
3	Dee Road	WDS	WDS	WDS	WDS
4	Newbury	WDS + RDS (Current %)	WDS + RDS (100%)	WDS + RDS (Current %)	WDS + RDS (100%)
5	Hungerford	RDS (Current %)	RDS (100%)	RDS (Current %)	RDS (100%)
6	Lambourn	RDS (Current %)	RDS (100%)	RDS (Current %)	RDS (100%)
7	Pangbourne	RDS (Current %)	RDS (100%)	RDS (Current %)	Closed
9	Wargrave	RDS (Current %)	RDS (100%)	RDS (Current %)	Closed
10	Wokingham	Day Crewed	WDS	WDS	WDS
11	Mortimer	RDS (Current %)	RDS (100%)	RDS (Current %)	RDS (100%)
12	Cookham	RDS (Current %)	RDS (100%)	RDS (Current %)	Closed
13	Windsor	WDS	Day Crewed (8am-8pm)	Day Crewed (8am-8pm)	Day Crewed (8am-8pm)
14	Ascot	RDS (Current %)	RDS (100%)	RDS (Current %)	RDS (100%)
15	Crowthorne	RDS (Current %)	RDS (100%)	RDS (Current %)	RDS (100%)
16	Bracknell	WDS + RDS (Current %)	WDS + RDS (100%)	WDS + RDS (Current %)	WDS + RDS (100%)
17	Slough	WDS (2 Crews)	WDS (2 Crews)	WDS (2 Crews)	WDS (2 Crews)
18	Langley	WDS	WDS	WDS	WDS
19	Maidenhead	WDS + RDS (Current %)	WDS + RDS (100%)	WDS + RDS (Current %)	WDS + RDS (100%)
20	Whitley Wood	WDS	WDS	WDS	WDS
559	Theale	-	-	-	Day Crewed (8am-4pm)
1474	Knowl Hill	-	-	-	Day Crewed (8am-4pm)

Notes:

Station 8 (Sonning) is closed is all options

'Adjusted Base' is used to compare greenfield options and individual station closures

The 'Current + 10 & 13' deployment is used to compare the Task 15 Option and includes Station 10 as WDS and Station 13 as Day-Crewed.
100% RDS availability will only be achieved if the Retained Support Officers are introduced at the two new optimal locations.

Station 17 (Slough) is modelled as both a one- and two-pump station in Appendix D

Royal Berkshire Fire & Rescue Service

Response Distributions for Task 15 Proposed Option - 24/7

Performance Against Current Deployment + Changes to Stations 10 & 13

1st Appliance to Dwelling Fires

Mins	1	2	3	4	5	6	7	**8**	9	**10**	11	12	13	14	15	16	17	18	19	20
Current + 10 & 13	0.0%	0.5%	4.9%	16.6%	35.9%	56.0%	70.6%	**81.0%**	88.2%	**92.4%**	95.5%	97.1%	98.2%	98.9%	99.4%	99.5%	99.7%	99.8%	99.8%	99.9%
Proposed Solution (Task 15)	0.0%	0.5%	5.2%	17.2%	36.6%	56.9%	71.9%	**82.7%**	89.9%	**94.0%**	96.7%	98.0%	98.8%	99.3%	99.7%	99.8%	99.9%	100.0%	100.0%	100.0%

2nd Appliance to Dwelling Fires

Mins	1	2	3	4	5	6	7	8	9	**10**	11	**12**	13	14	15	16	17	18	19	20
Current + 10 & 13	0.0%	0.0%	0.6%	3.0%	8.6%	17.6%	29.1%	43.9%	57.2%	**69.2%**	78.8%	**85.1%**	89.7%	92.6%	94.4%	95.6%	96.6%	97.5%	98.2%	98.8%
Proposed Solution (Task 15)	0.0%	0.0%	0.6%	3.2%	8.9%	18.2%	30.2%	45.7%	59.9%	**72.0%**	81.8%	**88.1%**	92.5%	95.2%	96.8%	97.8%	98.5%	99.0%	99.3%	99.6%

1st Appliance to RTCs

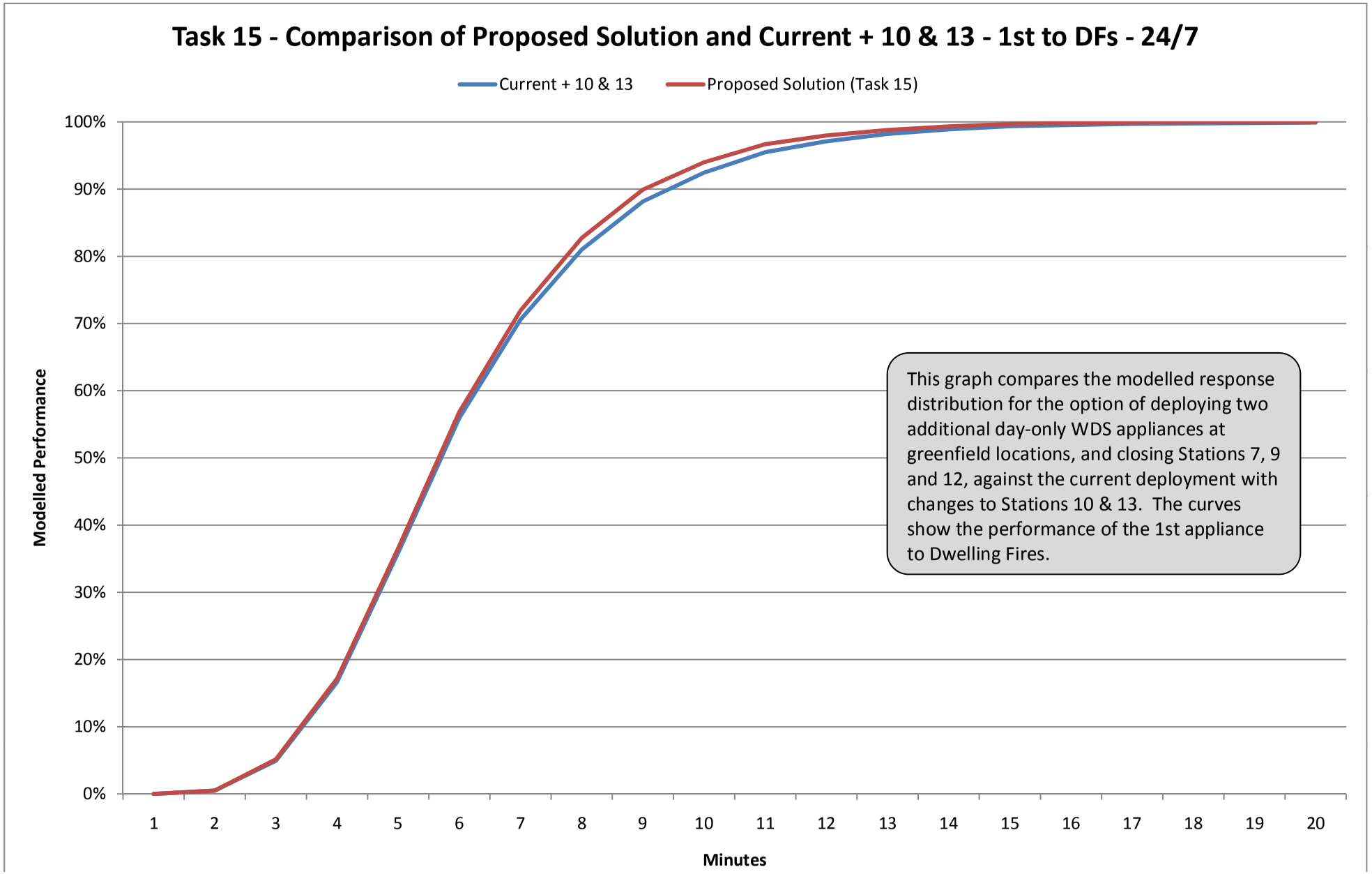
Mins	1	2	3	4	5	6	7	8	9	10	**11**	12	13	14	15	16	17	18	19	20
Current + 10 & 13	0.1%	1.0%	4.5%	11.2%	20.9%	33.6%	46.5%	57.4%	66.7%	74.2%	**80.3%**	85.5%	89.7%	92.6%	94.8%	96.4%	97.2%	97.9%	98.3%	98.6%
Proposed Solution (Task 15)	0.1%	1.0%	4.7%	11.9%	22.0%	35.4%	48.6%	60.0%	69.8%	77.0%	**82.7%**	87.5%	91.2%	93.9%	95.5%	96.7%	97.5%	98.1%	98.4%	98.8%

Note:

'Current 10 & 13' assumes current availability at RDS stations and new crewing arrangements at Stations 10 & 13

This table provides the modelled option for deploying two additional, day-only WDS appliances at greenfield locations, and closing Stations 7, 9 and 12, against the current deployment with changes to Stations 10 & 13. The impacts are shown for the 24/7 period, and cover 1st and 2nd appliance to DFs and 1st to RTCs.

E2a


Task 15 - Comparison of Proposed Solution and Current + 10 & 13 - 1st to DFs - 24/7
Current + 10 & 13
Proposed Solution (Task 15)
Modelled Performance
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
1
2
3
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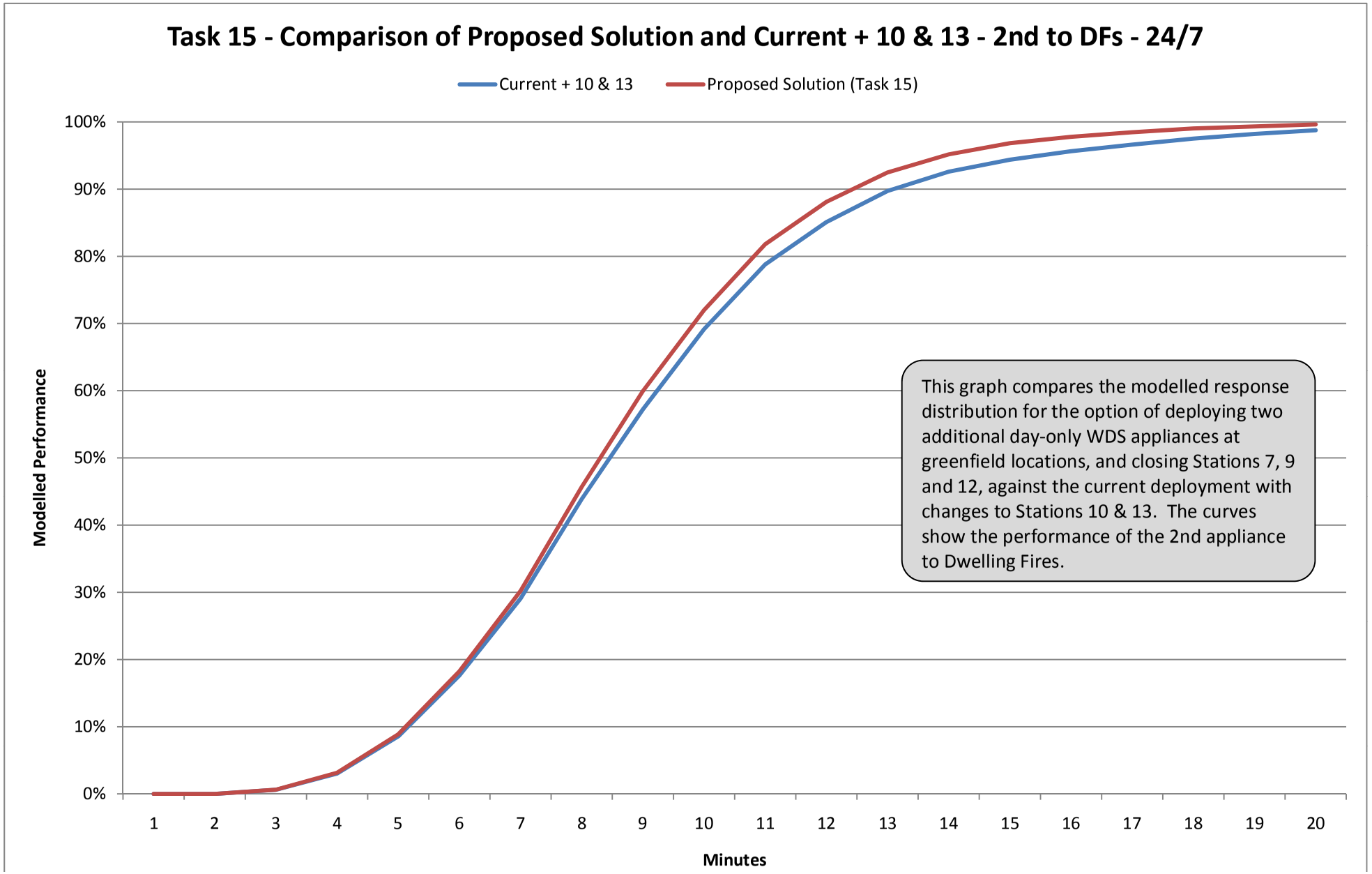
Minutes
This graph compares the modelled response distribution for the option of deploying two additional day-only WDS appliances at greenfield locations, and closing Stations 7, 9 and 12, against the current deployment with changes to Stations 10 & 13. The curves show the performance of the 1st appliance to Dwelling Fires.

E2b


Task 15 - Comparison of Proposed Solution and Current + 10 & 13 - 2nd to DFs - 24/7
Current + 10 & 13
Proposed Solution (Task 15)
Modelled Performance
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
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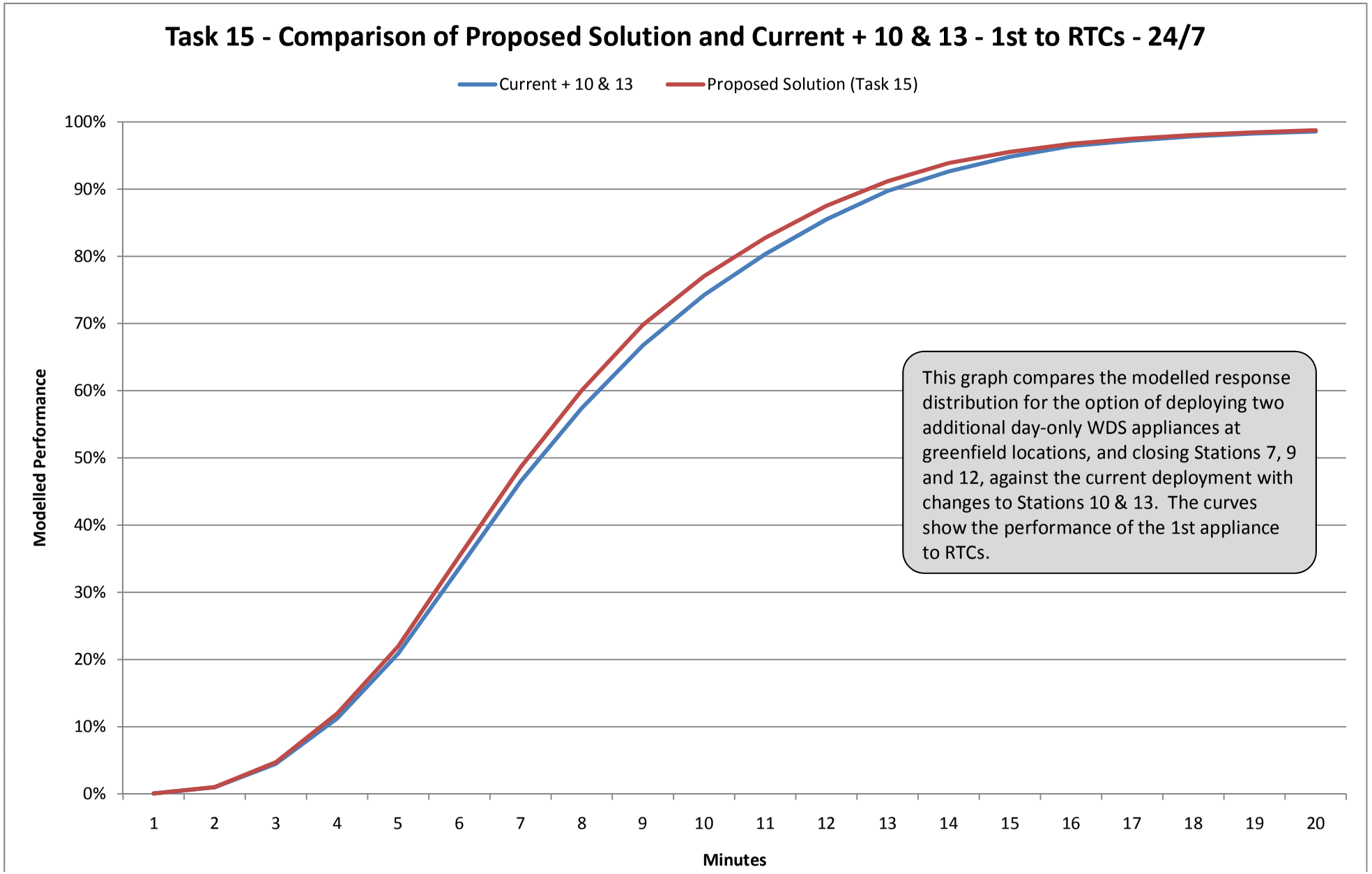
Minutes
This graph compares the modelled response distribution for the option of deploying two additional day-only WDS appliances at greenfield locations, and closing Stations 7, 9 and 12, against the current deployment with changes to Stations 10 & 13. The curves show the performance of the 2nd appliance to Dwelling Fires.

E2c


Task 15 - Comparison of Proposed Solution and Current + 10 & 13 - 1st to RTCs - 24/7
Current + 10 & 13
Proposed Solution (Task 15)
Modelled Performance
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
1
2
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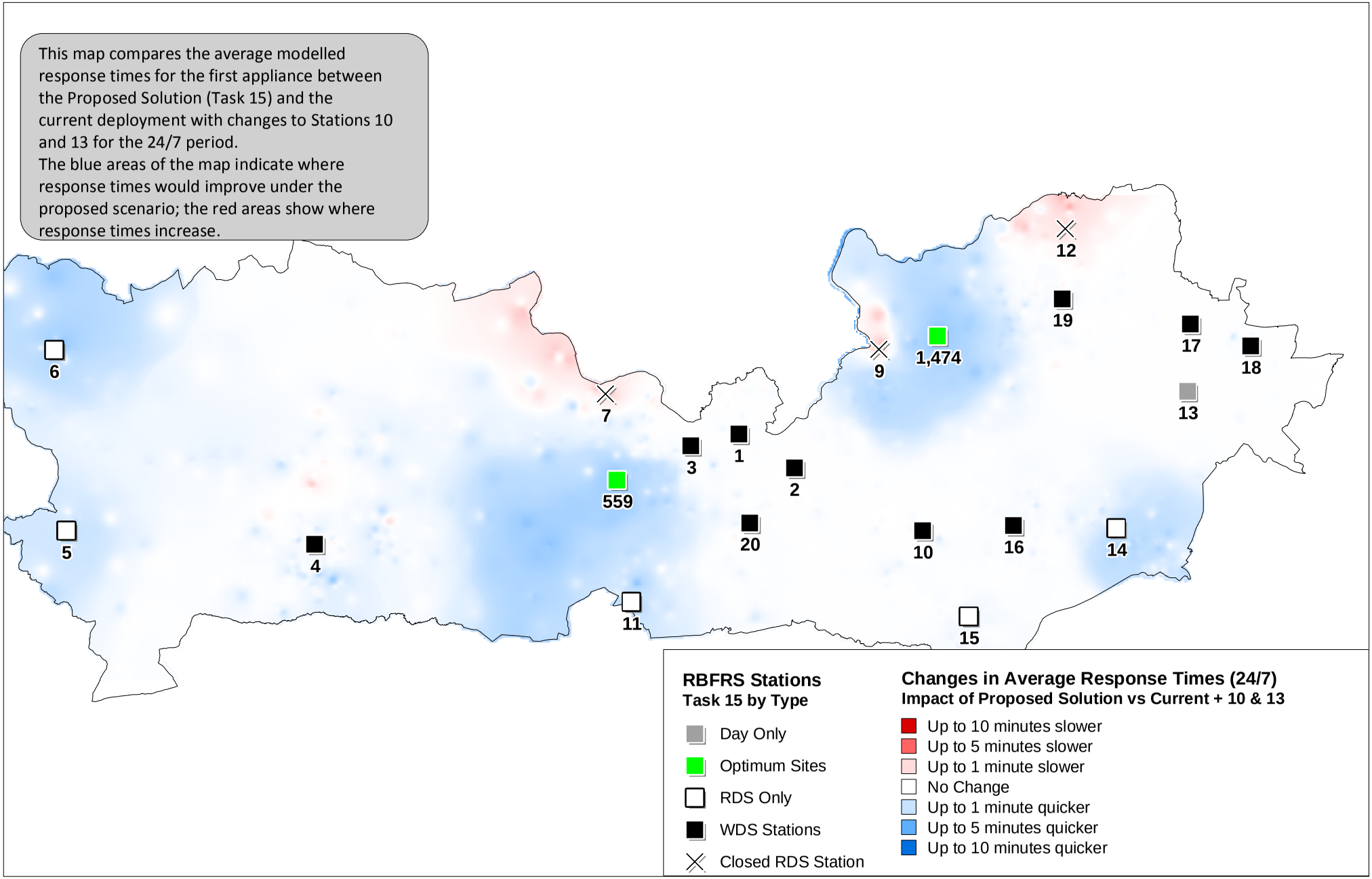
Minutes
This graph compares the modelled response distribution for the option of deploying two additional day-only WDS appliances at greenfield locations, and closing Stations 7, 9 and 12, against the current deployment with changes to Stations 10 & 13. The curves show the performance of the 1st appliance to RTCs.

E2d

Proposed Solution vs Current + 10 & 13 - 24/7



E2e

Royal Berkshire Fire & Rescue Service

Response Distributions for Task 15 Proposed Option - DAY

Performance Against Current Deployment + Changes to Stations 10 & 13

1st Appliance to Dwelling Fires

Mins	1	2	3	4	5	6	7	**8**	9	**10**	11	12	13	14	15	16	17	18	19	20
Current + 10 & 13	0.0%	0.5%	4.9%	15.6%	34.9%	54.5%	69.1%	**79.3%**	86.3%	**90.4%**	93.7%	95.8%	97.1%	98.2%	99.0%	99.3%	99.5%	99.5%	99.7%	99.8%
Proposed Solution (Task 15)	0.0%	0.5%	5.4%	16.9%	36.6%	56.9%	72.6%	**83.8%**	90.8%	**94.3%**	97.0%	98.3%	98.8%	99.2%	99.8%	99.9%	100.0%	100.0%	100.0%	100.0%

2nd Appliance to Dwelling Fires

Mins	1	2	3	4	5	6	7	8	9	**10**	11	**12**	13	14	15	16	17	18	19	20
Current + 10 & 13	0.0%	0.0%	0.6%	3.0%	8.4%	17.4%	28.1%	42.3%	55.1%	**67.4%**	77.1%	**83.4%**	87.7%	90.5%	92.5%	93.7%	94.9%	96.0%	96.9%	97.8%
Proposed Solution (Task 15)	0.0%	0.0%	0.6%	3.2%	8.8%	18.2%	29.8%	45.4%	60.3%	**73.0%**	83.1%	**89.3%**	93.7%	96.2%	97.7%	98.6%	98.9%	99.4%	99.6%	99.8%

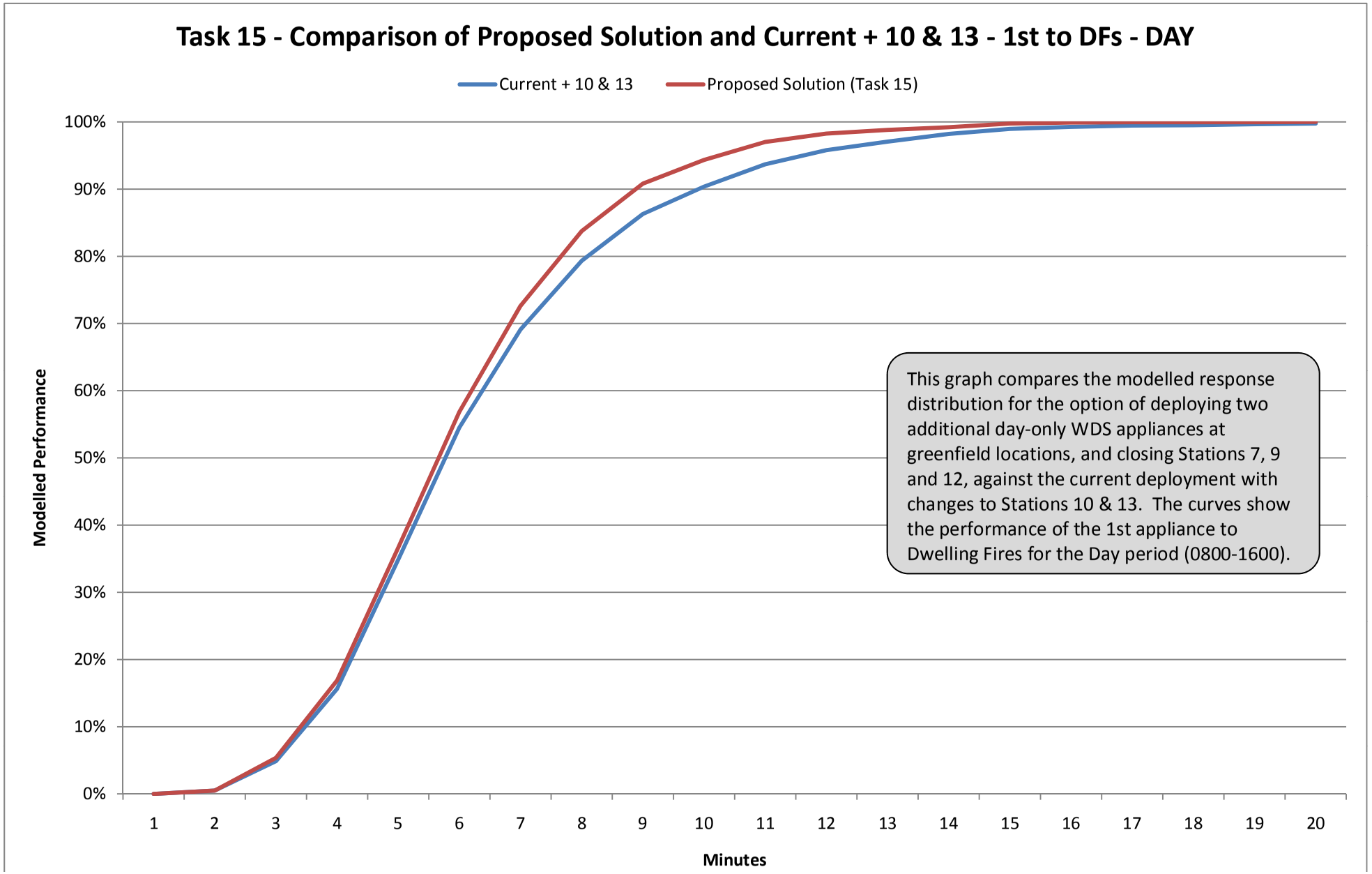
1st Appliance to RTCs

Mins	1	2	3	4	5	6	7	8	9	10	**11**	12	13	14	15	16	17	18	19	20
Current + 10 & 13	0.1%	1.1%	5.1%	12.1%	23.0%	36.1%	48.8%	59.4%	68.2%	75.4%	**81.0%**	86.1%	90.5%	93.1%	95.2%	96.5%	97.3%	98.0%	98.2%	98.5%
Proposed Solution (Task 15)	0.1%	1.2%	5.7%	14.2%	26.1%	41.2%	55.0%	67.1%	77.2%	83.8%	**88.2%**	92.0%	94.4%	96.3%	97.1%	97.5%	98.0%	98.4%	98.6%	98.9%

Note:

'Current 10 & 13' assumes current availability at RDS stations and new crewing arrangements at Stations 10 & 13

This table provides the modelled option for deploying two additional, day-only WDS appliances at greenfield locations, and closing Stations 7, 9 and 12, against the current deployment with changes to Stations 10 & 13. The impacts are shown for the Day period (0800-1600), and cover 1st and 2nd appliance to DFs and 1st to RTCs.


Task 15 - Comparison of Proposed Solution and Current + 10 & 13 - 1st to DFs - DAY
Current + 10 & 13
Proposed Solution (Task 15)
Modelled Performance
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
1
2
3
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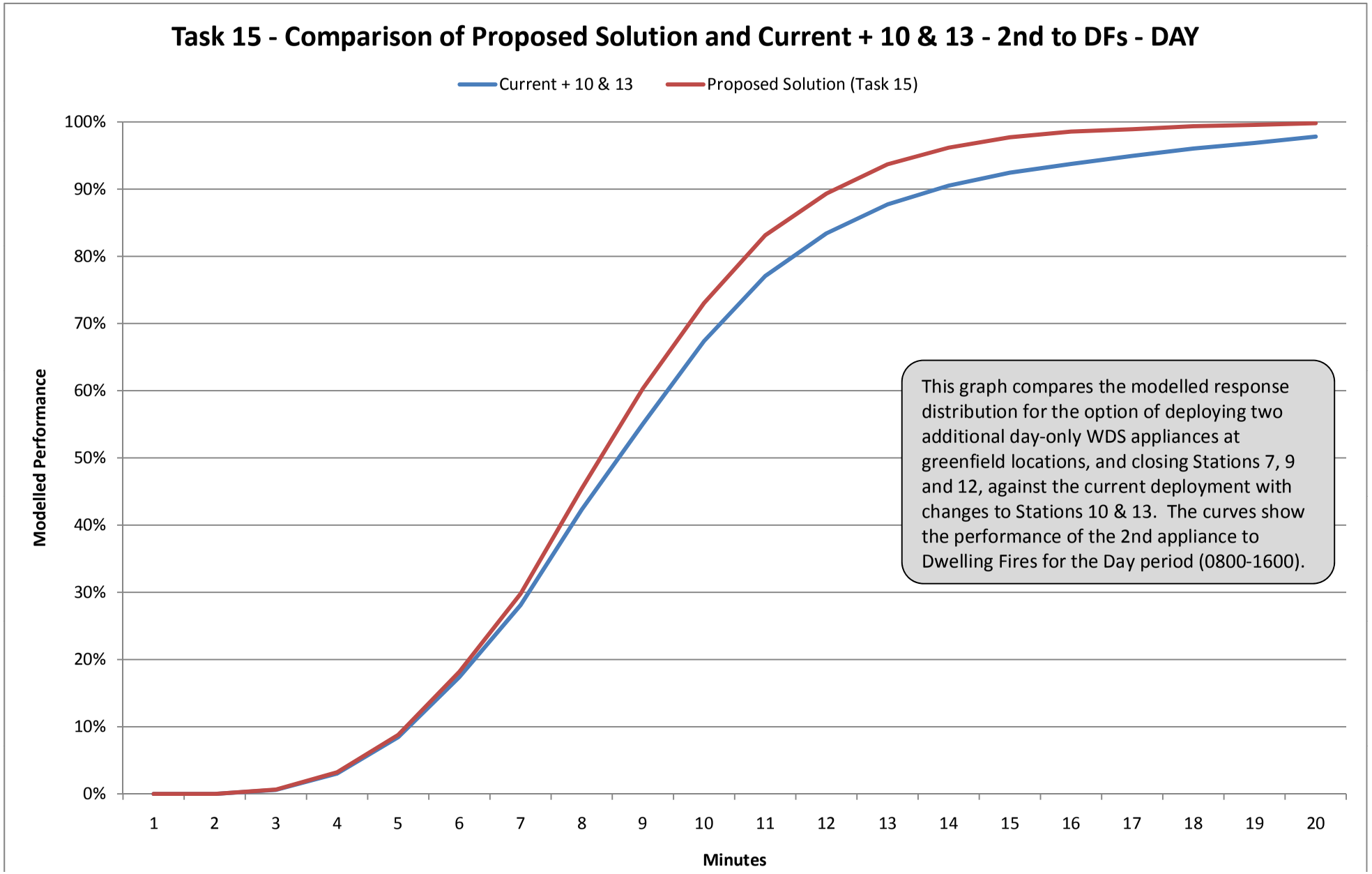
Minutes
This graph compares the modelled response distribution for the option of deploying two additional day-only WDS appliances at greenfield locations, and closing Stations 7, 9 and 12, against the current deployment with changes to Stations 10 & 13. The curves show the performance of the 1st appliance to Dwelling Fires for the Day period (0800-1600).

E3b


Task 15 - Comparison of Proposed Solution and Current + 10 & 13 - 2nd to DFs - DAY
Current + 10 & 13
Proposed Solution (Task 15)
Modelled Performance
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
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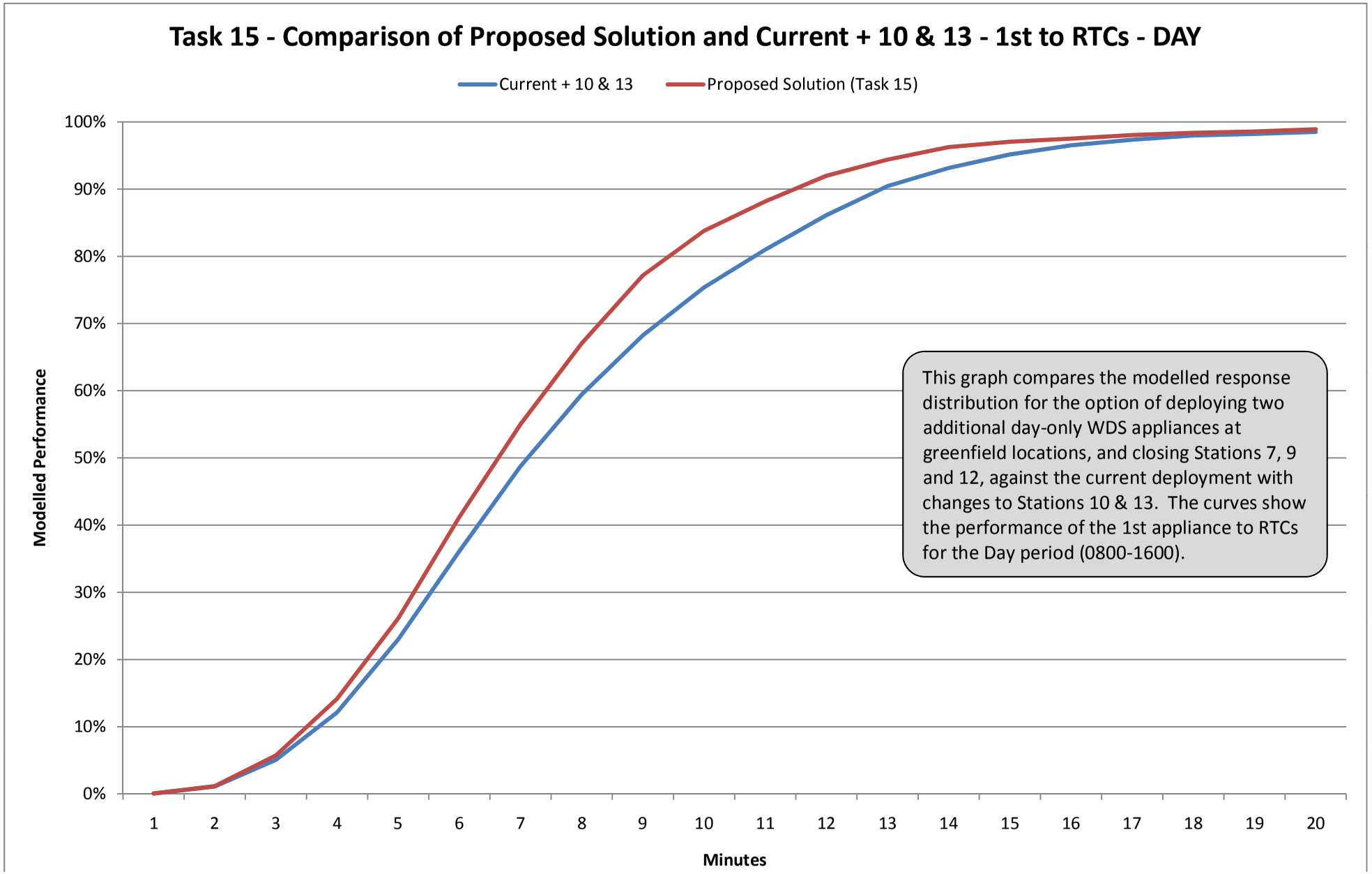
Minutes
This graph compares the modelled response distribution for the option of deploying two additional day-only WDS appliances at greenfield locations, and closing Stations 7, 9 and 12, against the current deployment with changes to Stations 10 & 13. The curves show the performance of the 2nd appliance to Dwelling Fires for the Day period (0800-1600).


Task 15 - Comparison of Proposed Solution and Current + 10 & 13 - 1st to RTCs - DAY
Current + 10 & 13
Proposed Solution (Task 15)
Modelled Performance
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
1
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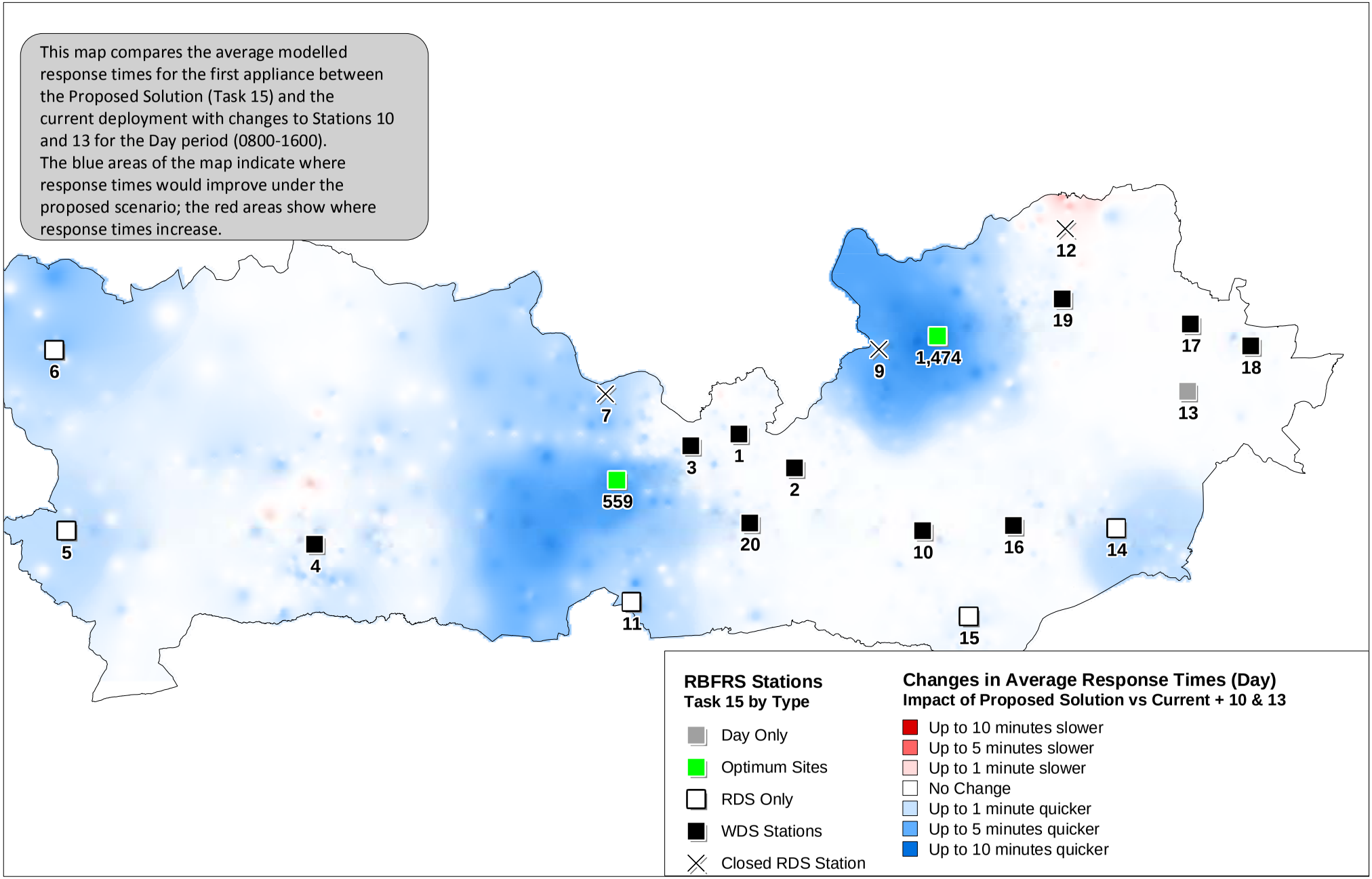
Minutes
This graph compares the modelled response distribution for the option of deploying two additional day-only WDS appliances at greenfield locations, and closing Stations 7, 9 and 12, against the current deployment with changes to Stations 10 & 13. The curves show the performance of the 1st appliance to RTCs for the Day period (0800-1600).

E3d

Proposed Solution vs Current + 10 & 13 - Day



E3e

Royal Berkshire Fire & Rescue Service

Response Distributions for Task 15 Proposed Option - EVENING

Performance Against Current Deployment + Changes to Stations 10 & 13

1st Appliance to Dwelling Fires

Mins	1	2	3	4	5	6	7	**8**	9	**10**	11	12	13	14	15	16	17	18	19	20
Current + 10 & 13	0.0%	0.5%	5.7%	19.2%	39.7%	59.9%	73.8%	**83.7%**	90.5%	**94.7%**	97.0%	98.1%	98.9%	99.3%	99.5%	99.6%	99.8%	99.9%	99.9%	100.0%
Proposed Solution (Task 15)	0.0%	0.5%	5.7%	19.3%	39.6%	59.9%	73.8%	**83.7%**	90.5%	**94.7%**	96.9%	98.0%	98.8%	99.4%	99.6%	99.6%	99.8%	99.9%	100.0%	100.0%

2nd Appliance to Dwelling Fires

Mins	1	2	3	4	5	6	7	8	9	**10**	11	**12**	13	14	15	16	17	18	19	20
Current + 10 & 13	0.0%	0.0%	0.8%	3.4%	9.8%	19.2%	31.8%	47.6%	61.2%	**72.7%**	81.9%	**88.0%**	92.3%	94.6%	95.8%	97.2%	97.9%	98.8%	99.2%	99.5%
Proposed Solution (Task 15)	0.0%	0.0%	0.8%	3.5%	10.1%	19.8%	32.7%	48.6%	62.3%	**73.8%**	82.8%	**89.0%**	92.8%	95.2%	96.5%	97.5%	98.3%	99.0%	99.2%	99.6%

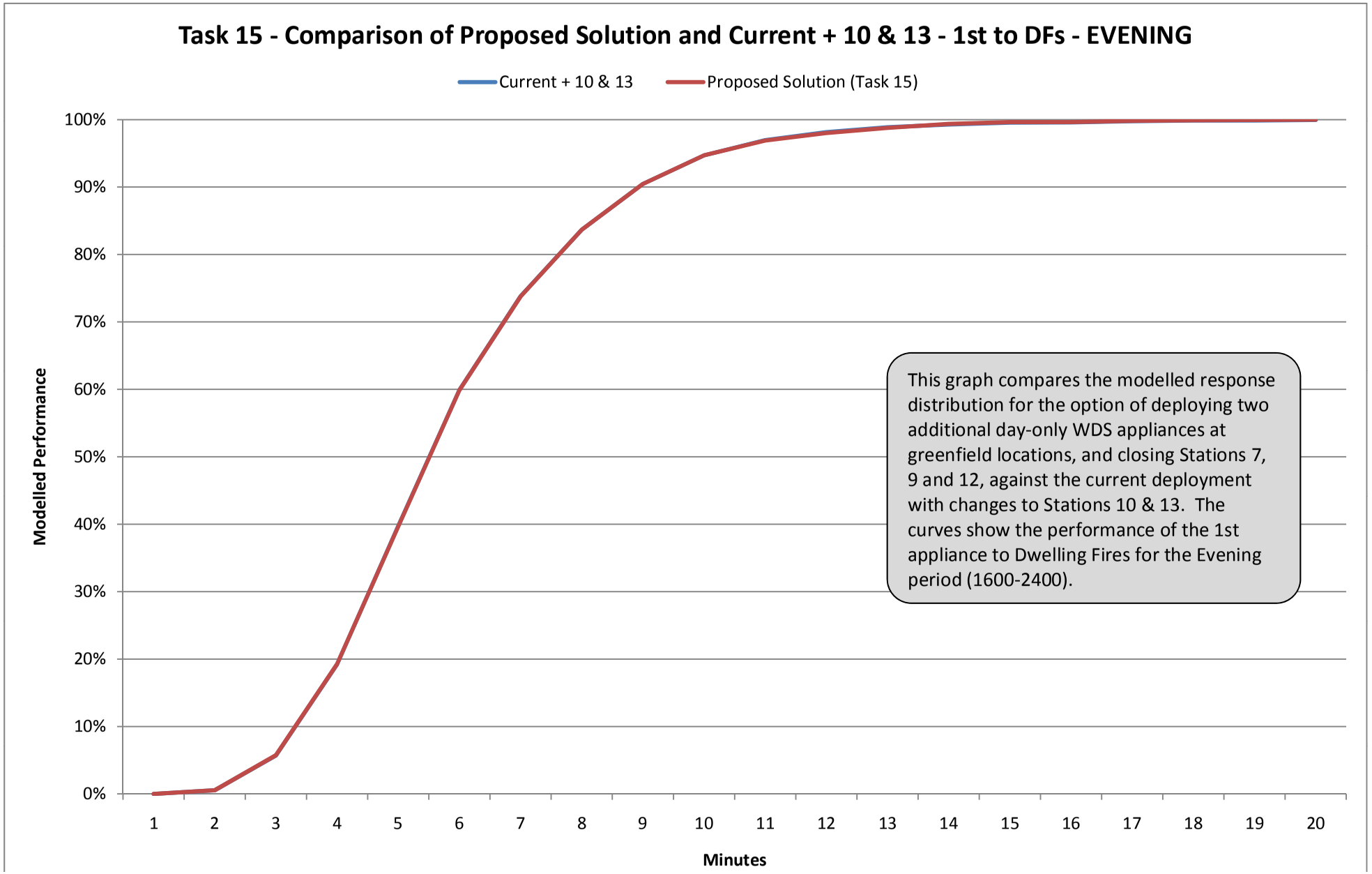
1st Appliance to RTCs

Mins	1	2	3	4	5	6	7	8	9	10	**11**	12	13	14	15	16	17	18	19	20
Current + 10 & 13	0.1%	1.0%	4.6%	11.6%	21.5%	34.9%	48.0%	59.1%	68.6%	76.4%	**82.2%**	87.2%	90.7%	93.7%	95.5%	97.0%	97.6%	98.1%	98.4%	98.8%
Proposed Solution (Task 15)	0.1%	1.0%	4.6%	11.5%	21.2%	34.4%	47.4%	58.4%	67.9%	75.7%	**81.7%**	86.9%	90.6%	93.7%	95.5%	97.0%	97.6%	98.2%	98.5%	98.8%

Note:

'Current 10 & 13' assumes current availability at RDS stations and new crewing arrangements at Stations 10 & 13

This table provides the modelled option for deploying two additional, day-only WDS appliances at greenfield locations, and closing Stations 7, 9 and 12, against the current deployment with changes to Stations 10 & 13. The impacts are shown for the Evening period (1600-2400), and cover 1st and 2nd appliance to DFs and 1st to RTCs.


Task 15 - Comparison of Proposed Solution and Current + 10 & 13 - 1st to DFs - EVENING
Current + 10 & 13
Proposed Solution (Task 15)
Modelled Performance
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
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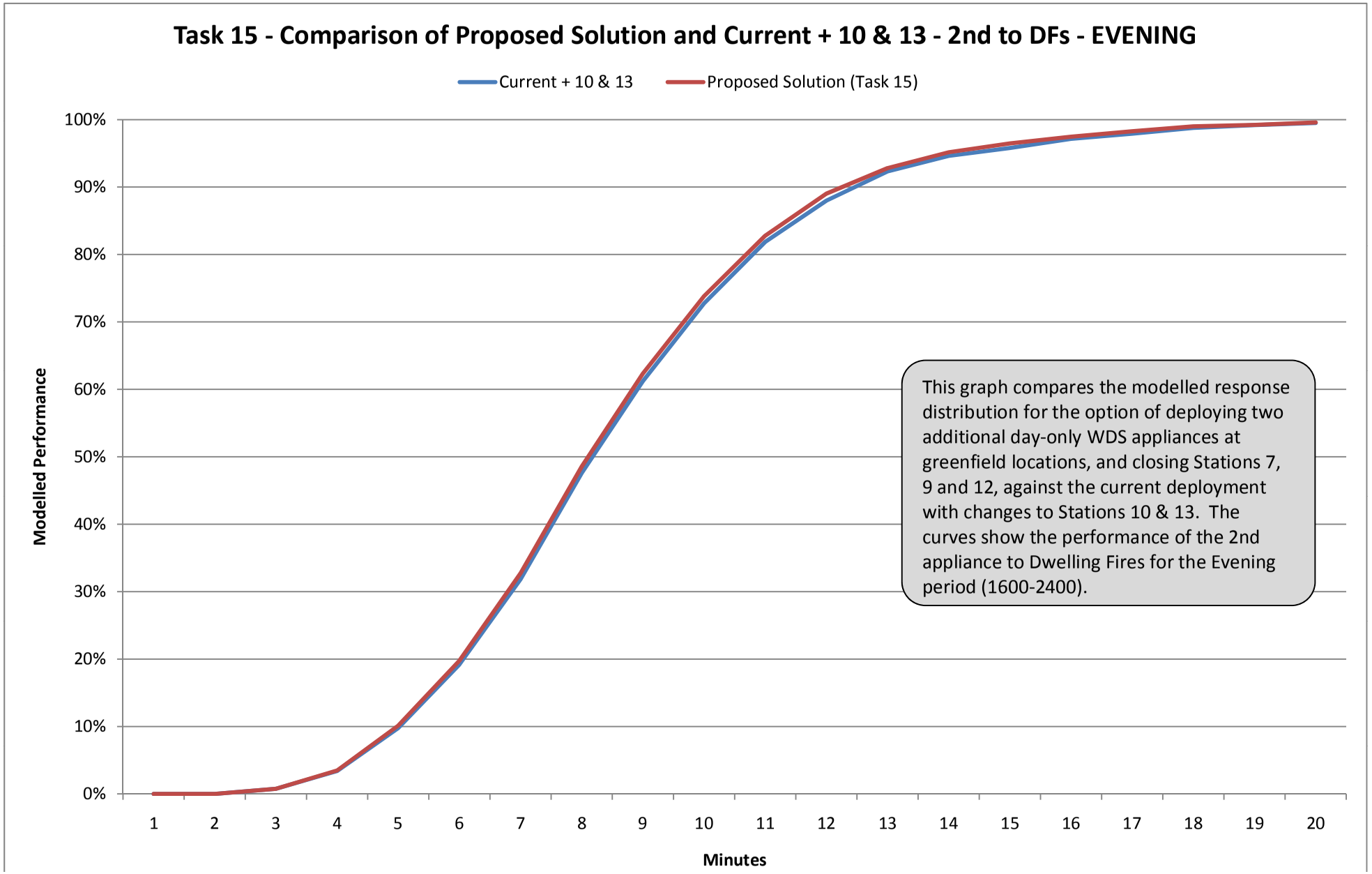
20
Minutes
This graph compares the modelled response distribution for the option of deploying two additional day-only WDS appliances at greenfield locations, and closing Stations 7, 9 and 12, against the current deployment with changes to Stations 10 & 13. The curves show the performance of the 1st appliance to Dwelling Fires for the Evening period (1600-2400).

E4b


Task 15 - Comparison of Proposed Solution and Current + 10 & 13 - 2nd to DFs - EVENING
Current + 10 & 13
Proposed Solution (Task 15)
Modelled Performance
100%
90%
80%
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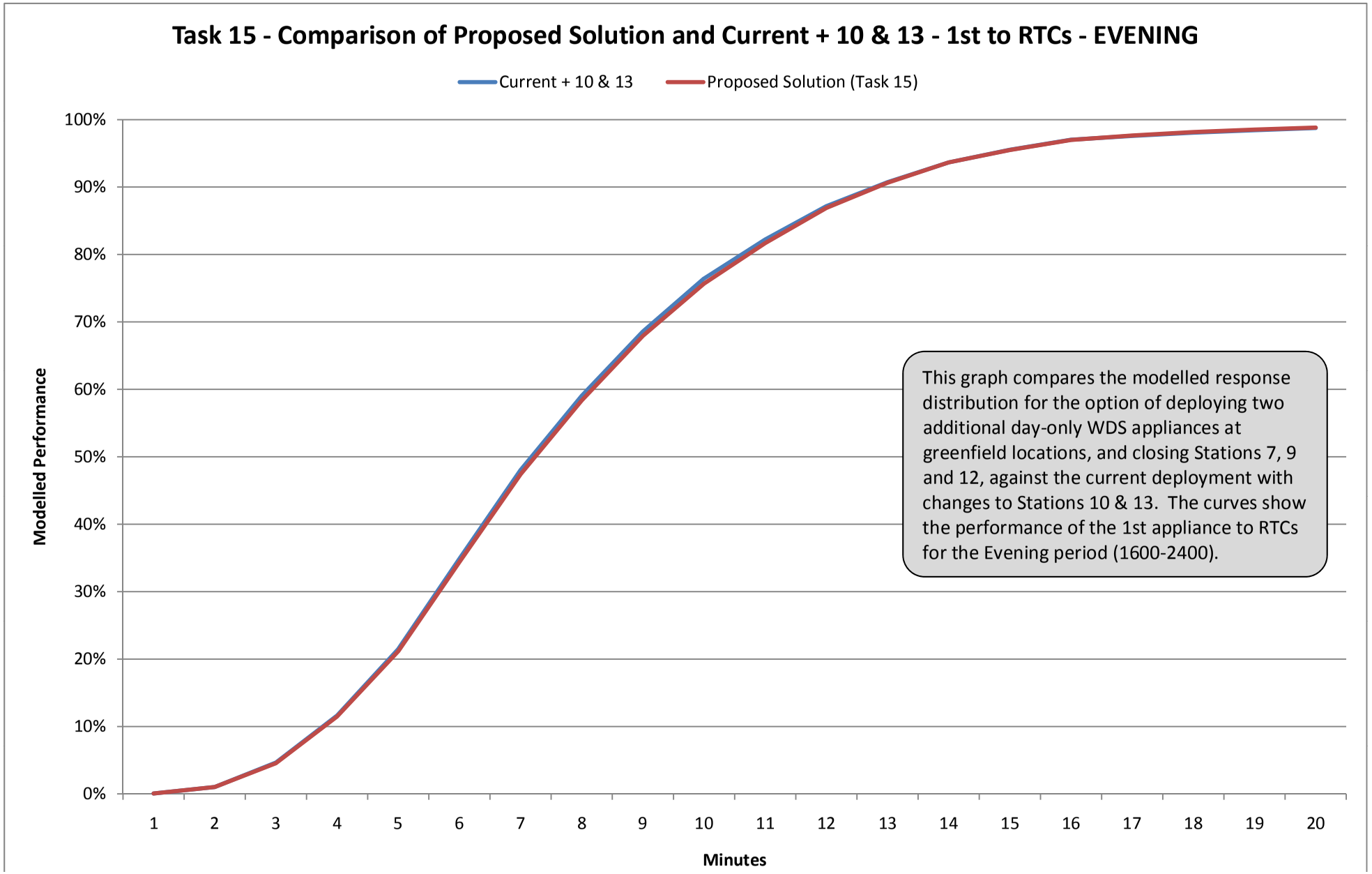
Minutes
This graph compares the modelled response distribution for the option of deploying two additional day-only WDS appliances at greenfield locations, and closing Stations 7, 9 and 12, against the current deployment with changes to Stations 10 & 13. The curves show the performance of the 2nd appliance to Dwelling Fires for the Evening period (1600-2400).

E4c


Task 15 - Comparison of Proposed Solution and Current + 10 & 13 - 1st to RTCs - EVENING
Current + 10 & 13
Proposed Solution (Task 15)
100%
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10%
0%
Modelled Performance
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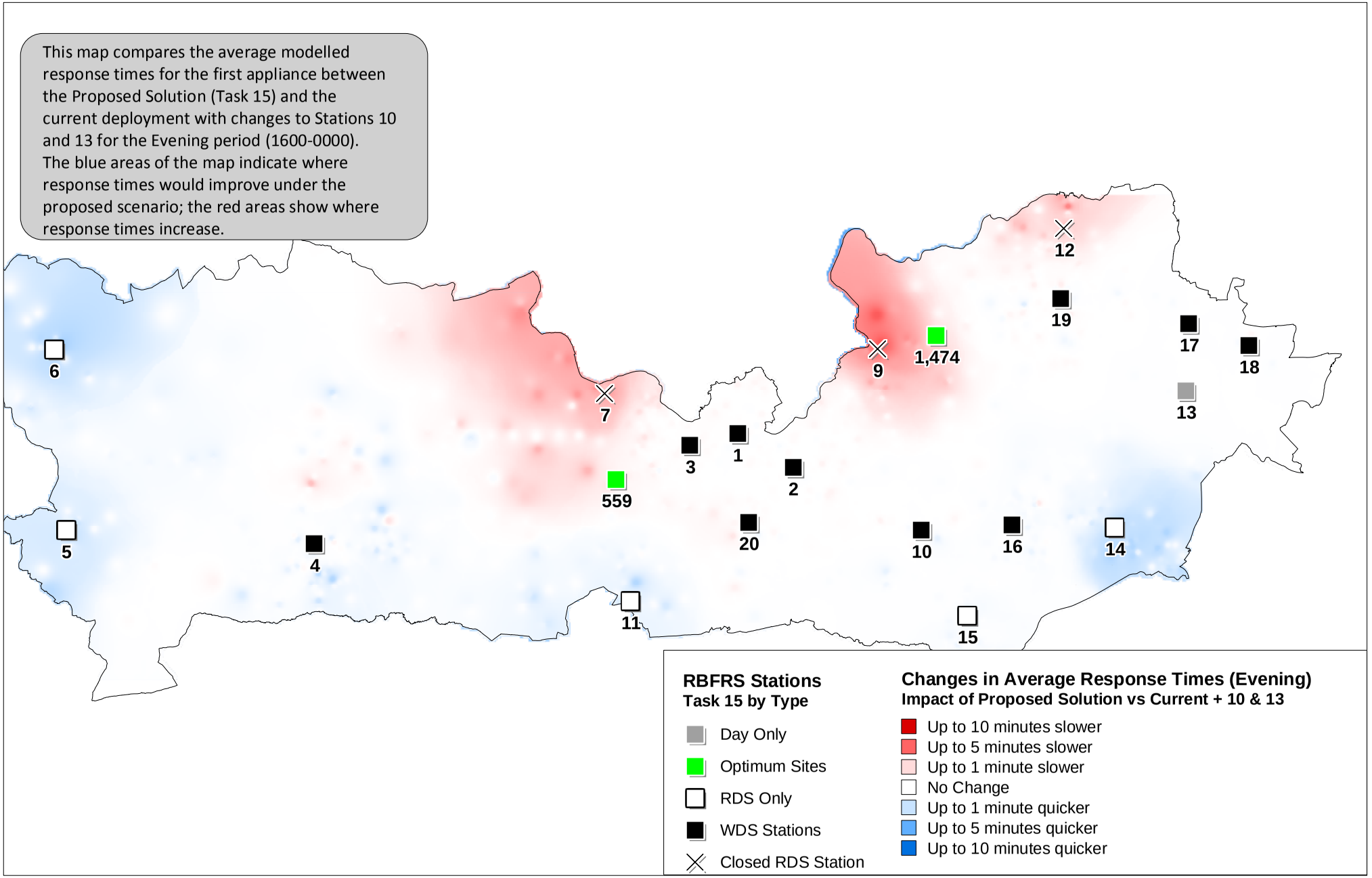
Minutes
This graph compares the modelled response distribution for the option of deploying two additional day-only WDS appliances at greenfield locations, and closing Stations 7, 9 and 12, against the current deployment with changes to Stations 10 & 13. The curves show the performance of the 1st appliance to RTCs for the Evening period (1600-2400).

E4d

Proposed Solution vs Current + 10 & 13 - Evening



E4e

Royal Berkshire Fire & Rescue Service

Response Distributions for Task 15 Proposed Option - NIGHT

Performance Against Current Deployment + Changes to Stations 10 & 13

1st Appliance to Dwelling Fires

Mins	1	2	3	4	5	6	7	**8**	9	**10**	11	12	13	14	15	16	17	18	19	20
Current + 10 & 13	0.0%	0.3%	3.2%	12.4%	28.6%	49.2%	65.8%	**78.0%**	86.5%	**91.4%**	95.7%	97.4%	99.0%	99.3%	99.7%	99.9%	100.0%	100.0%	100.0%	100.0%
Proposed Solution (Task 15)	0.0%	0.3%	3.2%	12.5%	28.6%	49.2%	65.6%	**77.8%**	86.4%	**91.3%**	95.2%	97.0%	98.6%	99.3%	99.5%	99.9%	100.0%	100.0%	100.0%	100.0%

2nd Appliance to Dwelling Fires

Mins	1	2	3	4	5	6	7	8	9	**10**	11	**12**	13	14	15	16	17	18	19	20
Current + 10 & 13	0.0%	0.0%	0.2%	2.0%	5.8%	14.3%	24.3%	38.1%	52.0%	**64.1%**	74.9%	**81.5%**	87.6%	92.2%	95.0%	96.0%	97.0%	97.6%	98.6%	98.9%
Proposed Solution (Task 15)	0.0%	0.0%	0.2%	2.2%	5.9%	14.5%	24.9%	39.0%	53.0%	**64.9%**	76.1%	**82.8%**	88.8%	92.7%	95.6%	96.6%	97.7%	98.2%	98.9%	99.1%

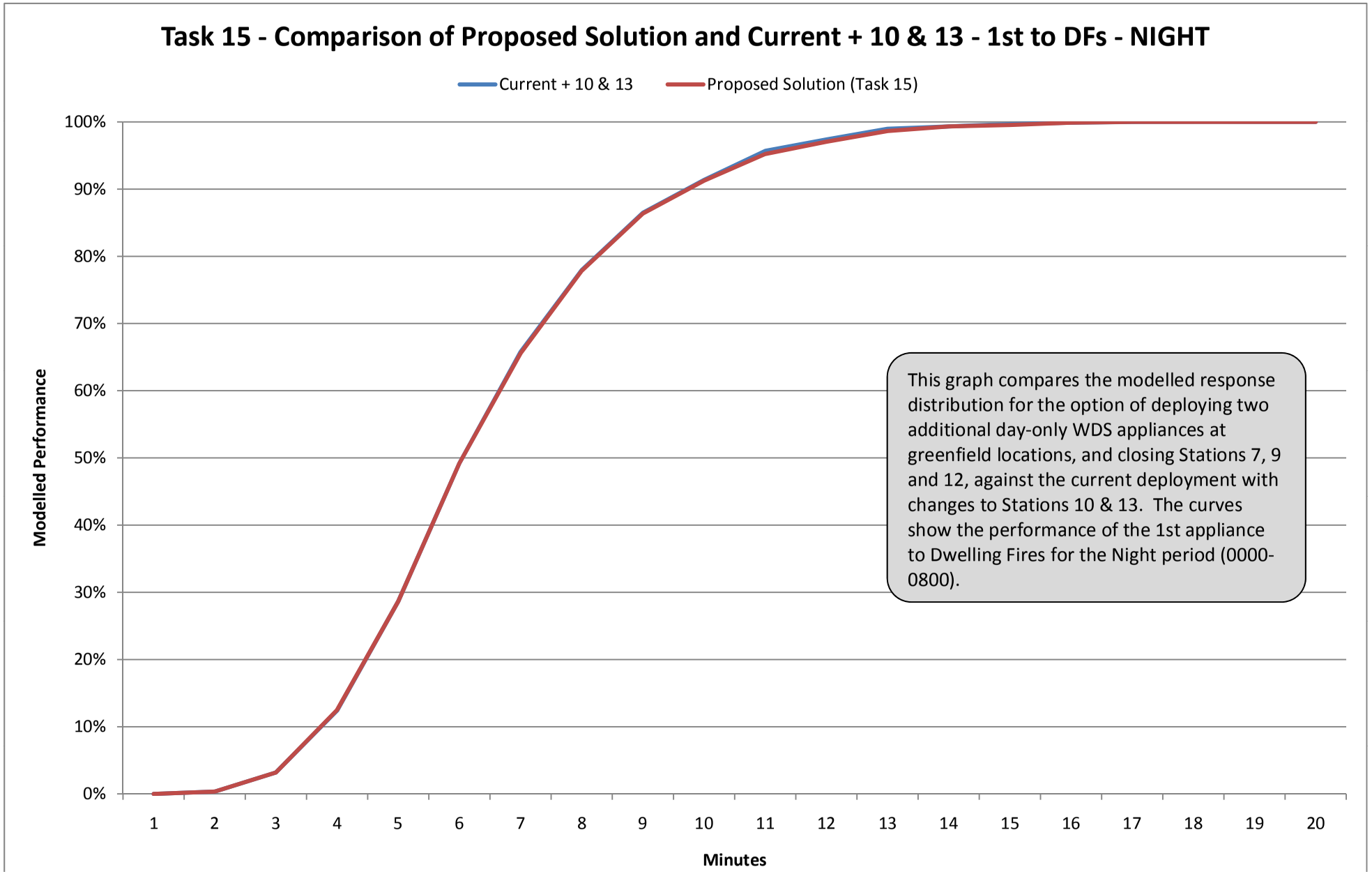
1st Appliance to RTCs

Mins	1	2	3	4	5	6	7	8	9	10	**11**	12	13	14	15	16	17	18	19	20
Current + 10 & 13	0.1%	0.7%	2.7%	8.1%	14.5%	24.7%	37.3%	48.5%	58.5%	66.0%	**73.9%**	79.6%	85.3%	88.7%	92.0%	94.5%	95.9%	97.0%	97.9%	98.1%
Proposed Solution (Task 15)	0.1%	0.7%	2.7%	8.1%	14.4%	24.5%	36.9%	48.1%	57.6%	64.9%	**72.8%**	78.7%	84.9%	88.8%	92.0%	94.1%	95.7%	96.9%	97.8%	98.1%

Note:

'Current 10 & 13' assumes current availability at RDS stations and new crewing arrangements at Stations 10 & 13

This table provides the modelled option for deploying two additional, day-only WDS appliances at greenfield locations, and closing Stations 7, 9 and 12, against the current deployment with changes to Stations 10 & 13. The impacts are shown for the Night period (0000-0800), and cover 1st and 2nd appliance to DFs and 1st to RTCs.


Task 15 - Comparison of Proposed Solution and Current + 10 & 13 - 1st to DFs - NIGHT
Current + 10 & 13
Proposed Solution (Task 15)
Modelled Performance
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
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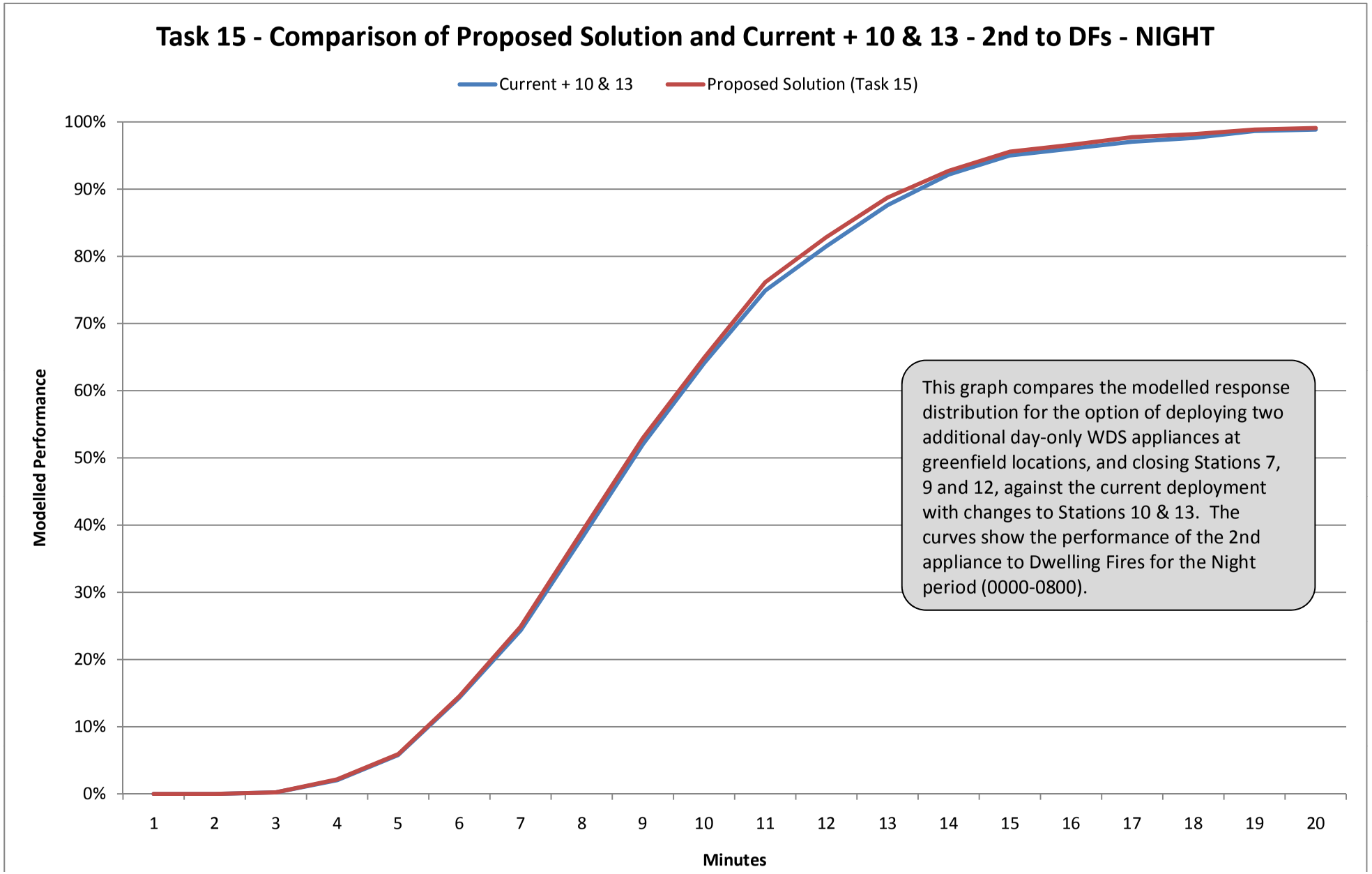
Minutes
This graph compares the modelled response distribution for the option of deploying two additional day-only WDS appliances at greenfield locations, and closing Stations 7, 9 and 12, against the current deployment with changes to Stations 10 & 13. The curves show the performance of the 1st appliance to Dwelling Fires for the Night period (0000-0800).

E5b


Task 15 - Comparison of Proposed Solution and Current + 10 & 13 - 2nd to DFs - NIGHT
Current + 10 & 13
Proposed Solution (Task 15)
Modelled Performance
100%
90%
80%
70%
60%
50%
40%
30%
20%
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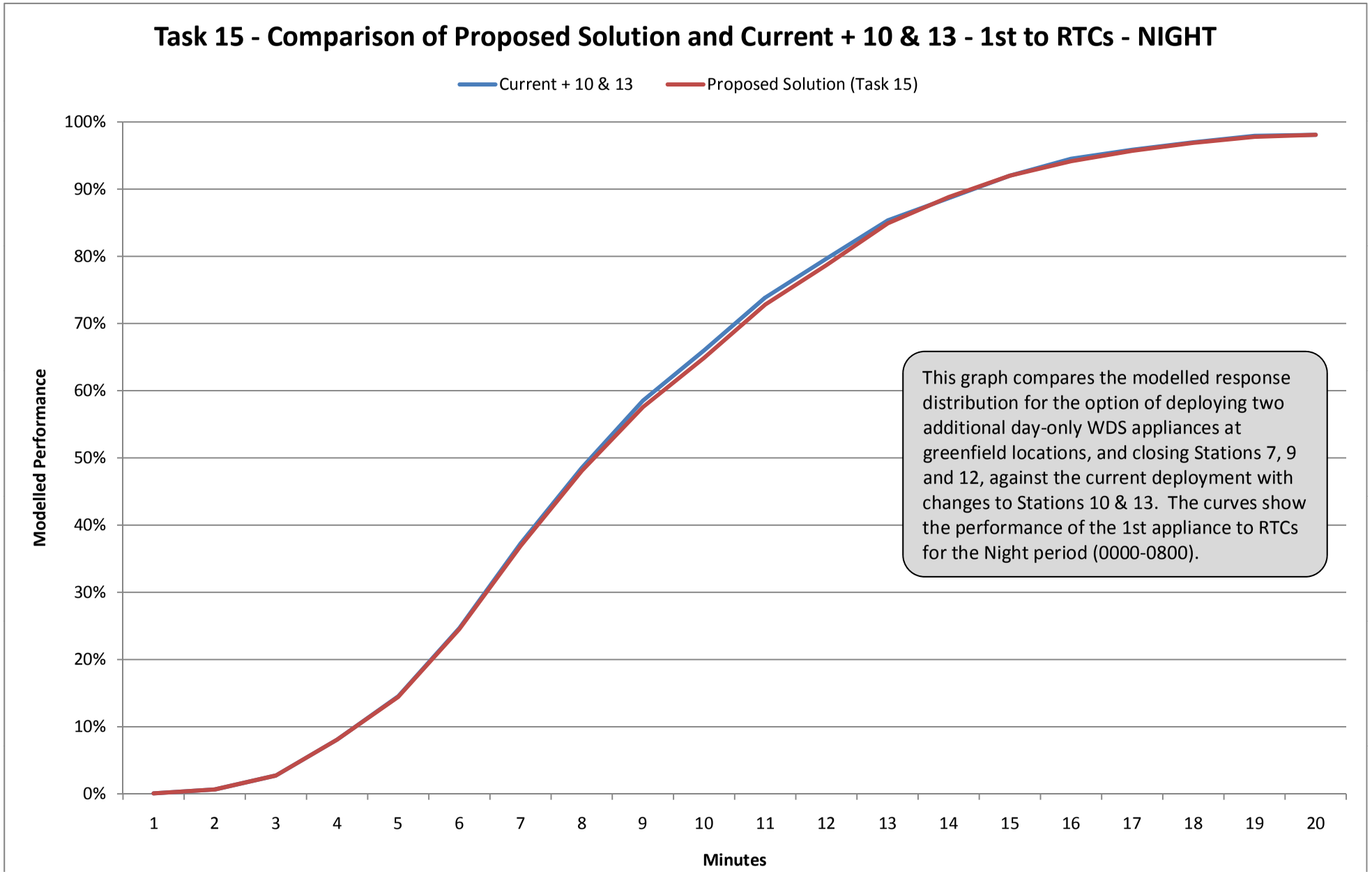
Minutes
This graph compares the modelled response distribution for the option of deploying two additional day-only WDS appliances at greenfield locations, and closing Stations 7, 9 and 12, against the current deployment with changes to Stations 10 & 13. The curves show the performance of the 2nd appliance to Dwelling Fires for the Night period (0000-0800).

E5c


Task 15 - Comparison of Proposed Solution and Current + 10 & 13 - 1st to RTCs - NIGHT
Current + 10 & 13
Proposed Solution (Task 15)
Modelled Performance
100%
90%
80%
70%
60%
50%
40%
30%
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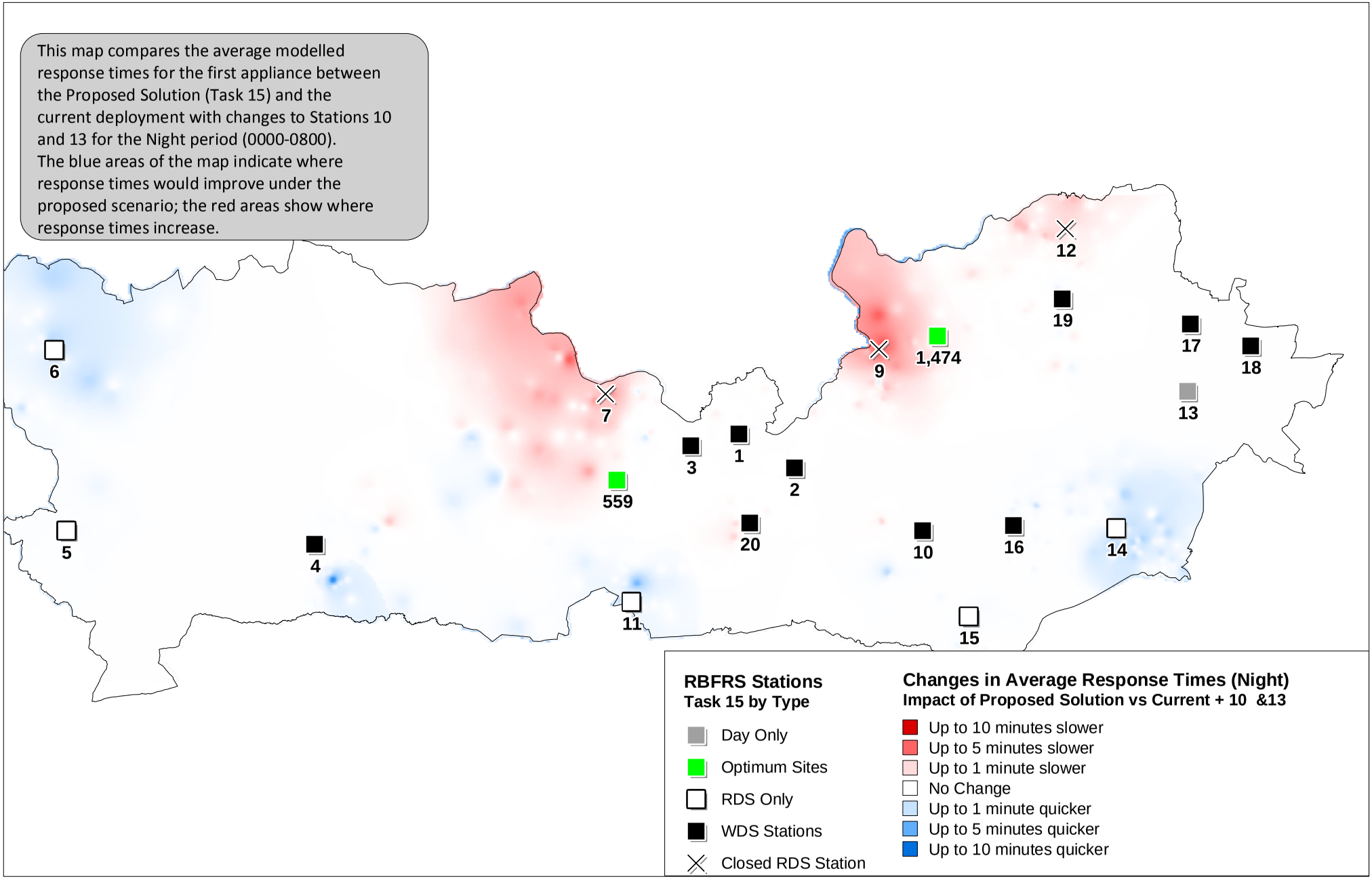
Minutes
This graph compares the modelled response distribution for the option of deploying two additional day-only WDS appliances at greenfield locations, and closing Stations 7, 9 and 12, against the current deployment with changes to Stations 10 & 13. The curves show the performance of the 1st appliance to RTCs for the Night period (0000-0800).

E5d

Proposed Solution vs Current + 10 &13 - Night



E5e

Royal Berkshire Fire & Rescue Service

Task 15 Proposed Solution - Response Time Comparisons - Pangbourne

Performance Against Current Deployment with Changes to Stations 10 and 13

Average Response Times

Current + 10 & 13

Incident	Day	Evening	Night	Overall	*No. of Incs*
DFs	8.71	7.41	7.64	7.93	*2.0*
RTCs	10.94	10.00	12.05	10.75	*16.1*

Proposed Solution (Task 15)

Incident	Day	Evening	Night	Overall	*No. of Incs*
DFs	7.00	9.50	10.32	8.72	*2.0*
RTCs	8.15	12.36	14.12	11.03	*16.1*

Difference

Incident	Day	Evening	Night	Overall	*No. of Incs*
DFs	-1.71	2.08	2.68	0.79	*2.0*
RTCs	-2.79	2.37	2.07	0.29	*16.1*

Maximum Response Times

Current + 10 & 13

Incident	Day	Evening	Night	Overall	*No. of Incs*
DFs	11.05	9.60	10.10	11.05	*2.0*
RTCs	17.14	17.24	18.57	18.57	*16.1*

Proposed Solution (Task 15)

Incident	Day	Evening	Night	Overall	*No. of Incs*
DFs	8.95	12.73	13.52	13.52	*2.0*
RTCs	21.16	20.26	19.53	21.16	*16.1*

Difference

Incident	Day	Evening	Night	Overall	*No. of Incs*
DFs	-2.11	3.13	3.42	2.47	*2.0*
RTCs	4.02	3.02	0.96	2.59	*16.1*

Notes:

All times are given in minutes

'Current + 10 & 13' assumes current availability at RDS stations and new crewing arrangements at Stations 10 & 13

'No. of Incs' = Average annual number of incidents by type in the Station Ground, based on eight-year sample (2002-09)

These tables compare the average and maximum modelled response times in Pangbourne (using locations within the current station ground area) between the deployment of appliances in the Proposed Solution (Task 15) and the current deployment with changes to Stations 10 & 13. A negative time impact indicates that the option would improve response times.

Royal Berkshire Fire & Rescue Service

Task 15 Proposed Solution - Response Time Comparisons - Wargrave

Performance Against Current Deployment with Changes to Stations 10 and 13

Average Response Times

Current + 10 & 13

Incident	Day	Evening	Night	Overall	*No. of Incs*
DFs	13.41	9.58	9.35	11.06	*2.9*
RTCs	12.14	9.51	10.65	10.75	*6.0*

Proposed Solution (Task 15)

Incident	Day	Evening	Night	Overall	*No. of Incs*
DFs	7.51	12.34	12.21	10.38	*2.9*
RTCs	6.03	13.46	15.14	10.73	*6.0*

Difference

Incident	Day	Evening	Night	Overall	*No. of Incs*
DFs	-5.90	2.76	2.86	-0.68	*2.9*
RTCs	-6.11	3.96	4.49	-0.02	*6.0*

Maximum Response Times

Current + 10 & 13

Incident	Day	Evening	Night	Overall	*No. of Incs*
DFs	15.84	14.61	10.23	15.84	*2.9*
RTCs	16.25	15.16	14.46	16.25	*6.0*

Proposed Solution (Task 15)

Incident	Day	Evening	Night	Overall	*No. of Incs*
DFs	13.47	14.61	13.33	14.61	*2.9*
RTCs	14.81	16.85	17.87	17.87	*6.0*

Difference

Incident	Day	Evening	Night	Overall	*No. of Incs*
DFs	-2.37	0.00	3.10	-1.23	*2.9*
RTCs	-1.44	1.68	3.41	1.62	*6.0*

Notes:

All times are given in minutes

'Current + 10 & 13' assumes current availability at RDS stations and new crewing arrangements at Stations 10 & 13

'No. of Incs' = Average annual number of incidents by type in the Station Ground, based on eight-year sample (2002-09)

These tables compare the average and maximum modelled response times in Wargrave (using locations within the current station ground area) between the deployment of appliances in the Proposed Solution (Task 15) and the current deployment with changes to Stations 10 & 13. A negative time impact indicates that the option would improve response times.

Royal Berkshire Fire & Rescue Service

Task 15 Proposed Solution - Response Time Comparisons - Cookham

Performance Against Current Deployment with Changes to Stations 10 and 13

Average Response Times

Current + 10 & 13

Incident	Day	Evening	Night	Overall	*No. of Incs*
DFs	9.06	7.99	8.67	8.53	*2.1*
RTCs	10.22	9.93	13.38	10.64	*1.7*

Proposed Solution (Task 15)

Incident	Day	Evening	Night	Overall	*No. of Incs*
DFs	9.35	8.51	9.26	8.97	*2.1*
RTCs	10.60	10.95	13.58	11.27	*1.7*

Difference

Incident	Day	Evening	Night	Overall	*No. of Incs*
DFs	0.29	0.51	0.59	0.44	*2.1*
RTCs	0.38	1.02	0.20	0.63	*1.7*

Maximum Response Times

Current + 10 & 13

Incident	Day	Evening	Night	Overall	*No. of Incs*
DFs	11.11	12.29	15.06	15.06	*2.1*
RTCs	15.15	15.49	17.77	17.77	*1.7*

Proposed Solution (Task 15)

Incident	Day	Evening	Night	Overall	*No. of Incs*
DFs	11.11	10.39	11.47	11.47	*2.1*
RTCs	13.94	15.49	17.77	17.77	*1.7*

Difference

Incident	Day	Evening	Night	Overall	*No. of Incs*
DFs	0.00	-1.90	-3.59	-3.59	*2.1*
RTCs	-1.21	0.00	0.00	0.00	*1.7*

Notes:

All times are given in minutes

'Current + 10 & 13' assumes current availability at RDS stations and new crewing arrangements at Stations 10 & 13

'No. of Incs' = Average annual number of incidents by type in the Station Ground, based on eight-year sample (2002-09)

These tables compare the average and maximum modelled response times in Cookham (using locations within the current station ground area) between the deployment of appliances in the Proposed Solution (Task 15) and the current deployment with changes to Stations 10 & 13. A negative time impact indicates that the option would improve response times.

Royal Berkshire Fire & Rescue Service

Proposed Solution (Task 15) - Number of Incidents Receiving Quicker Responses by Station Ground

Performance Against Current Deployment with Changes to Stations 10 and 13

This table shows the average annual number of incidents receiving a quicker response from the deployment of appliances in the Proposed Solution (Task 15) compared to the current deployment with changes to Stations 10 & 13. The results are shown by the existing 19 station grounds and are for the 24/7 period.

Average Annual Incidents

	Number of Dwelling Fire incidents which are receiving a first appliance response in...				Number of Dwelling Fire incidents which are receiving a second appliance response in...				Number of RTC incidents which are receiving a first appliance response in...				Number of all other incidents which are receiving a first appliance response in...			
Station Ground	a slower time	the same time	a quicker time	Total Incidents	a slower time	the same time	a quicker time	Total Incidents	a slower time	the same time	a quicker time	Total Incidents	a slower time	the same time	a quicker time	Total Incidents
Ascot	0.1	6.6	2.7	9.4	0.8	6.3	2.4	9.4	0.2	12.1	2.9	15.3	6.4	244.2	90.8	341.5
Bracknell	0.1	25.2	1.5	26.8	0.5	23.4	2.9	26.8	0.3	45.6	1.4	47.3	2.6	931.0	23.4	957.0
Caversham Road	0.2	38.4	0.2	38.9	0.4	37.7	0.8	38.9	0.1	21.0	0.2	21.4	4.1	974.0	10.0	988.1
Cookham	0.5	1.3	0.2	2.1	0.7	0.7	0.7	2.1	0.4	1.0	0.4	1.7	27.0	56.3	8.0	91.4
Crowthorne		7.4	0.4	7.8	0.3	7.4	0.1	7.8		15.6	0.9	16.4	0.6	252.9	11.8	265.3
Dee Road	0.2	27.4	4.1	31.7	1.0	24.9	5.8	31.7	3.8	27.1	8.8	39.7	22.0	696.6	104.3	822.9
Hungerford		6.3	1.0	7.3	0.1	6.3	0.9	7.3		14.2	1.2	15.3	0.4	106.6	9.3	116.2
Lambourn		1.2		1.2		1.2		1.2	0.1	17.6	1.9	19.6	0.2	80.5	9.4	90.1
Langley		39.2	0.2	39.5	0.1	39.0	0.3	39.5	0.1	35.4	0.1	35.5	0.3	732.1	1.3	733.6
Maidenhead	0.2	13.6	1.2	15.0	0.8	10.4	3.8	15.0	0.7	49.6	6.3	56.6	9.3	762.9	90.0	862.2
Mortimer	0.1	3.4	1.3	4.8		3.2	1.5	4.8	0.7	17.2	6.3	24.1	2.1	116.9	57.4	176.5
Newbury	0.1	28.2	2.1	30.5	1.2	20.6	8.6	30.5	0.4	74.2	5.3	79.9	6.6	812.8	35.7	855.1
Pangbourne	1.1	0.3	0.6	2.0	1.0	0.7	0.3	2.0	4.9	6.7	4.5	16.1	33.7	31.0	31.4	96.2
Slough	0.1	75.1	0.7	75.9		75.4	0.4	75.9		38.6	0.1	38.7	0.1	1,207.4	4.4	1,211.9
Wargrave	1.1	0.7	1.1	2.9	1.4	0.7	0.7	2.9	2.8	0.6	2.6	6.0	43.4	23.5	48.3	115.2
Whitley Wood	0.1	24.4	0.6	25.1	0.4	22.9	1.8	25.1	0.5	32.7	0.9	34.1	5.6	603.1	14.7	623.5
Windsor		23.7		23.7		23.6	0.1	23.7		13.3	0.1	13.5	0.7	499.8	3.8	504.2
Wokingham	0.1	10.8		10.8	0.1	10.5	0.1	10.8	0.1	37.0	0.6	37.8	0.8	352.8	5.2	358.7
Wokingham Road		20.1	0.6	20.6		19.2	1.5	20.6	0.1	40.6	1.9	42.7	5.5	858.2	19.5	883.1
Grand Total	4.2	353.9	18.4	376.5	9.1	334.6	32.8	376.5	15.2	504.7	46.5	566.4	174.3	9,463.0	580.4	10,217.7

Notes:

Station grounds are based on the existing 19 station grounds

Incident numbers are based on the average annual number of incidents by type in the Station Ground, based on eight-year sample (2002-09)

Royal Berkshire Fire & Rescue Service

Proposed Solution (Task 15) - Percentage of Incidents Receiving Quicker Responses by Station Ground

Performance Against Current Deployment with Changes to Stations 10 and 13

This table shows the percentage of incidents receiving a quicker response from the deployment of appliances in the Proposed Solution (Task 15) compared to the current deployment with changes to Stations 10 & 13. The results are shown by the existing 19 station grounds and are for the 24/7 period.

Percentage of Incidents

	Percentage of Dwelling Fire incidents which are receiving a first appliance response in...				Percentage of Dwelling Fire incidents which are receiving a second appliance response in...				Percentage of RTC incidents which are receiving a first appliance response in...				Percentage of all other incidents which are receiving a first appliance response in...			
Station Ground	a slower time	the same time	a quicker time	Total Incidents	a slower time	the same time	a quicker time	Total Incidents	a slower time	the same time	a quicker time	Total Incidents	a slower time	the same time	a quicker time	Total Incidents
Ascot	1.6%	69.5%	28.9%	100.0%	8.6%	66.4%	25.0%	100.0%	1.4%	79.2%	19.3%	100.0%	1.9%	71.5%	26.6%	100.0%
Bracknell	0.5%	94.0%	5.5%	100.0%	1.9%	87.4%	10.7%	100.0%	0.6%	96.4%	3.0%	100.0%	0.3%	97.3%	2.5%	100.0%
Caversham Road	0.6%	98.9%	0.6%	100.0%	0.9%	97.0%	2.1%	100.0%	0.7%	98.3%	1.0%	100.0%	0.4%	98.6%	1.0%	100.0%
Cookham	25.0%	64.3%	10.7%	100.0%	35.7%	32.1%	32.1%	100.0%	21.7%	56.5%	21.7%	100.0%	29.5%	61.7%	8.8%	100.0%
Crowthorne		95.3%	4.7%	100.0%	3.8%	95.3%	0.9%	100.0%		94.6%	5.4%	100.0%	0.2%	95.3%	4.4%	100.0%
Dee Road	0.7%	86.5%	12.8%	100.0%	3.3%	78.6%	18.1%	100.0%	9.7%	68.2%	22.1%	100.0%	2.7%	84.6%	12.7%	100.0%
Hungerford		86.9%	13.1%	100.0%	2.0%	85.9%	12.1%	100.0%		92.3%	7.7%	100.0%	0.3%	91.7%	8.0%	100.0%
Lambourn		100.0%		100.0%		100.0%		100.0%	0.4%	89.8%	9.8%	100.0%	0.2%	89.4%	10.4%	100.0%
Langley		99.4%	0.6%	100.0%	0.4%	98.9%	0.7%	100.0%	0.2%	99.6%	0.2%	100.0%	0.0%	99.8%	0.2%	100.0%
Maidenhead	1.5%	90.7%	7.8%	100.0%	5.4%	69.1%	25.5%	100.0%	1.2%	87.7%	11.1%	100.0%	1.1%	88.5%	10.4%	100.0%
Mortimer	1.5%	70.8%	27.7%	100.0%		67.7%	32.3%	100.0%	2.8%	71.3%	26.0%	100.0%	1.2%	66.2%	32.6%	100.0%
Newbury	0.5%	92.7%	6.8%	100.0%	3.9%	67.8%	28.3%	100.0%	0.5%	92.9%	6.6%	100.0%	0.8%	95.1%	4.2%	100.0%
Pangbourne	55.6%	14.8%	29.6%	100.0%	51.9%	33.3%	14.8%	100.0%	30.3%	41.7%	28.0%	100.0%	35.0%	32.3%	32.7%	100.0%
Slough	0.1%	98.9%	1.0%	100.0%		99.4%	0.6%	100.0%		99.6%	0.4%	100.0%	0.0%	99.6%	0.4%	100.0%
Wargrave	38.5%	23.1%	38.5%	100.0%	48.7%	25.6%	25.6%	100.0%	46.9%	9.9%	43.2%	100.0%	37.6%	20.4%	41.9%	100.0%
Whitley Wood	0.6%	97.1%	2.3%	100.0%	1.8%	90.9%	7.3%	100.0%	1.5%	95.9%	2.6%	100.0%	0.9%	96.7%	2.4%	100.0%
Windsor		100.0%		100.0%		99.4%	0.6%	100.0%		98.9%	1.1%	100.0%	0.1%	99.1%	0.7%	100.0%
Wokingham	0.7%	99.3%		100.0%	1.4%	97.3%	1.4%	100.0%	0.4%	98.0%	1.6%	100.0%	0.2%	98.3%	1.4%	100.0%
Wokingham Road		97.1%	2.9%	100.0%		92.9%	7.1%	100.0%	0.3%	95.2%	4.5%	100.0%	0.6%	97.2%	2.2%	100.0%
Grand Total	1.1%	94.0%	4.9%	100.0%	2.4%	88.9%	8.7%	100.0%	2.7%	89.1%	8.2%	100.0%	1.7%	92.6%	5.7%	100.0%

Notes:

Station grounds are based on the existing 19 station grounds

Incident numbers are based on the average annual number of incidents by type in the Station Ground, based on eight-year sample (2002-09)

F Fixed and Unfixed Station Location Modelling *(Second Mapping Specification)*

F1 Station Deployments by Modelling Option

F2 Modelling Option 1a

- **F2a** Map of Fixed and Optimum Station Locations
- **F2b** Table of Simulation Results
- **F2c** Graph - 1st Appliance to DFs
- **F2d** Graph - 2nd Appliance to DFs
- **F2e** Graph - 1st Appliance to RTCs

F3 Modelling Option 1b (*)

F4 Modelling Option 2a - Part 1 (*)

F5 Modelling Option 2a - Part 2 (*)

F6 Modelling Option 2b - Part 1 (*)

F7 Modelling Option 2b - Part 2 (*)

(*) – Appendix follows same structure as F2

Royal Berkshire Fire & Rescue Service

Station Deployments by Modelling Option

Second Mapping Specification

Node	Station Name	Modelling Option 1a	Modelling Option 1b	Modelling Option 2a - Part 1	Modelling Option 2a - Part 2	Modelling Option 2b - Part 1	Modelling Option 2b - Part 2
1	Caversham Road	Fixed - WDS	Fixed - WDS	Fixed - WDS	Fixed - WDS	Fixed - WDS	Fixed - WDS
2	Wokingham Road	Unfixed	Unfixed	Unfixed	Unfixed	Unfixed	Unfixed
3	Dee Road	Unfixed	Unfixed	Unfixed	Unfixed	Unfixed	Unfixed
4	Newbury	Fixed - WDS	Fixed - WDS	Fixed - WDS + RDS	Fixed - WDS + RDS	Fixed - WDS + RDS	Fixed - WDS + RDS
5	Hungerford	Unfixed	Unfixed	Fixed - RDS	Fixed - RDS	Fixed - RDS	Fixed - RDS
6	Lambourn	Unfixed	Unfixed	Fixed - RDS	Fixed - RDS	Fixed - RDS	Fixed - RDS
7	Pangbourne	Unfixed	Unfixed	Unfixed	Unfixed	Unfixed	Unfixed
9	Wargrave	Unfixed	Unfixed	Unfixed	Unfixed	Unfixed	Unfixed
10	Wokingham	Fixed - WDS	Fixed - WDS	Fixed - WDS	Fixed - WDS	Fixed - WDS	Fixed - WDS
11	Mortimer	Unfixed	Unfixed	Fixed - RDS	Fixed - RDS	Fixed - RDS	Fixed - RDS
12	Cookham	Unfixed	Unfixed	Unfixed	Unfixed	Unfixed	Unfixed
13	Windsor	Unfixed	Fixed - Day	Unfixed	Unfixed	Fixed - Day	Fixed - Day
14	Ascot	Unfixed	Unfixed	Fixed - RDS	Fixed - RDS	Fixed - RDS	Fixed - RDS
15	Crowthorne	Unfixed	Unfixed	Fixed - RDS	Fixed - RDS	Fixed - RDS	Fixed - RDS
16	Bracknell	Fixed - WDS	Fixed - WDS	Fixed - WDS + RDS	Fixed - WDS + RDS	Fixed - WDS + RDS	Fixed - WDS + RDS
17	Slough	Fixed - WDS	Fixed - WDS	Fixed - WDS	Fixed - WDS	Fixed - WDS	Fixed - WDS
18	Langley	Fixed - WDS	Fixed - WDS	Fixed - WDS	Fixed - WDS	Fixed - WDS	Fixed - WDS
19	Maidenhead	Fixed - WDS	Fixed - WDS	Fixed - WDS + RDS	Fixed - WDS + RDS	Fixed - WDS + RDS	Fixed - WDS + RDS
20	Whitley Wood	Fixed - WDS	Fixed - WDS	Fixed - WDS	Fixed - WDS	Fixed - WDS	Fixed - WDS
99	(nr M4 J14)	Optimum - WDS	Optimum - WDS		Optimum - Day		Optimum - Day
443	(Woolhampton)				Optimum - Day		Optimum - Day
607	(nr M4 J12)	Optimum - WDS	Optimum - WDS	Optimum - WDS	Optimum - WDS	Optimum - WDS	Optimum - WDS
1266	(Loddon Bridge)	Optimum - WDS	Optimum - WDS	Optimum - WDS	Optimum - WDS	Optimum - WDS	Optimum - WDS
1474	(Knowl Hill)			Optimum - Day	Optimum - Day	Optimum - WDS	Optimum - WDS
2103	(Ascot)	Optimum - Day					
2742	(Windsor)			Optimum - WDS	Optimum - WDS		

Key:

Fixed WDS = Station location fixed with one WDS crew

Fixed Day = Station location fixed with one Day Only WDS crew (Windsor)

Fixed - WDS + RDS = Station location fixed with one WDS crew and one RDS crew

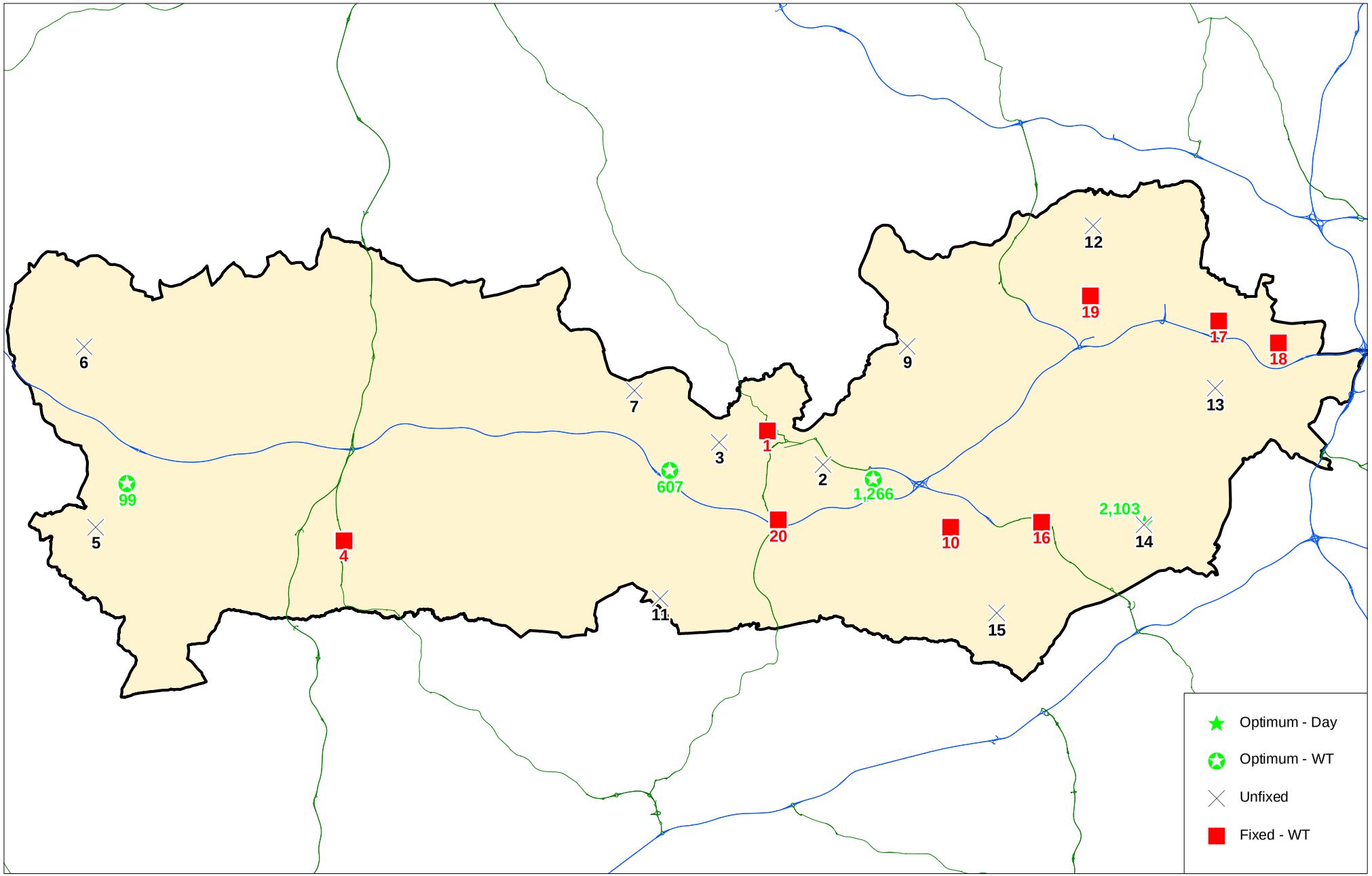
Fixed - RDS = Station location fixed with one RDS crew

Unfixed = Existing station not fixed in modelling

Optimum - WDS = Optimum greenfield site for station with one WDS crew

Optimum - Day = Optimum greenfield site for station with one Day Only WDS crew

Modelling Option 1a



F2a

Royal Berkshire Fire & Rescue Service

Response Distributions for Modelling Option 1a - 24/7

Performance Against Current Plus Stations 10 & 13 Changed

1st Appliance to Dwelling Fires

Mins	1	2	3	4	5	6	7	**8**	9	**10**	11	12	13	14	15	16	17	18	19	20
Current + 10 & 13	0.0%	0.5%	4.9%	16.6%	35.9%	56.0%	70.6%	**81.0%**	88.2%	**92.4%**	95.5%	97.1%	98.2%	98.9%	99.4%	99.5%	99.7%	99.8%	99.8%	99.9%
Option 1a	0.0%	0.7%	4.1%	14.3%	30.9%	49.0%	63.2%	**74.1%**	81.8%	**86.7%**	91.0%	94.1%	95.6%	96.8%	97.5%	98.2%	98.6%	99.1%	99.4%	99.6%

2nd Appliance to Dwelling Fires

Mins	1	2	3	4	5	6	7	8	9	**10**	11	**12**	13	14	15	16	17	18	19	20
Current + 10 & 13	0.0%	0.0%	0.6%	3.0%	8.6%	17.6%	29.1%	43.9%	57.2%	**69.2%**	78.8%	**85.1%**	89.7%	92.6%	94.4%	95.6%	96.6%	97.5%	98.2%	98.8%
Option 1a	0.0%	0.0%	0.0%	0.0%	0.6%	3.5%	9.7%	20.4%	33.7%	**47.6%**	60.3%	**70.3%**	77.5%	82.0%	85.8%	89.2%	92.1%	94.5%	96.4%	97.4%

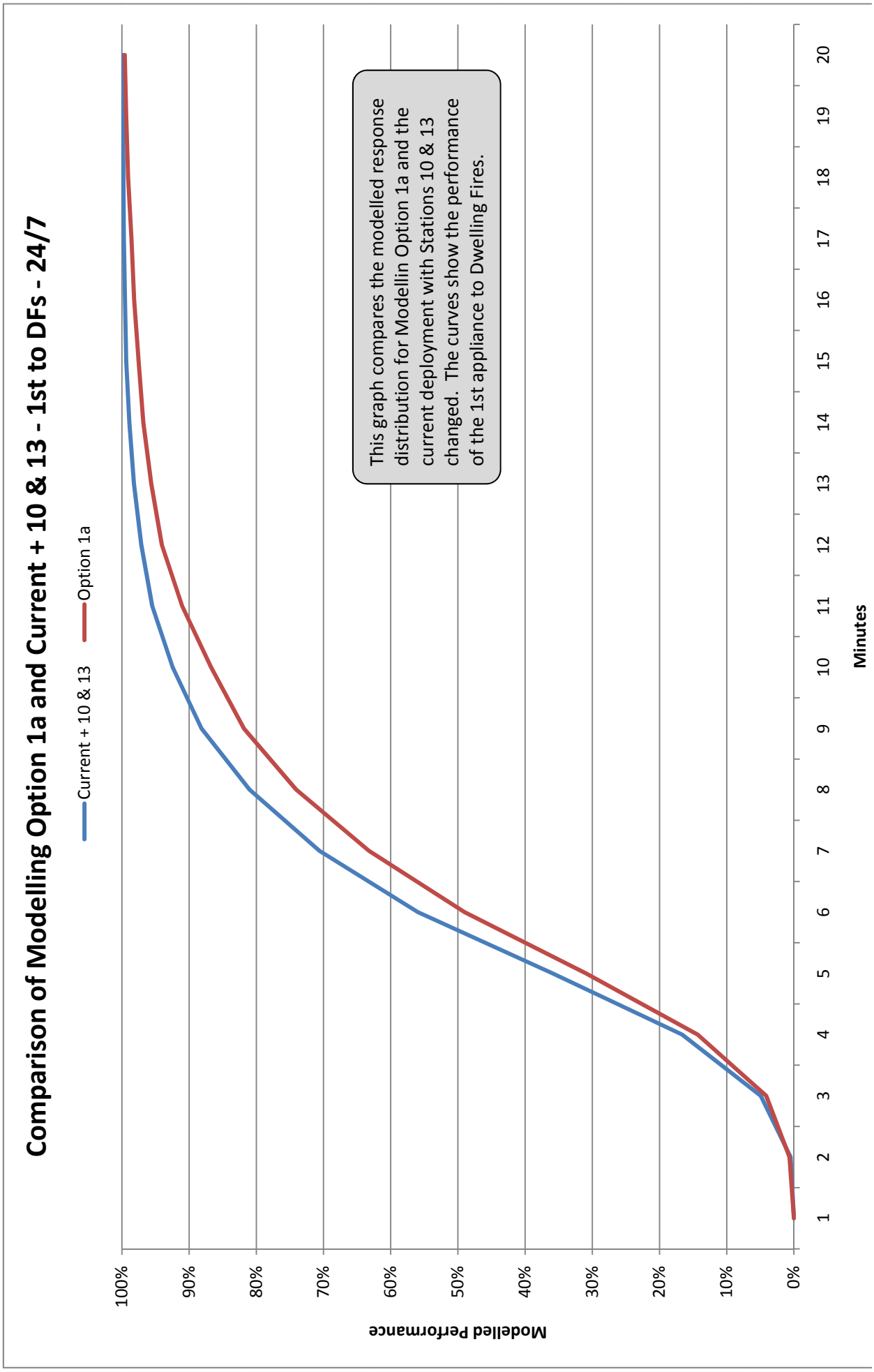
1st Appliance to RTCs

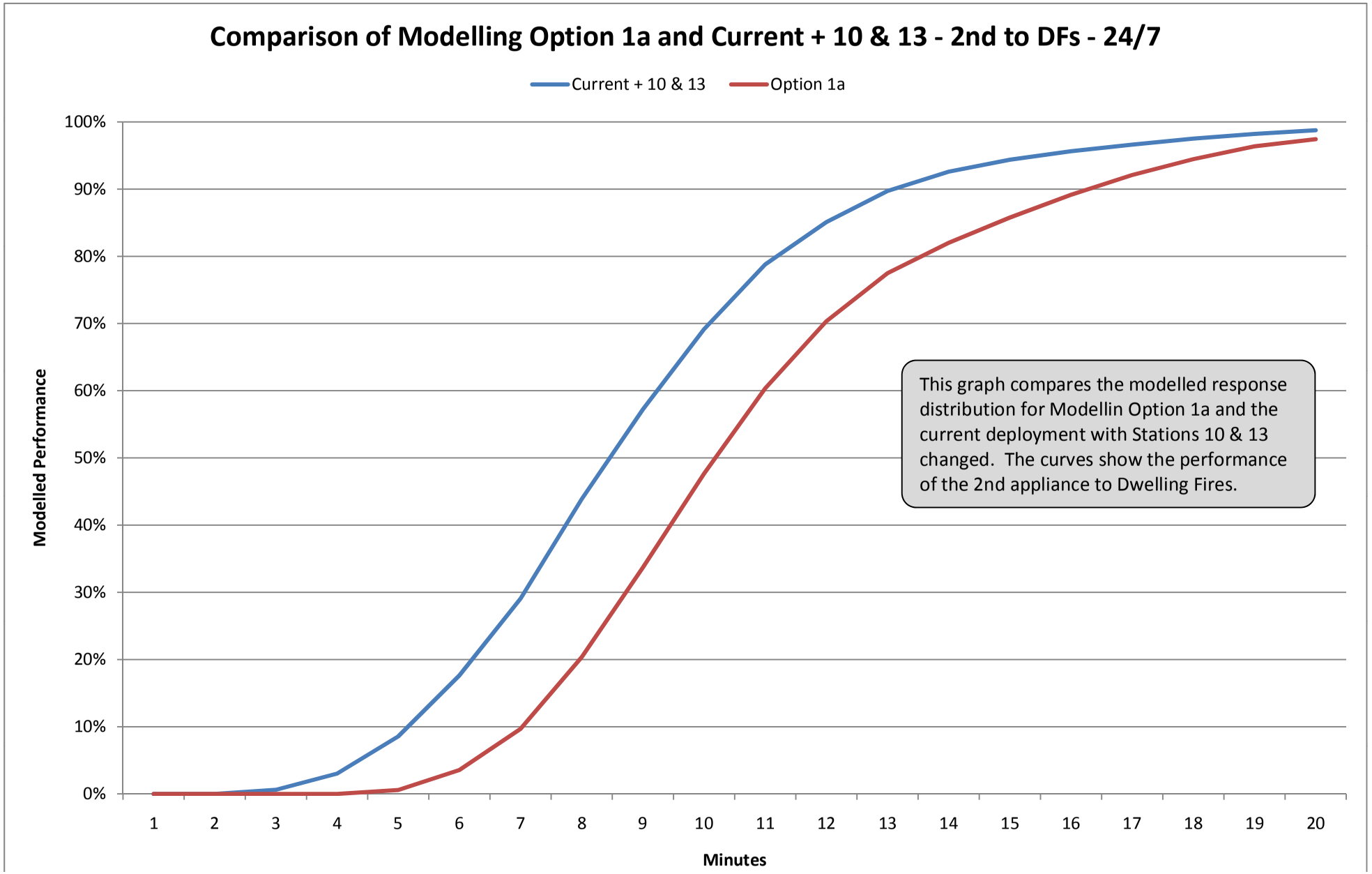
Mins	1	2	3	4	5	6	7	8	9	10	**11**	12	13	14	15	16	17	18	19	20
Current + 10 & 13	0.1%	1.0%	4.5%	11.2%	20.9%	33.6%	46.5%	57.4%	66.7%	74.2%	**80.3%**	85.5%	89.7%	92.6%	94.8%	96.4%	97.2%	97.9%	98.3%	98.6%
Option 1a	0.0%	1.0%	4.9%	12.5%	22.6%	35.5%	48.2%	58.5%	66.8%	73.3%	**79.3%**	85.0%	89.4%	92.5%	94.5%	95.7%	96.5%	97.1%	97.5%	98.0%

Note:

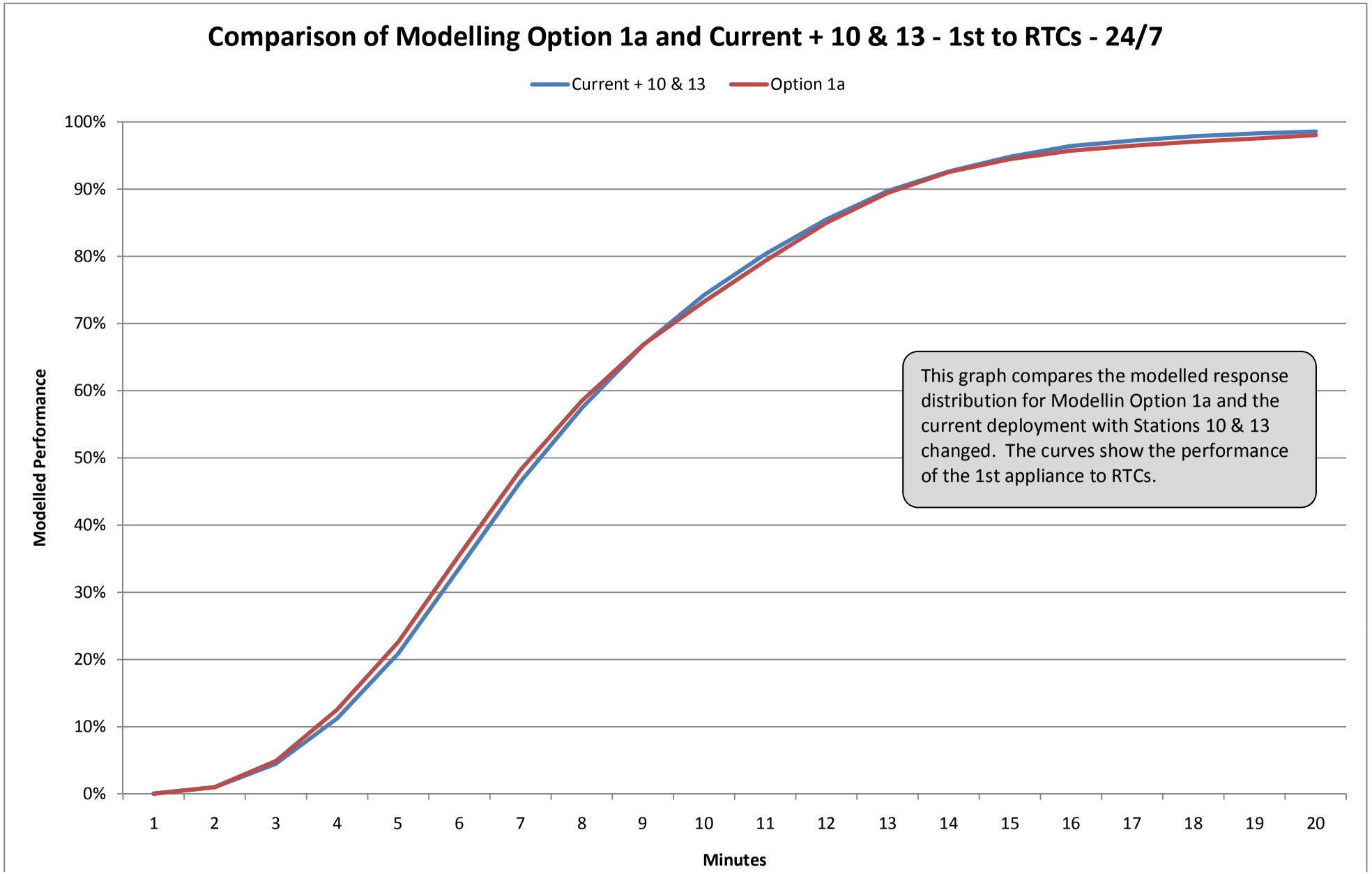
'Current + 10 & 13' assumes current availability at RDS stations and new crewing arrangements at Stations 10 & 13

This table compares the Modelling Option 1a (fixing 8 WDS and locating three optimal WDS plus one optimal day only crew) against the current deployment with Stations 10 & 13 changed. The impacts are shown for the 24/7 period, and cover 1st and 2nd appliance to DFs and 1st to RTCs.


Comparison of Modelling Option 1a and Current + 10 & 13 - 1st to DFs - 24/7
Current + 10 & 13
Option 1a
This graph compares the modelled response distribution for Modellin Option 1a and the current deployment with Stations 10 & 13 changed. The curves show the performance of the 1st appliance to Dwelling Fires.
Modelled Performance
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
Minutes

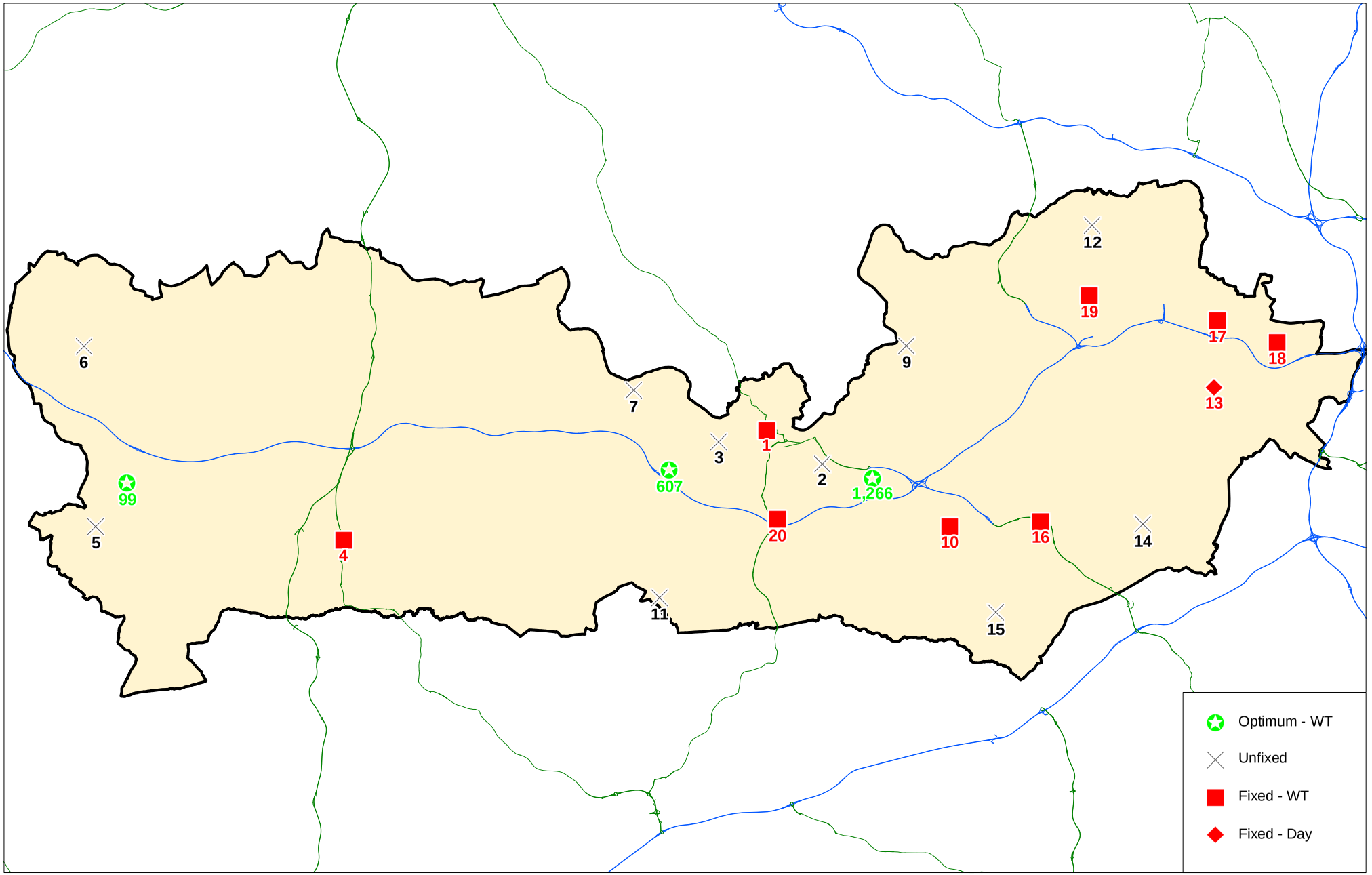

Comparison of Modelling Option 1a and Current + 10 & 13 - 2nd to DFs - 24/7
Current + 10 & 13
Option 1a
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Modelled Performance
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
Minutes
This graph compares the modelled response distribution for Modellin Option 1a and the current deployment with Stations 10 & 13 changed. The curves show the performance of the 2nd appliance to Dwelling Fires.

F2d


Comparison of Modelling Option 1a and Current + 10 & 13 - 1st to RTCs - 24/7
Current + 10 & 13
Option 1a
Modelled Performance
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
Minutes
This graph compares the modelled response distribution for Modellin Option 1a and the current deployment with Stations 10 & 13 changed. The curves show the performance of the 1st appliance to RTCs.

F2e

Modelling Option 1b



F3a

Royal Berkshire Fire & Rescue Service

Response Distributions for Modelling Option 1b - 24/7

Performance Against Current Plus Stations 10 & 13 Changed

1st Appliance to Dwelling Fires

Mins	1	2	3	4	5	6	7	**8**	9	**10**	11	12	13	14	15	16	17	18	19	20
Current + 10 & 13	0.0%	0.5%	4.9%	16.6%	35.9%	56.0%	70.6%	**81.0%**	88.2%	**92.4%**	95.5%	97.1%	98.2%	98.9%	99.4%	99.5%	99.7%	99.8%	99.8%	99.9%
Option 1b	0.0%	0.7%	4.6%	15.7%	32.9%	51.1%	65.2%	**75.8%**	83.4%	**87.9%**	91.9%	94.7%	96.3%	97.4%	98.2%	98.7%	99.1%	99.4%	99.6%	99.7%

2nd Appliance to Dwelling Fires

Mins	1	2	3	4	5	6	7	8	9	**10**	11	**12**	13	14	15	16	17	18	19	20
Current + 10 & 13	0.0%	0.0%	0.6%	3.0%	8.6%	17.6%	29.1%	43.9%	57.2%	**69.2%**	78.8%	**85.1%**	89.7%	92.6%	94.4%	95.6%	96.6%	97.5%	98.2%	98.8%
Option 1b	0.0%	0.0%	0.0%	0.0%	0.9%	4.6%	11.5%	22.7%	36.7%	**50.5%**	62.9%	**72.9%**	79.6%	83.9%	88.0%	91.4%	93.9%	95.9%	97.2%	98.0%

1st Appliance to RTCs

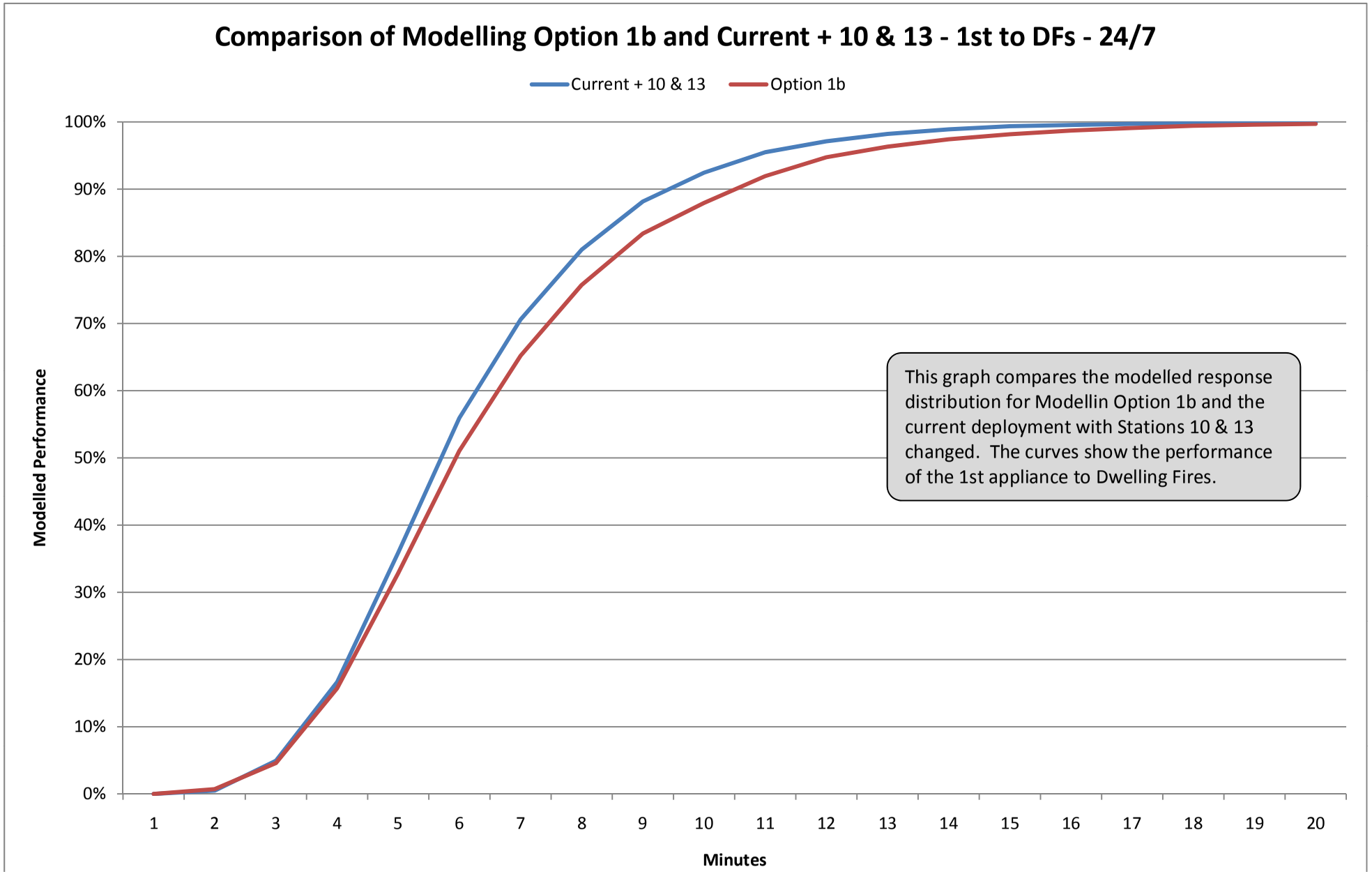
Mins	1	2	3	4	5	6	7	8	9	10	**11**	12	13	14	15	16	17	18	19	20
Current + 10 & 13	0.1%	1.0%	4.5%	11.2%	20.9%	33.6%	46.5%	57.4%	66.7%	74.2%	**80.3%**	85.5%	89.7%	92.6%	94.8%	96.4%	97.2%	97.9%	98.3%	98.6%
Option 1b	0.0%	0.9%	4.9%	12.7%	22.6%	35.6%	48.5%	59.1%	67.4%	73.8%	**79.9%**	85.6%	89.9%	93.1%	95.0%	96.1%	96.9%	97.4%	97.8%	98.2%

Note:

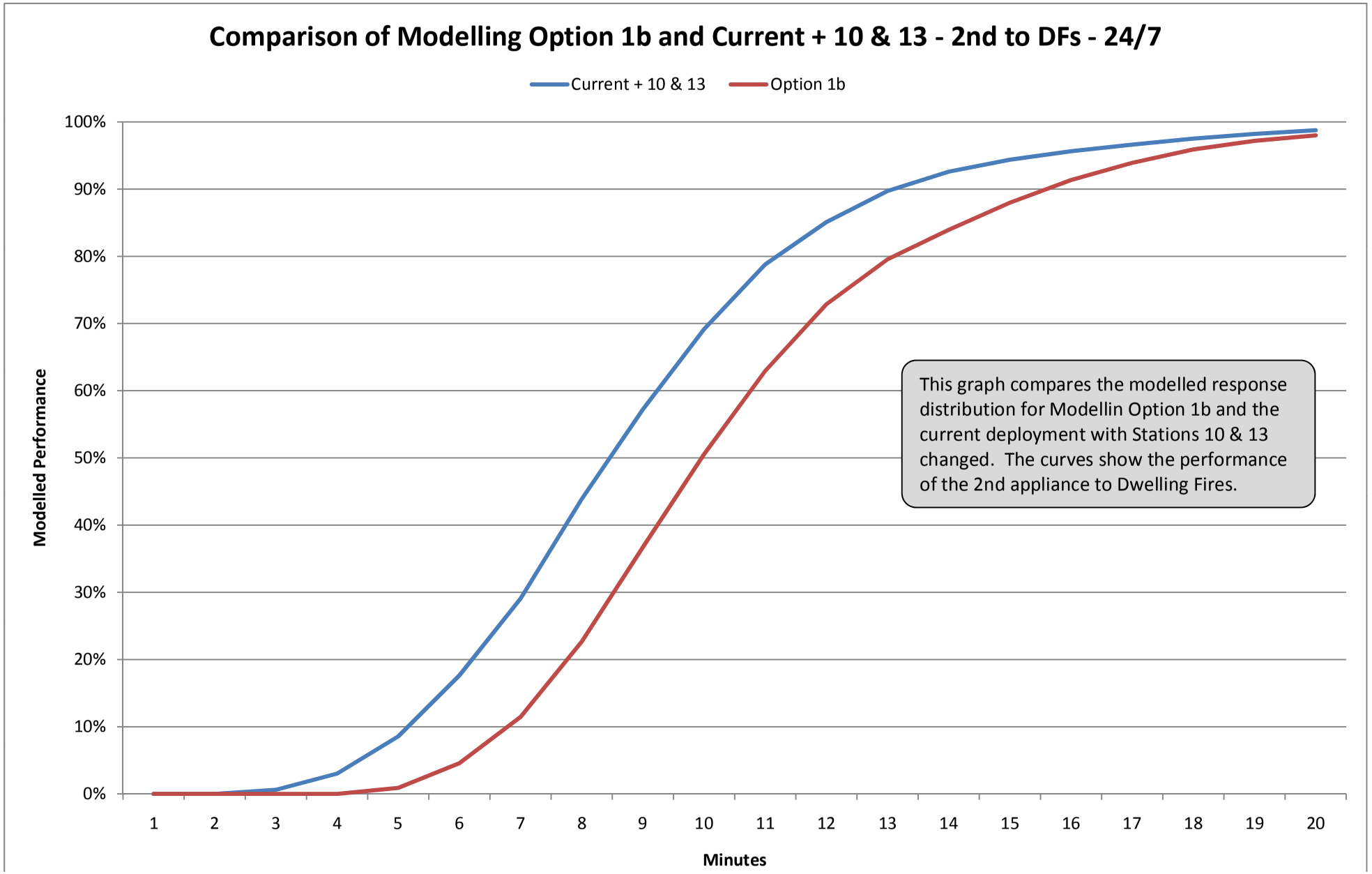
'Current + 10 & 13' assumes current availability at RDS stations and new crewing arrangements at Stations 10 & 13

This table compares the Modelling Option 1b (fixing 8 WDS plus Station 13 as Day only, and locating three optimal WDS) against the current deployment with Stations 10 & 13 changed. The impacts are shown for the 24/7 period, and cover 1st and 2nd appliance to DFs and 1st to RTCs.

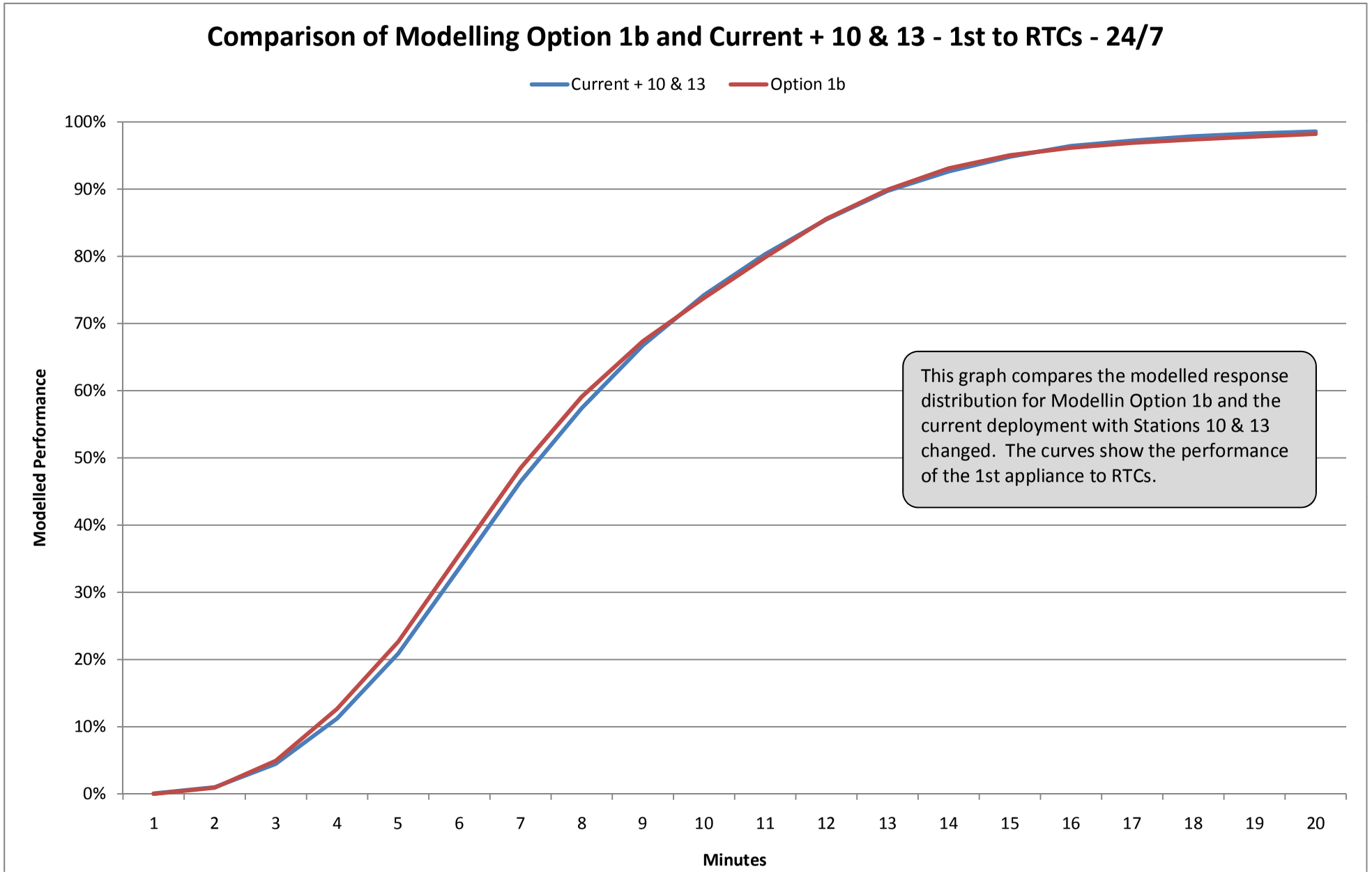
F3b


Comparison of Modelling Option 1b and Current + 10 & 13 - 1st to DFs - 24/7
Current + 10 & 13
Option 1b
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Modelled Performance
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
Minutes
This graph compares the modelled response distribution for Modellin Option 1b and the current deployment with Stations 10 & 13 changed. The curves show the performance of the 1st appliance to Dwelling Fires.

F3c

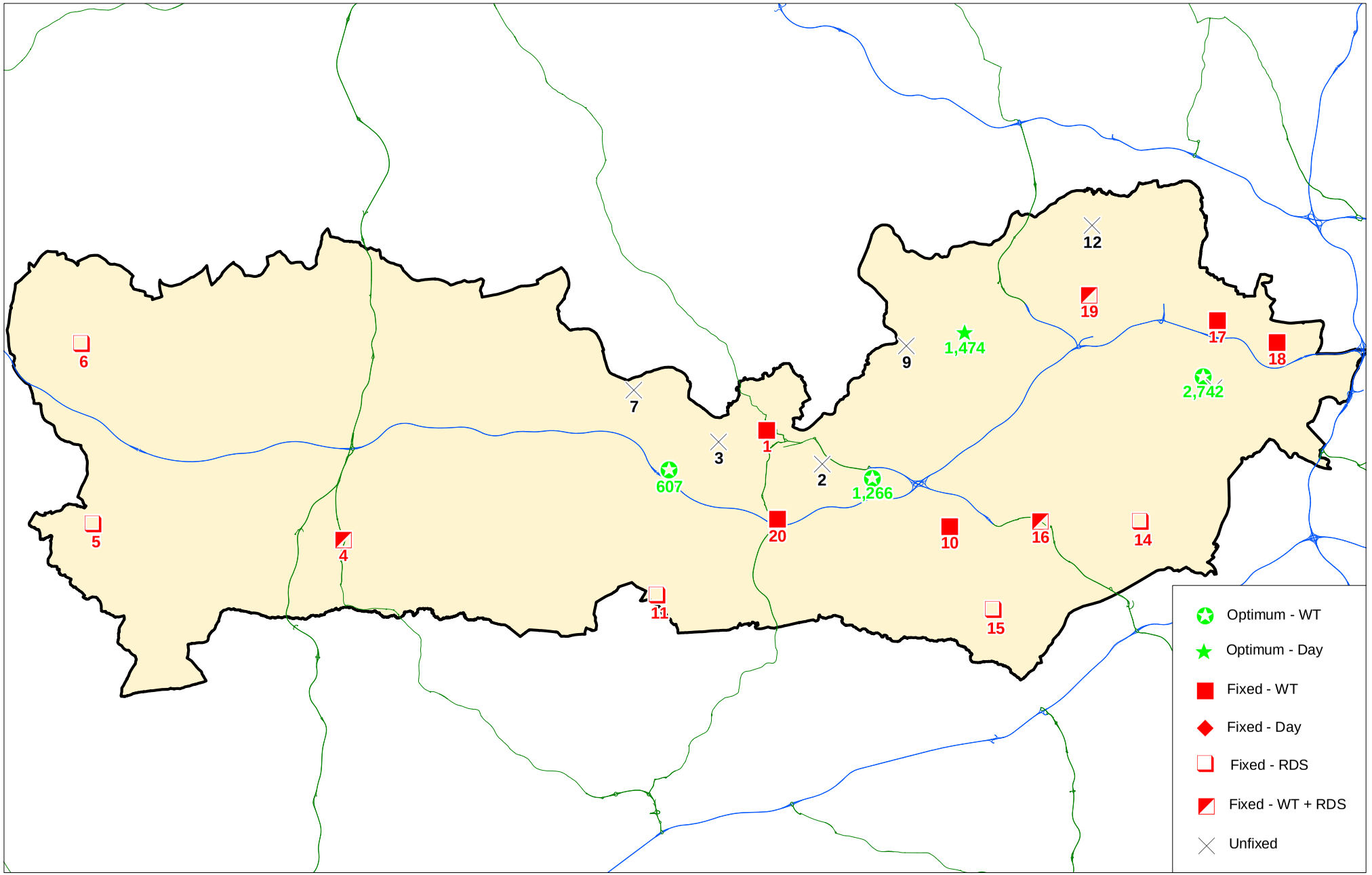

Comparison of Modelling Option 1b and Current + 10 & 13 - 2nd to DFs - 24/7
Current + 10 & 13
Option 1b
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Modelled Performance
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
Minutes
This graph compares the modelled response distribution for Modellin Option 1b and the current deployment with Stations 10 & 13 changed. The curves show the performance of the 2nd appliance to Dwelling Fires.

F3d


Comparison of Modelling Option 1b and Current + 10 & 13 - 1st to RTCs - 24/7
Current + 10 & 13
Option 1b
Modelled Performance
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
Minutes
This graph compares the modelled response distribution for Modellin Option 1b and the current deployment with Stations 10 & 13 changed. The curves show the performance of the 1st appliance to RTCs.

F3e

Modelling Option 2a Part 1



F4a

Royal Berkshire Fire & Rescue Service

Response Distributions for Modelling Option 2a Part 1 - 24/7

Performance Against Current Plus Stations 10 & 13 Changed

1st Appliance to Dwelling Fires

Mins	1	2	3	4	5	6	7	**8**	9	**10**	11	12	13	14	15	16	17	18	19	20
Current + 10 & 13	0.0%	0.5%	4.9%	16.6%	35.9%	56.0%	70.6%	**81.0%**	88.2%	**92.4%**	95.5%	97.1%	98.2%	98.9%	99.4%	99.5%	99.7%	99.8%	99.8%	99.9%
Option 2a - Part 1	0.0%	1.0%	5.6%	17.5%	36.0%	55.4%	71.2%	**82.3%**	89.5%	**93.7%**	96.2%	97.7%	98.5%	99.1%	99.5%	99.7%	99.8%	99.9%	100.0%	100.0%

2nd Appliance to Dwelling Fires

Mins	1	2	3	4	5	6	7	8	9	**10**	11	**12**	13	14	15	16	17	18	19	20
Current + 10 & 13	0.0%	0.0%	0.6%	3.0%	8.6%	17.6%	29.1%	43.9%	57.2%	**69.2%**	78.8%	**85.1%**	89.7%	92.6%	94.4%	95.6%	96.6%	97.5%	98.2%	98.8%
Option 2a - Part 1	0.0%	0.0%	0.0%	0.7%	3.3%	10.3%	20.0%	34.6%	52.2%	**67.9%**	79.1%	**86.2%**	91.2%	94.2%	96.1%	97.3%	98.2%	98.9%	99.2%	99.5%

1st Appliance to RTCs

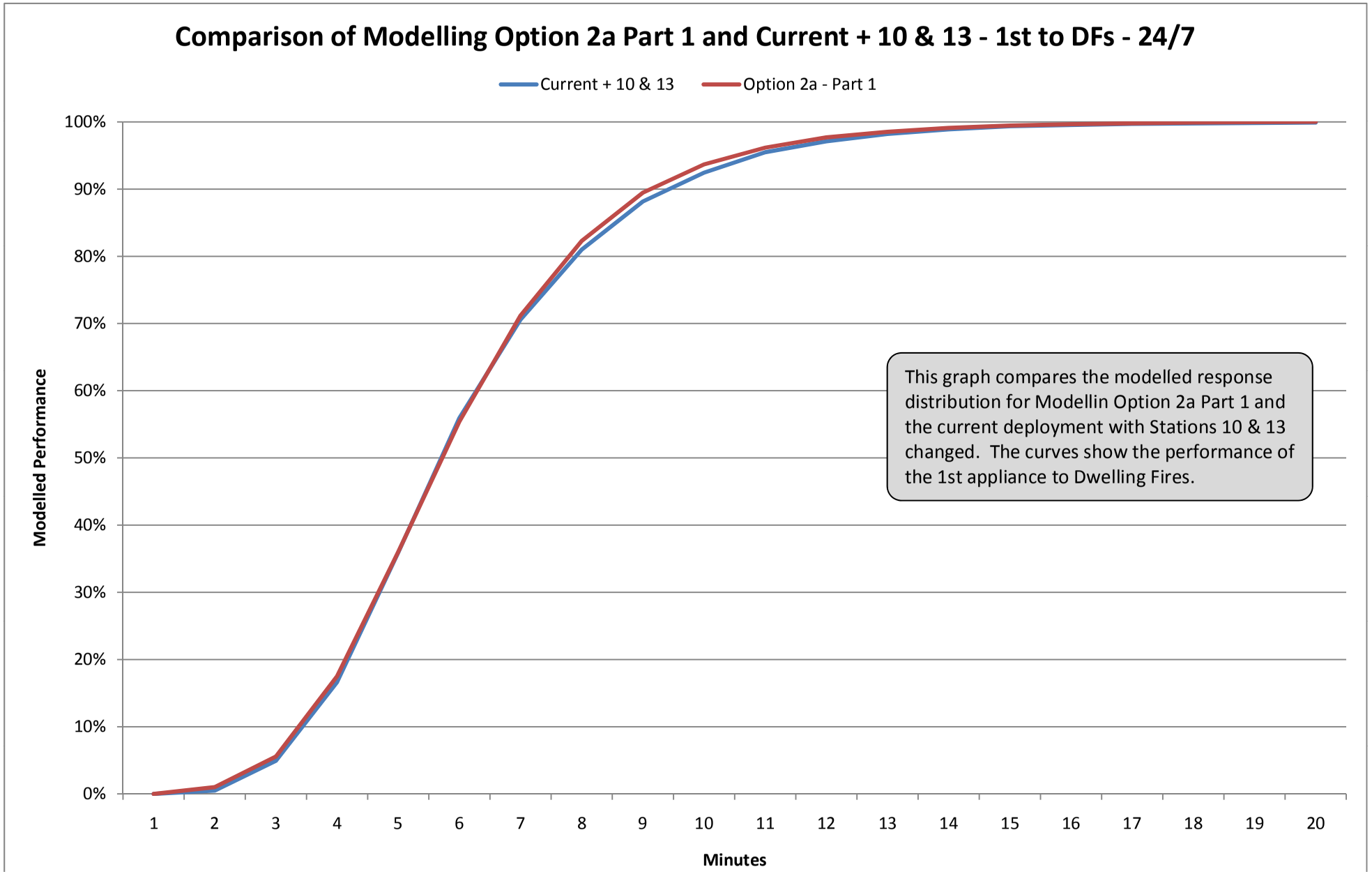
Mins	1	2	3	4	5	6	7	8	9	10	**11**	12	13	14	15	16	17	18	19	20
Current + 10 & 13	0.1%	1.0%	4.5%	11.2%	20.9%	33.6%	46.5%	57.4%	66.7%	74.2%	**80.3%**	85.5%	89.7%	92.6%	94.8%	96.4%	97.2%	97.9%	98.3%	98.6%
Option 2a - Part 1	0.0%	1.0%	5.1%	12.9%	24.0%	38.3%	52.0%	63.0%	72.5%	79.5%	**85.1%**	89.4%	92.9%	95.2%	96.4%	97.2%	97.7%	98.1%	98.4%	98.7%

Note:

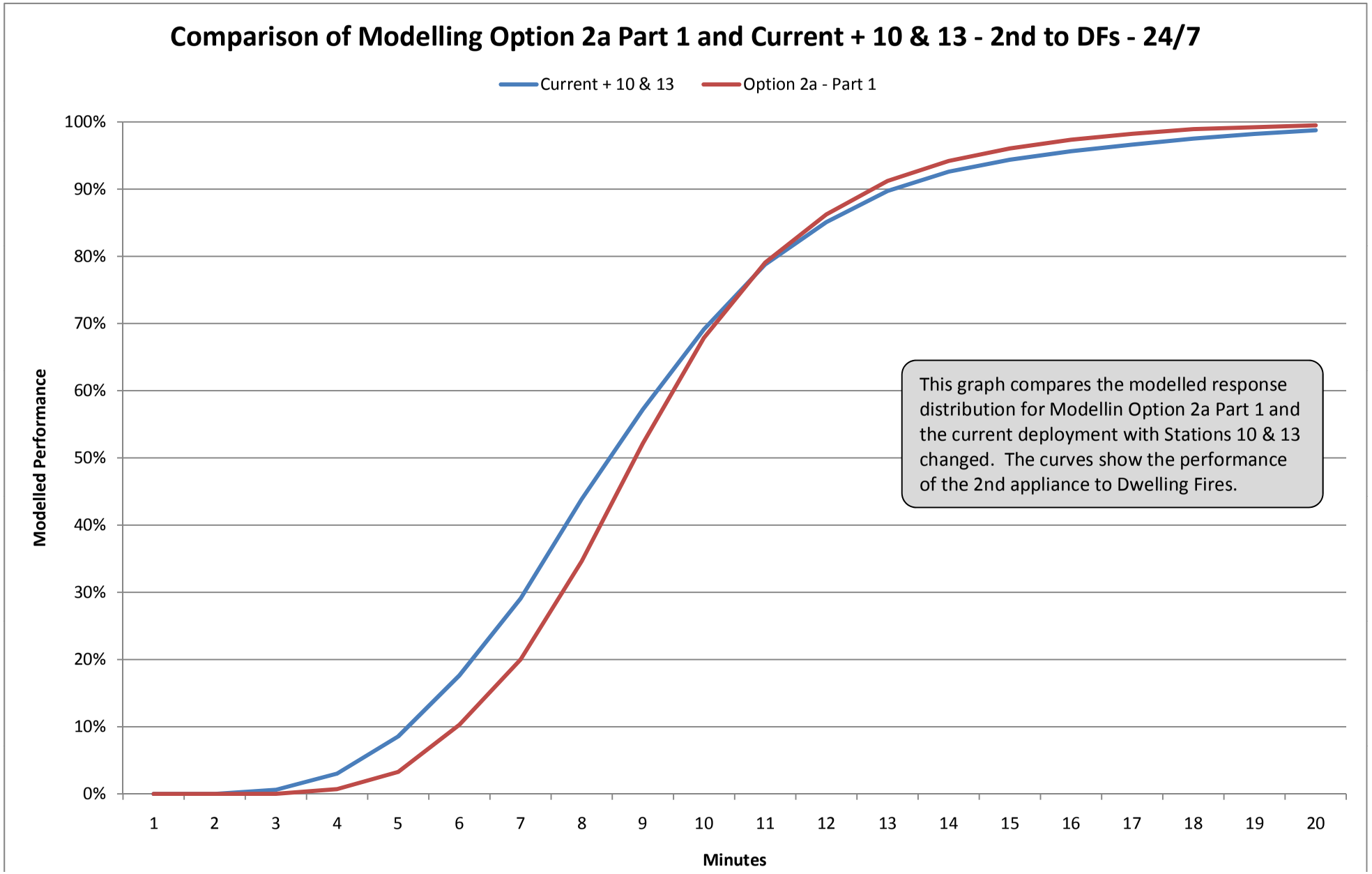
'Current + 10 & 13' assumes current availability at RDS stations and new crewing arrangements at Stations 10 & 13

This table compares the Modelling Option 2a Part 1 (fixing 8 WDS plus 8 RDS and locating three optimal WDS plus one optimal day only crew) against the current deployment with Stations 10 & 13 changed. The impacts are shown for the 24/7 period, and cover 1st and 2nd appliance to DFs and 1st to RTCs.

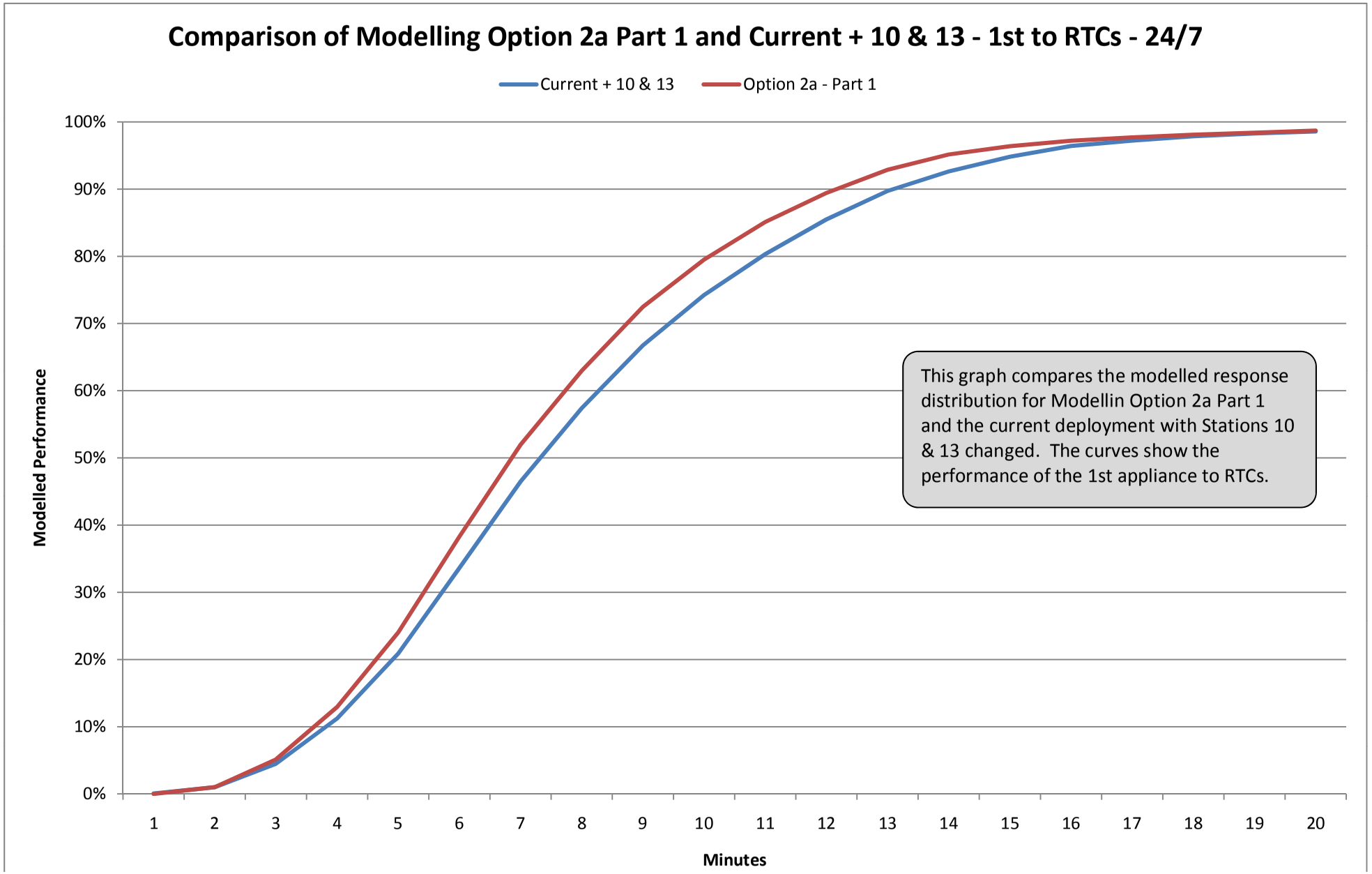
F4b


Comparison of Modelling Option 2a Part 1 and Current + 10 & 13 - 1st to DFs - 24/7
Current + 10 & 13
Option 2a - Part 1
Modelled Performance
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
Minutes
This graph compares the modelled response distribution for Modellin Option 2a Part 1 and the current deployment with Stations 10 & 13 changed. The curves show the performance of the 1st appliance to Dwelling Fires.

F4c


Comparison of Modelling Option 2a Part 1 and Current + 10 & 13 - 2nd to DFs - 24/7
Current + 10 & 13
Option 2a - Part 1
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Modelled Performance
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
Minutes
This graph compares the modelled response distribution for Modellin Option 2a Part 1 and the current deployment with Stations 10 & 13 changed. The curves show the performance of the 2nd appliance to Dwelling Fires.

F4d


Comparison of Modelling Option 2a Part 1 and Current + 10 & 13 - 1st to RTCs - 24/7
Current + 10 & 13
Option 2a - Part 1
Modelled Performance
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
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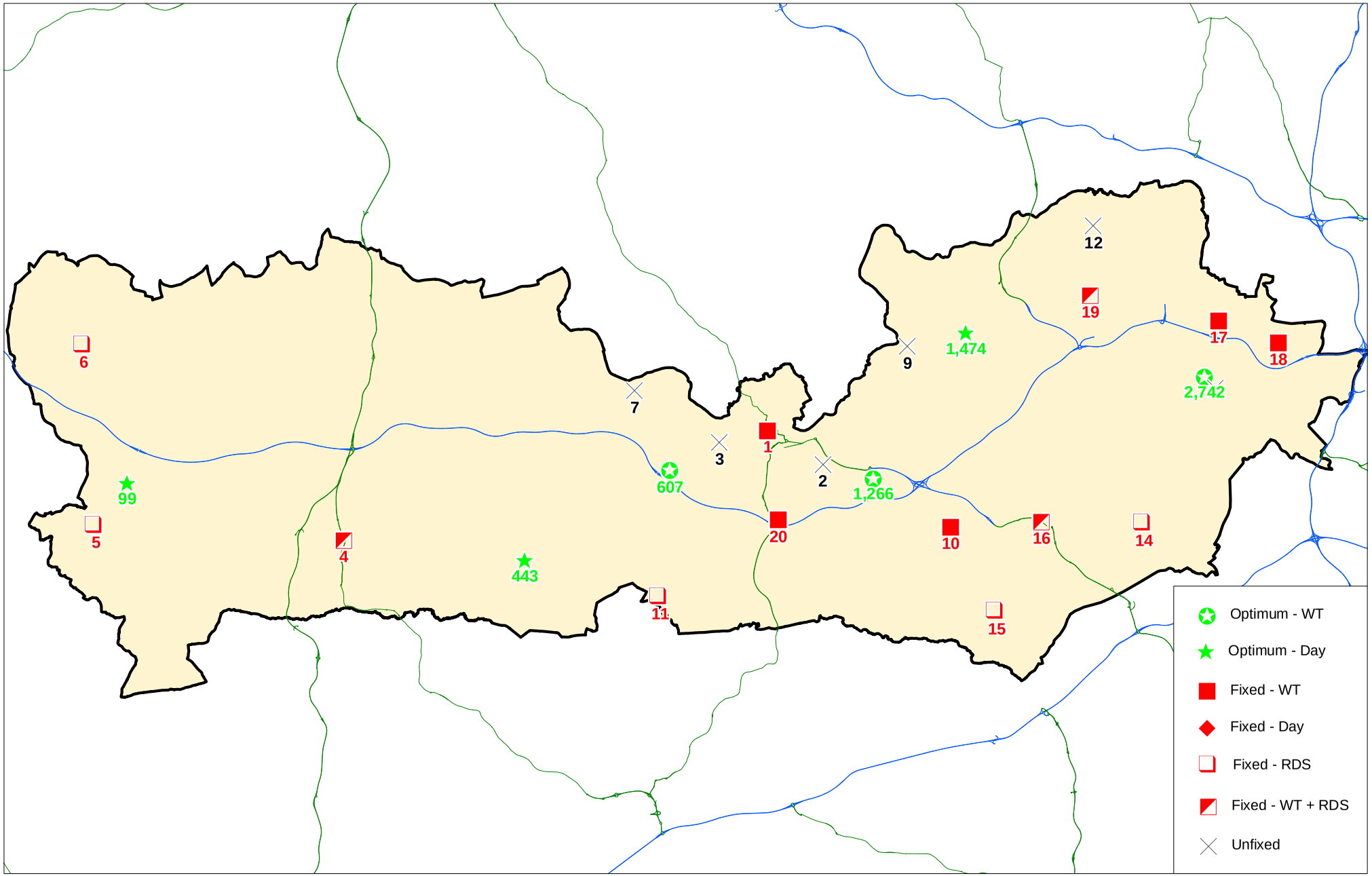
20
Minutes
This graph compares the modelled response distribution for Modellin Option 2a Part 1 and the current deployment with Stations 10 & 13 changed. The curves show the performance of the 1st appliance to RTCs.

F4e

Modelling Option 2a Part 2



F5a

Royal Berkshire Fire & Rescue Service

Response Distributions for Modelling Option 2a Part 2 - 24/7

Performance Against Current Plus Stations 10 & 13 Changed

1st Appliance to Dwelling Fires

Mins	1	2	3	4	5	6	7	**8**	9	**10**	11	12	13	14	15	16	17	18	19	20
Current + 10 & 13	0.0%	0.5%	4.9%	16.6%	35.9%	56.0%	70.6%	**81.0%**	88.2%	**92.4%**	95.5%	97.1%	98.2%	98.9%	99.4%	99.5%	99.7%	99.8%	99.8%	99.9%
Option 2a - Part 2	0.0%	1.0%	5.6%	17.7%	36.2%	55.7%	71.8%	**83.0%**	90.1%	**94.1%**	96.4%	98.0%	98.7%	99.2%	99.5%	99.7%	99.8%	100.0%	100.0%	100.0%

2nd Appliance to Dwelling Fires

Mins	1	2	3	4	5	6	7	8	9	**10**	11	**12**	13	14	15	16	17	18	19	20
Current + 10 & 13	0.0%	0.0%	0.6%	3.0%	8.6%	17.6%	29.1%	43.9%	57.2%	**69.2%**	78.8%	**85.1%**	89.7%	92.6%	94.4%	95.6%	96.6%	97.5%	98.2%	98.8%
Option 2a - Part 2	0.0%	0.0%	0.0%	0.7%	3.4%	10.4%	20.3%	35.2%	53.1%	**69.3%**	80.5%	**87.8%**	92.5%	95.2%	96.8%	97.8%	98.6%	99.2%	99.5%	99.7%

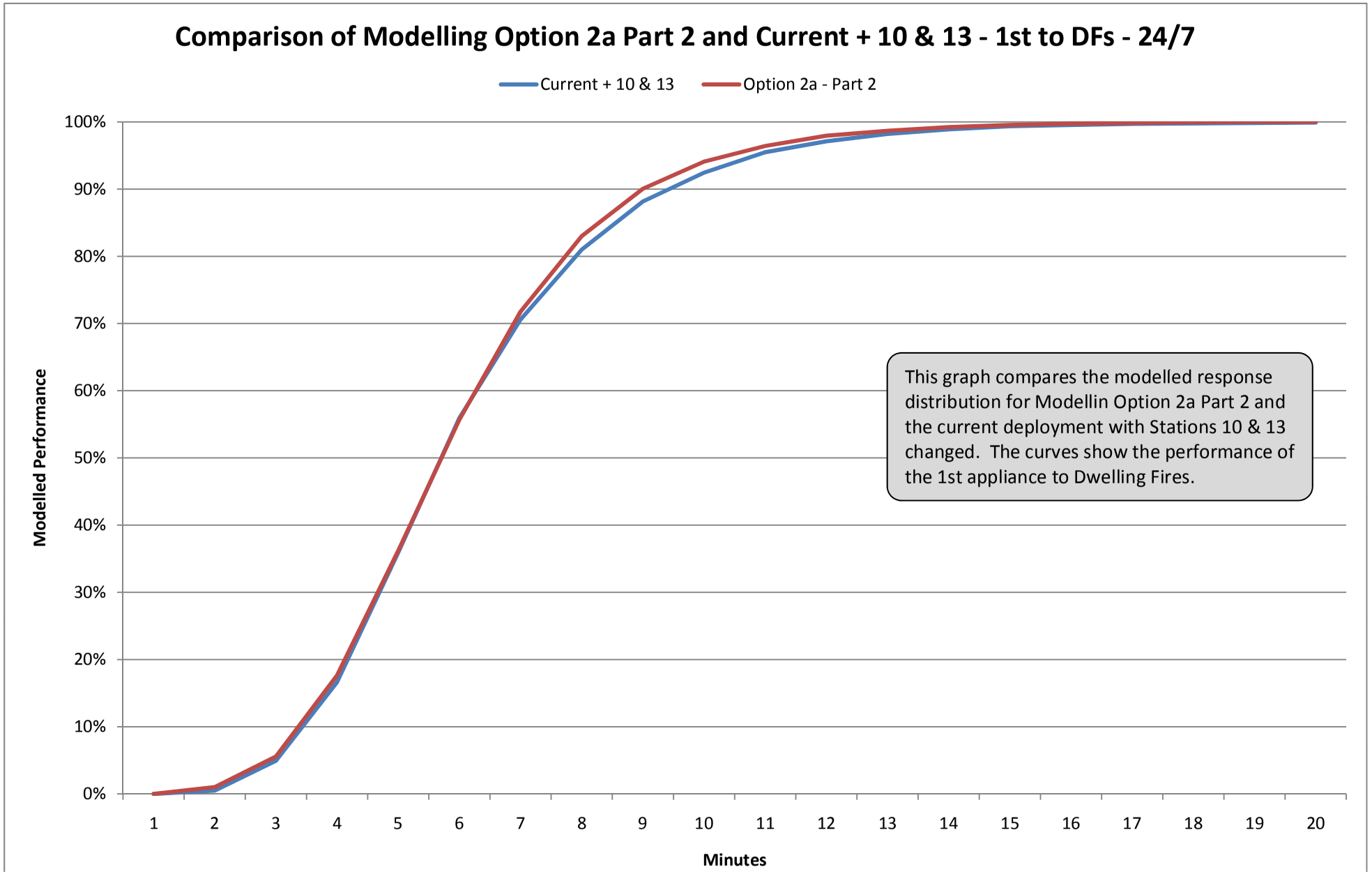
1st Appliance to RTCs

Mins	1	2	3	4	5	6	7	8	9	10	**11**	12	13	14	15	16	17	18	19	20
Current + 10 & 13	0.1%	1.0%	4.5%	11.2%	20.9%	33.6%	46.5%	57.4%	66.7%	74.2%	**80.3%**	85.5%	89.7%	92.6%	94.8%	96.4%	97.2%	97.9%	98.3%	98.6%
Option 2a - Part 2	0.0%	1.1%	5.5%	13.7%	25.2%	39.9%	54.1%	65.5%	74.7%	81.2%	**86.6%**	90.5%	93.6%	95.7%	96.9%	97.6%	98.0%	98.4%	98.7%	98.9%

Note:

'Current + 10 & 13' assumes current availability at RDS stations and new crewing arrangements at Stations 10 & 13

This table compares the Modelling Option 2a Part 2 (fixing 8 WDS plus 8 RDS and locating three optimal WDS plus three optimal day only crew) against the current deployment with Stations 10 & 13 changed. The impacts are shown for the 24/7 period, and cover 1st and 2nd appliance to DFs and 1st to RTCs.


Comparison of Modelling Option 2a Part 2 and Current + 10 & 13 - 1st to DFs - 24/7
Current + 10 & 13
Option 2a - Part 2
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Modelled Performance
1
2
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13
14
15
16
17
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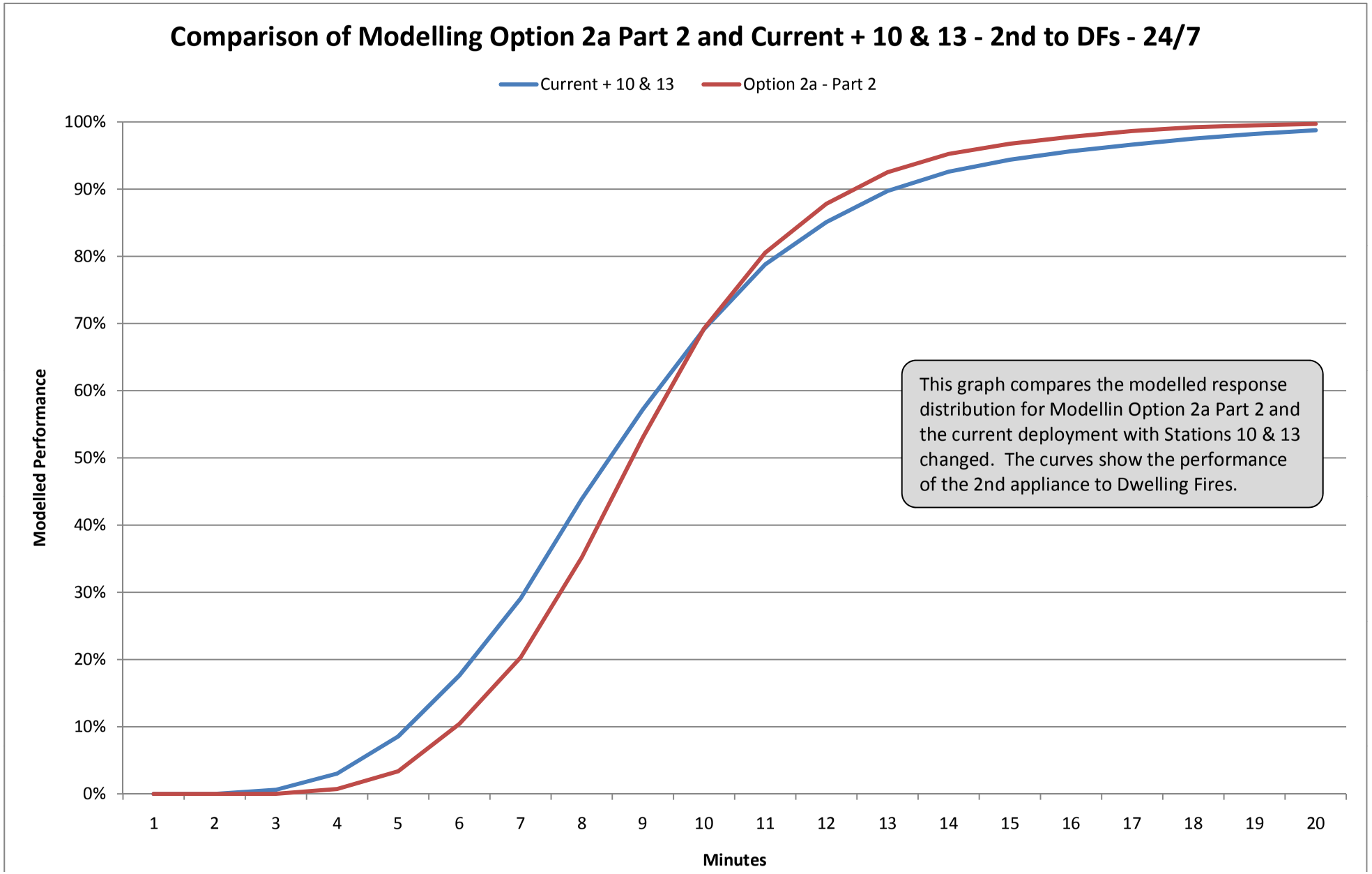
19
20
Minutes
This graph compares the modelled response distribution for Modellin Option 2a Part 2 and the current deployment with Stations 10 & 13 changed. The curves show the performance of the 1st appliance to Dwelling Fires.

F5c


Comparison of Modelling Option 2a Part 2 and Current + 10 & 13 - 2nd to DFs - 24/7
Current + 10 & 13
Option 2a - Part 2
Modelled Performance
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
1
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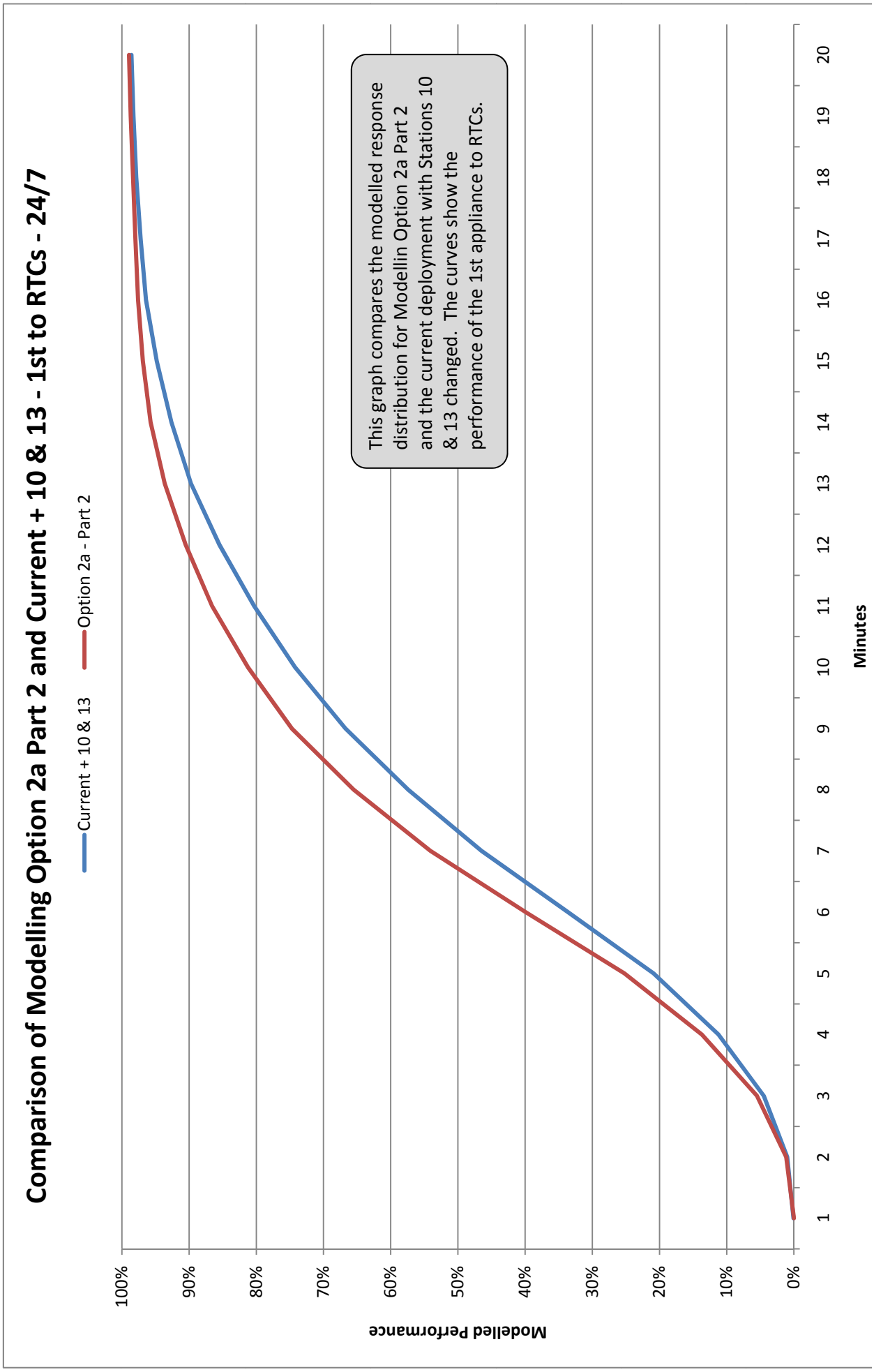
19
20
Minutes
This graph compares the modelled response distribution for Modellin Option 2a Part 2 and the current deployment with Stations 10 & 13 changed. The curves show the performance of the 2nd appliance to Dwelling Fires.

F5d


Comparison of Modelling Option 2a Part 2 and Current + 10 & 13 - 1st to RTCs - 24/7
Current + 10 & 13
Option 2a - Part 2
This graph compares the modelled response distribution for Modellin Option 2a Part 2 and the current deployment with Stations 10 & 13 changed. The curves show the performance of the 1st appliance to RTCs.
Modelled Performance
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
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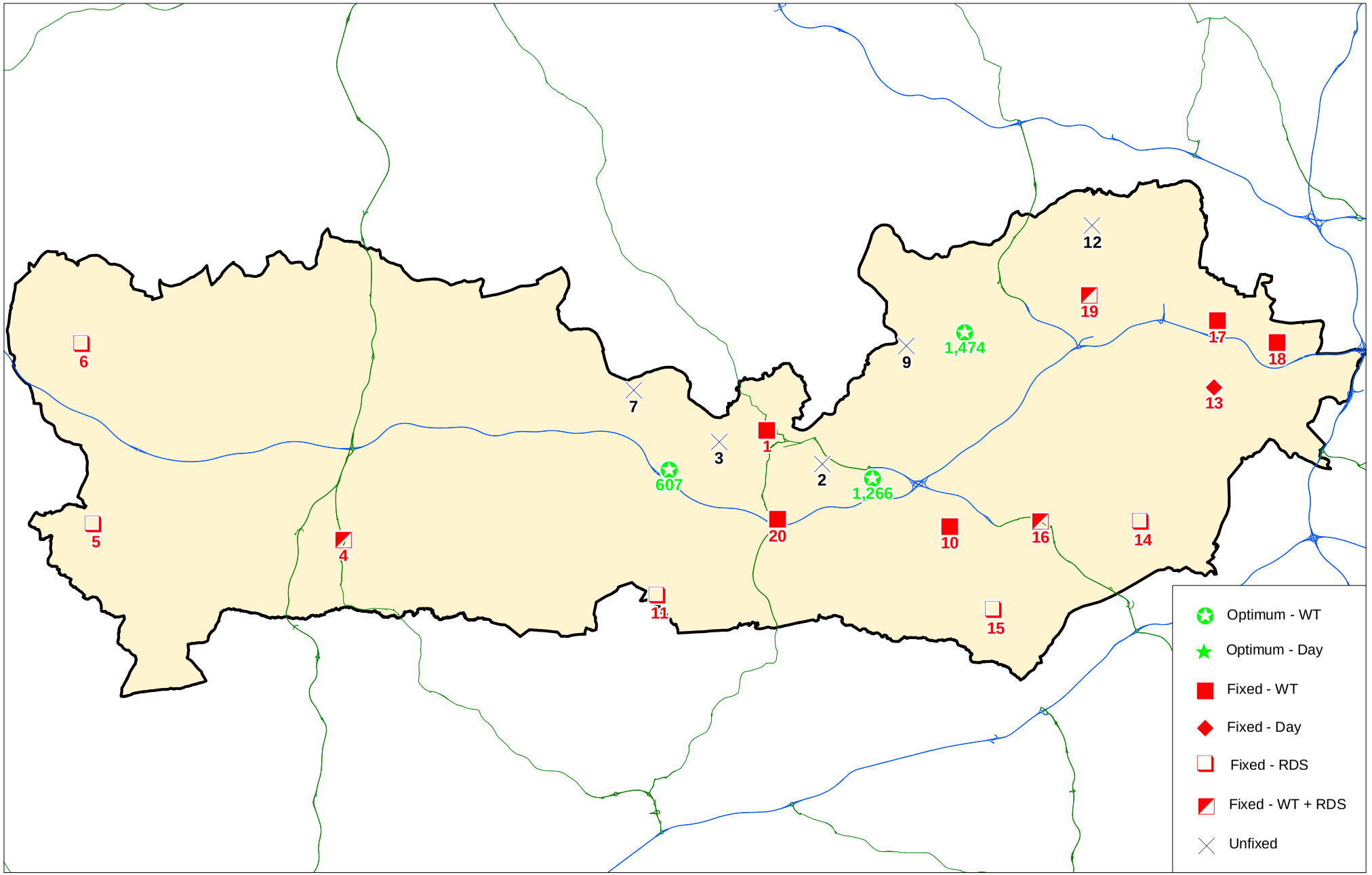
Minutes

Modelling Option 2b Part 1



F6a

Royal Berkshire Fire & Rescue Service

Response Distributions for Modelling Option 2b Part 1 - 24/7

Performance Against Current Plus Stations 10 & 13 Changed

1st Appliance to Dwelling Fires

Mins	1	2	3	4	5	6	7	**8**	9	**10**	11	12	13	14	15	16	17	18	19	20
Current + 10 & 13	0.0%	0.5%	4.9%	16.6%	35.9%	56.0%	70.6%	**81.0%**	88.2%	**92.4%**	95.5%	97.1%	98.2%	98.9%	99.4%	99.5%	99.7%	99.8%	99.8%	99.9%
Option 2b - Part 1	0.0%	0.7%	4.8%	16.2%	34.3%	53.5%	69.2%	**80.8%**	88.5%	**92.9%**	95.8%	97.5%	98.4%	99.1%	99.4%	99.6%	99.7%	99.9%	100.0%	100.0%

2nd Appliance to Dwelling Fires

Mins	1	2	3	4	5	6	7	8	9	**10**	11	**12**	13	14	15	16	17	18	19	20
Current + 10 & 13	0.0%	0.0%	0.6%	3.0%	8.6%	17.6%	29.1%	43.9%	57.2%	**69.2%**	78.8%	**85.1%**	89.7%	92.6%	94.4%	95.6%	96.6%	97.5%	98.2%	98.8%
Option 2b - Part 1	0.0%	0.0%	0.0%	0.2%	1.7%	6.6%	15.4%	30.1%	47.4%	**63.1%**	76.3%	**85.2%**	90.8%	93.7%	95.8%	97.2%	98.2%	98.9%	99.3%	99.6%

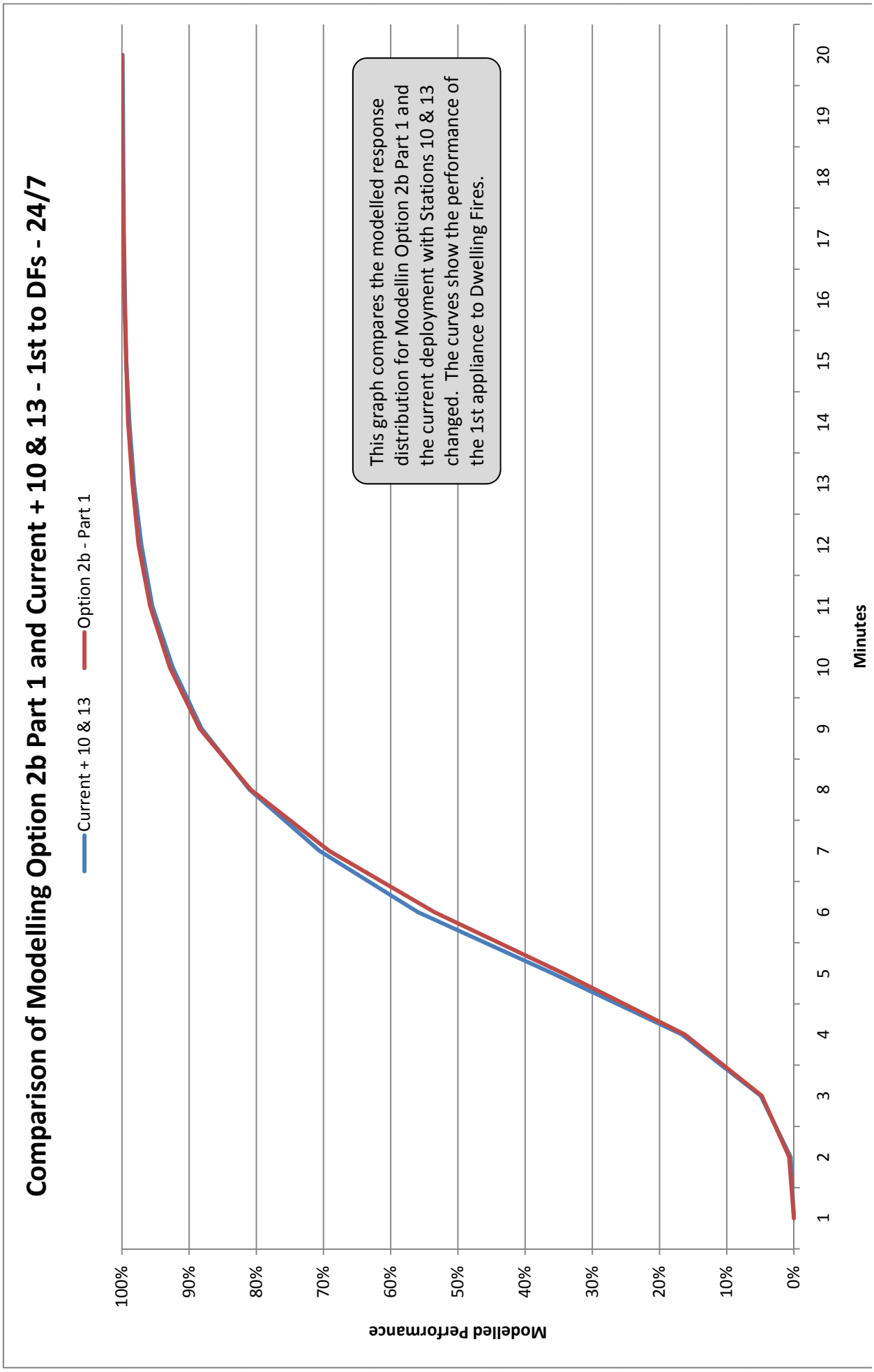
1st Appliance to RTCs

Mins	1	2	3	4	5	6	7	8	9	10	**11**	12	13	14	15	16	17	18	19	20
Current + 10 & 13	0.1%	1.0%	4.5%	11.2%	20.9%	33.6%	46.5%	57.4%	66.7%	74.2%	**80.3%**	85.5%	89.7%	92.6%	94.8%	96.4%	97.2%	97.9%	98.3%	98.6%
Option 2b - Part 1	0.0%	0.9%	4.7%	12.5%	23.3%	37.6%	51.6%	63.1%	72.9%	80.2%	**85.7%**	89.8%	93.1%	95.4%	96.5%	97.2%	97.7%	98.1%	98.4%	98.7%

Note:

'Current + 10 & 13' assumes current availability at RDS stations and new crewing arrangements at Stations 10 & 13

This table compares the Modelling Option 2b Part 1 (fixing 8 WDS, Station 13 as day only plus 8 RDS and locating three optimal WDS stations) against the current deployment with Stations 10 & 13 changed. The impacts are shown for the 24/7 period, and cover 1st and 2nd appliance to DFs and 1st to RTCs.


Comparison of Modelling Option 2b Part 1 and Current + 10 & 13 - 1st to DFs - 24/7
Current + 10 & 13
Option 2b - Part 1
This graph compares the modelled response distribution for Modellin Option 2b Part 1 and the current deployment with Stations 10 & 13 changed. The curves show the performance of the 1st appliance to Dwelling Fires.
Modelled Performance
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
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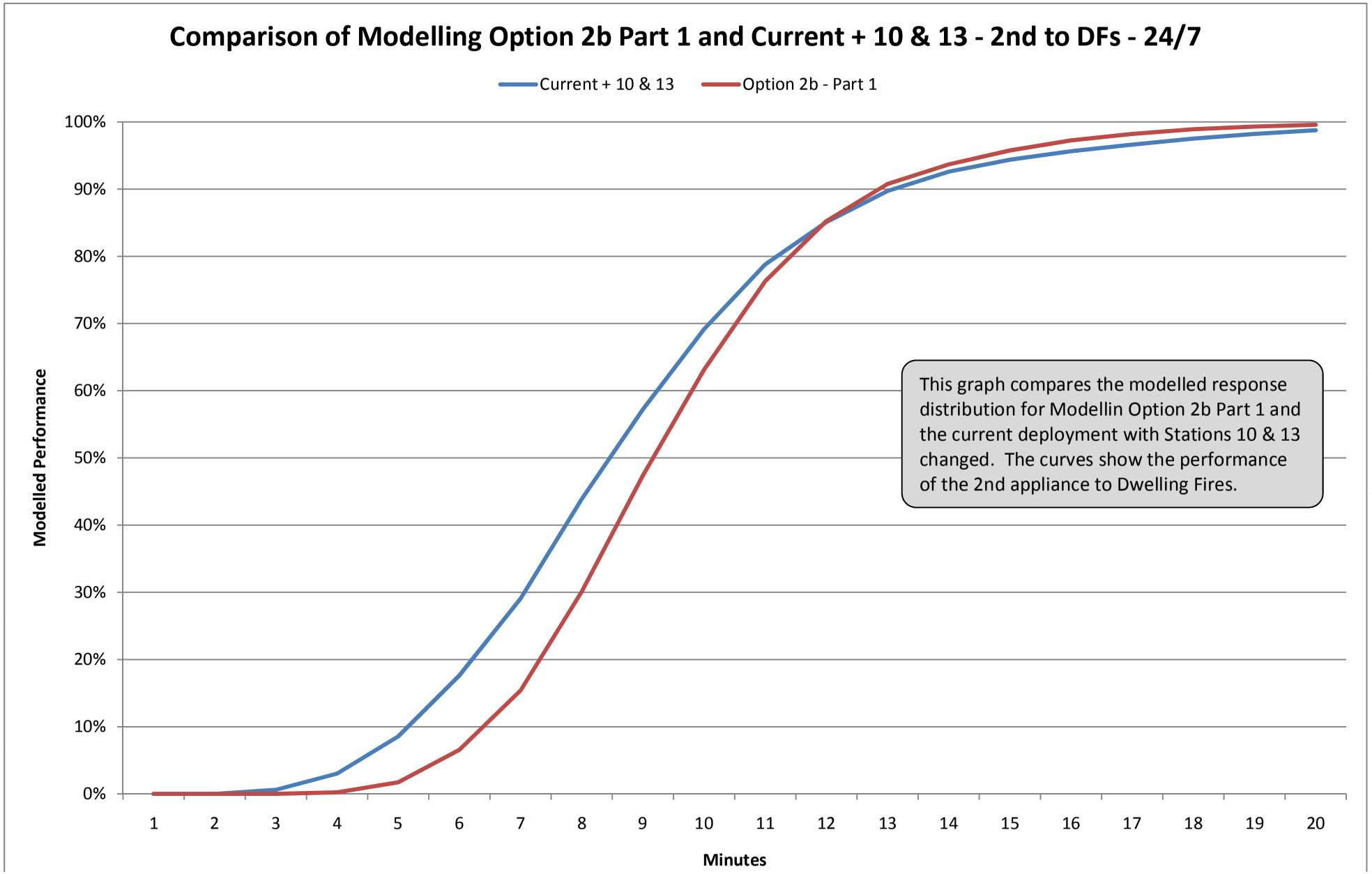
Minutes


Comparison of Modelling Option 2b Part 1 and Current + 10 & 13 - 2nd to DFs - 24/7
Current + 10 & 13
Option 2b - Part 1
Modelled Performance
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
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19
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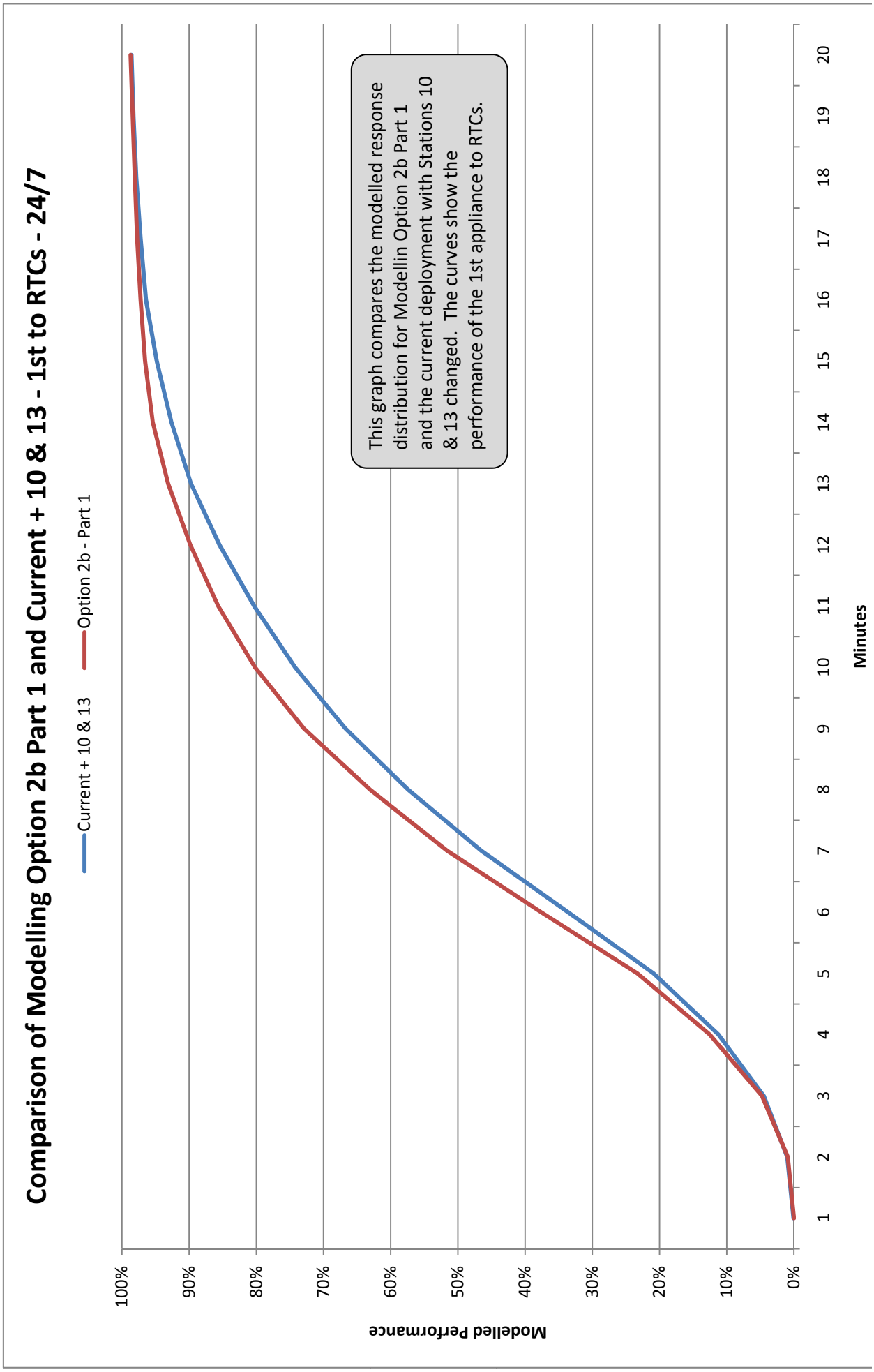
Minutes
This graph compares the modelled response distribution for Modellin Option 2b Part 1 and the current deployment with Stations 10 & 13 changed. The curves show the performance of the 2nd appliance to Dwelling Fires.

F6d


Comparison of Modelling Option 2b Part 1 and Current + 10 & 13 - 1st to RTCs - 24/7
Current + 10 & 13
Option 2b - Part 1
This graph compares the modelled response distribution for Modellin Option 2b Part 1 and the current deployment with Stations 10 & 13 changed. The curves show the performance of the 1st appliance to RTCs.
Modelled Performance
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
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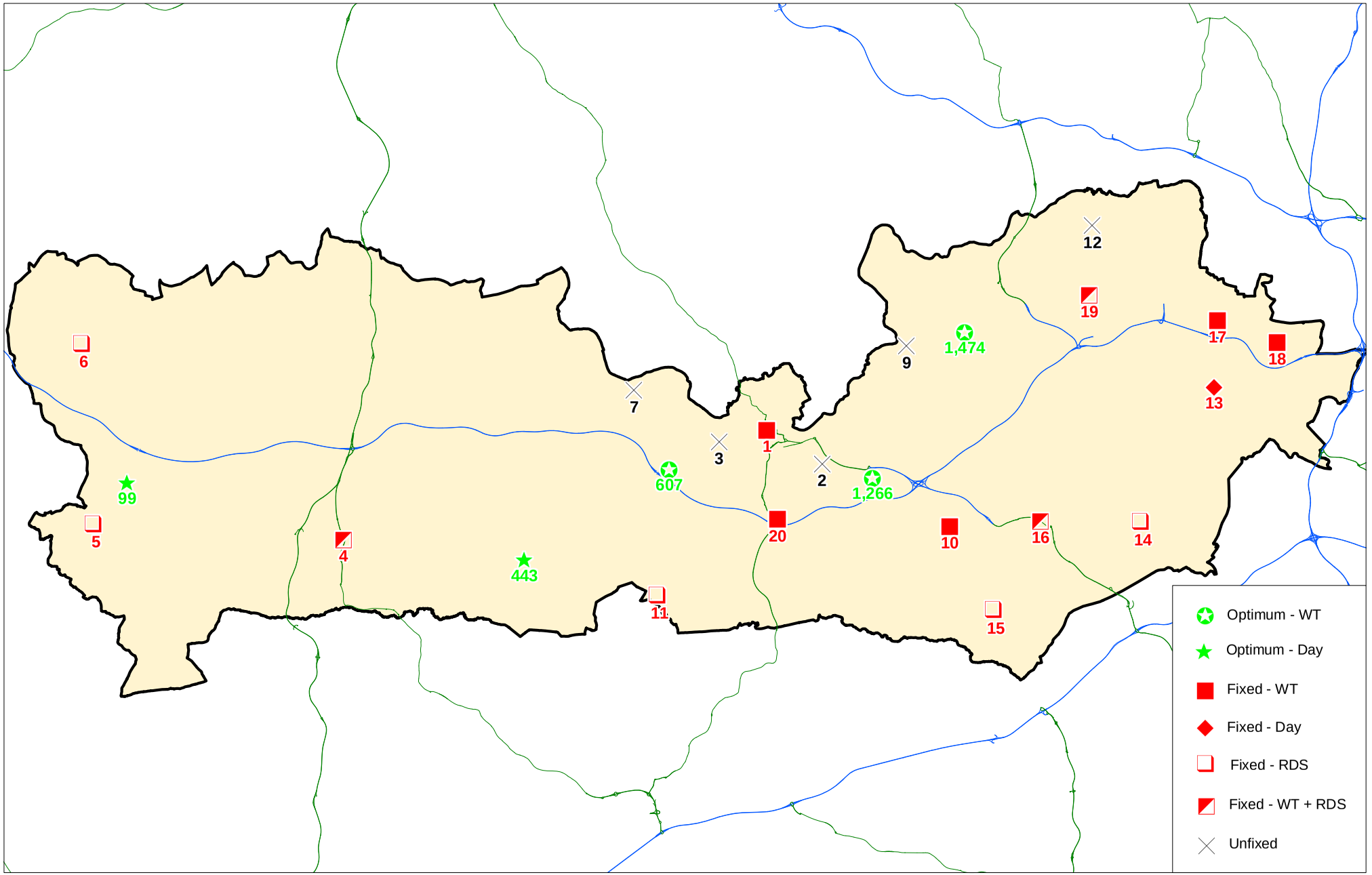
Minutes

Modelling Option 2b Part 2



F7a

Royal Berkshire Fire & Rescue Service

Response Distributions for Modelling Option 2b Part 2 - 24/7

Performance Against Current Plus Stations 10 & 13 Changed

1st Appliance to Dwelling Fires

Mins	1	2	3	4	5	6	7	**8**	9	**10**	11	12	13	14	15	16	17	18	19	20
Current + 10 & 13	0.0%	0.5%	4.9%	16.6%	35.9%	56.0%	70.6%	**81.0%**	88.2%	**92.4%**	95.5%	97.1%	98.2%	98.9%	99.4%	99.5%	99.7%	99.8%	99.8%	99.9%
Option 2b - Part 2	0.0%	0.7%	4.8%	16.4%	34.5%	53.8%	69.7%	**81.5%**	89.0%	**93.3%**	96.1%	97.8%	98.6%	99.2%	99.4%	99.7%	99.8%	100.0%	100.0%	100.0%

2nd Appliance to Dwelling Fires

Mins	1	2	3	4	5	6	7	8	9	**10**	11	**12**	13	14	15	16	17	18	19	20
Current + 10 & 13	0.0%	0.0%	0.6%	3.0%	8.6%	17.6%	29.1%	43.9%	57.2%	**69.2%**	78.8%	**85.1%**	89.7%	92.6%	94.4%	95.6%	96.6%	97.5%	98.2%	98.8%
Option 2b - Part 2	0.0%	0.0%	0.0%	0.3%	1.8%	6.7%	15.7%	30.7%	48.3%	**64.5%**	77.8%	**86.8%**	92.1%	94.7%	96.5%	97.7%	98.6%	99.2%	99.6%	99.8%

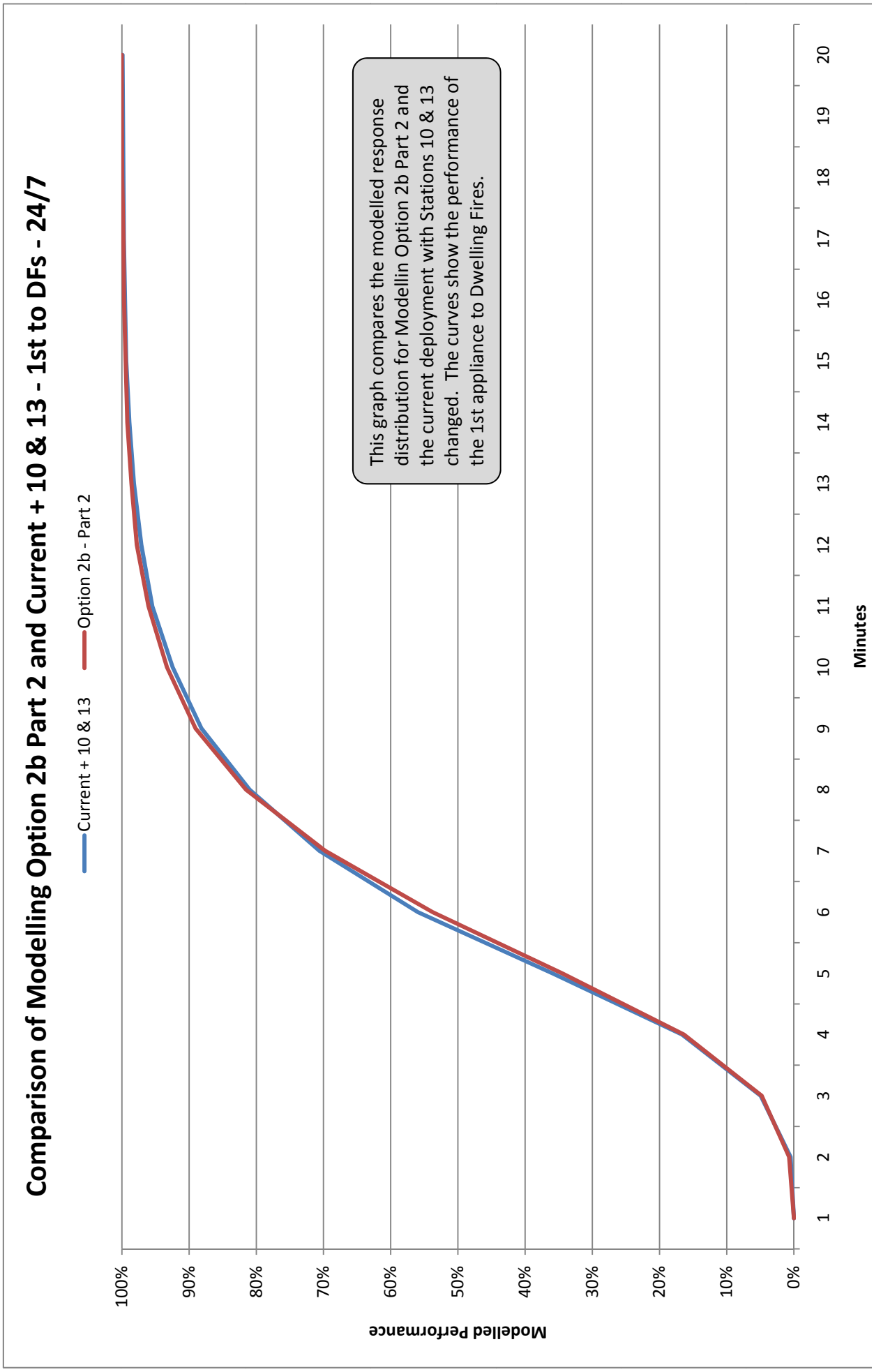
1st Appliance to RTCs

Mins	1	2	3	4	5	6	7	8	9	10	**11**	12	13	14	15	16	17	18	19	20
Current + 10 & 13	0.1%	1.0%	4.5%	11.2%	20.9%	33.6%	46.5%	57.4%	66.7%	74.2%	**80.3%**	85.5%	89.7%	92.6%	94.8%	96.4%	97.2%	97.9%	98.3%	98.6%
Option 2b - Part 2	0.0%	1.0%	5.1%	13.3%	24.5%	39.3%	53.7%	65.6%	75.2%	81.9%	**87.1%**	90.9%	93.9%	96.0%	97.0%	97.6%	98.0%	98.3%	98.7%	98.9%

Note:

'Current + 10 & 13' assumes current availability at RDS stations and new crewing arrangements at Stations 10 & 13

This table compares the Modelling Option 2b Part 2 (fixing 8 WDS, Station 13 as day only plus 8 RDS and locating three optimal WDS and two optimal day only crew) against the current deployment with Stations 10 & 13 changed. The impacts are shown for the 24/7 period, and cover 1st and 2nd appliance to DFs and 1st to RTCs.


Comparison of Modelling Option 2b Part 2 and Current + 10 & 13 - 1st to DFs - 24/7
Current + 10 & 13
Option 2b - Part 2
This graph compares the modelled response distribution for Modellin Option 2b Part 2 and the current deployment with Stations 10 & 13 changed. The curves show the performance of the 1st appliance to Dwelling Fires.
Modelled Performance
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
1
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3
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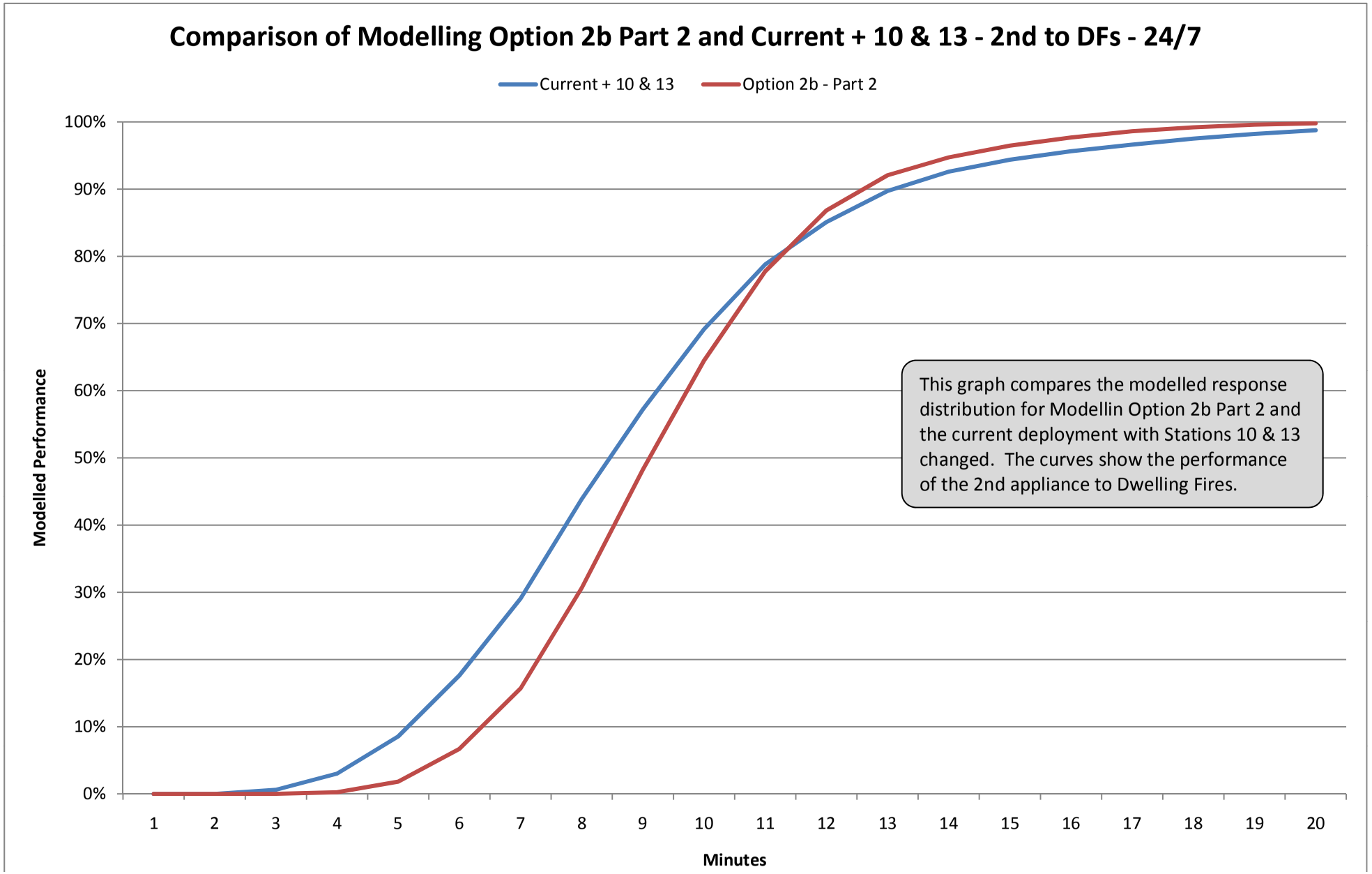
15
16
17
18
19
20
Minutes


Comparison of Modelling Option 2b Part 2 and Current + 10 & 13 - 2nd to DFs - 24/7
Current + 10 & 13
Option 2b - Part 2
Modelled Performance
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
1
2
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4
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12
13
14
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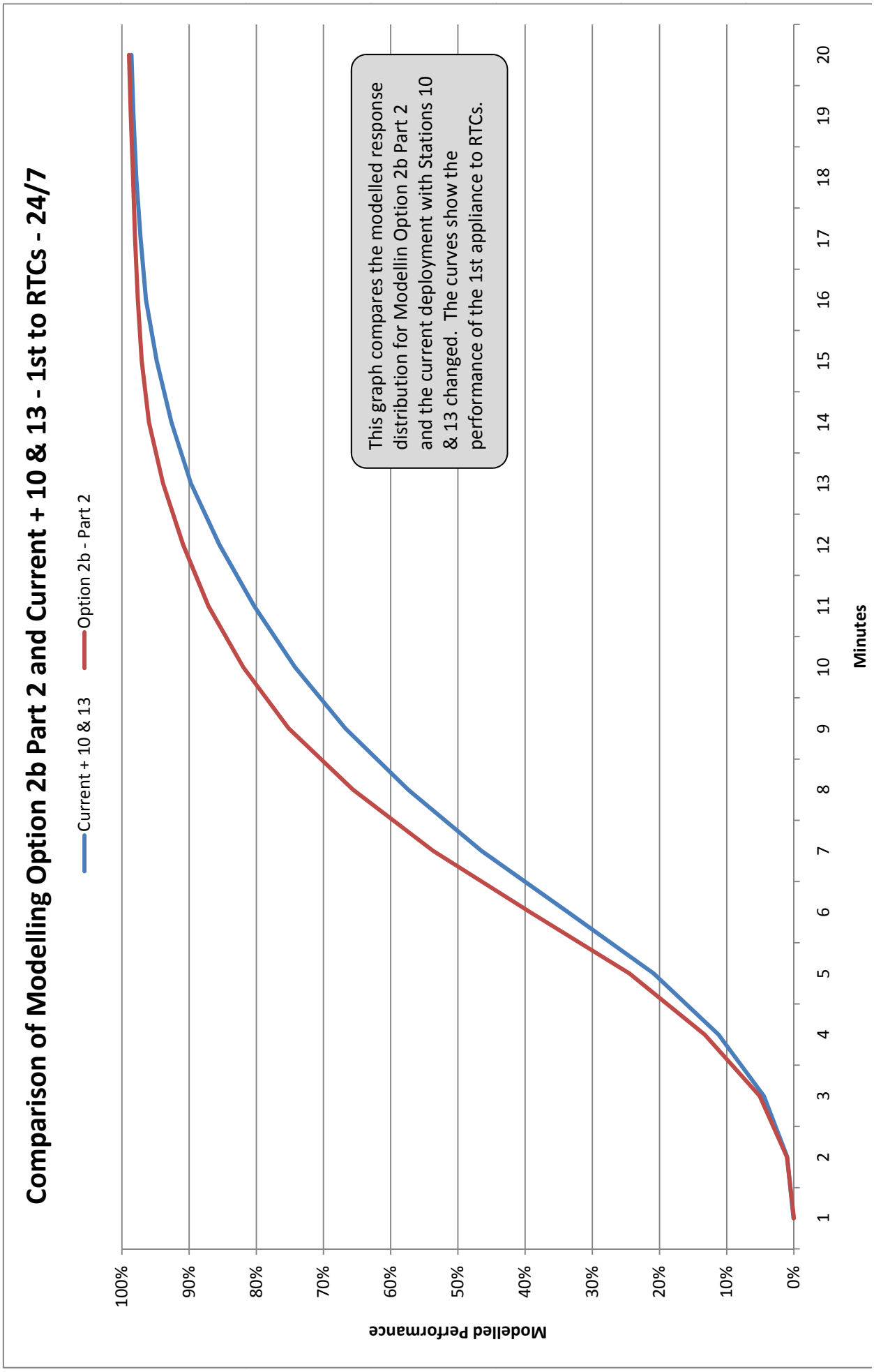
17
18
19
20
Minutes
This graph compares the modelled response distribution for Modellin Option 2b Part 2 and the current deployment with Stations 10 & 13 changed. The curves show the performance of the 2nd appliance to Dwelling Fires.

F7d


Comparison of Modelling Option 2b Part 2 and Current + 10 & 13 - 1st to RTCs - 24/7
Current + 10 & 13
Option 2b - Part 2
This graph compares the modelled response distribution for Modellin Option 2b Part 2 and the current deployment with Stations 10 & 13 changed. The curves show the performance of the 1st appliance to RTCs.
Modelled Performance
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
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5
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Minutes