# ROYAL BERKSHIRE FIRE & RESCUE SERVICE

## *Final Report: East Berkshire Modelling*

ORH

### *Introduction*

1. ORH Limited has been asked by the Royal Berkshire Fire & Rescue Service (RBFRS) to undertake modelling with regards to the deployment of pumping appliances at stations in East Berkshire.

2. ORH has provided RBFRS with modelling support on a number of projects since 2005 – the model was most recently validated in November 2012 using data up to and including financial year 2011/12. The scope of the modelling in this report has been to support RBFRS in the development of options for the IRMP, and in particular:

    a) To update the modelled base position to reflect unavailability levels from the most recent financial year (2012/13) and take account of changes to deployments that have occurred or are assumed will occur in the near future;

    b) To examine the impact associated with 'satellite' pumps (pumps that have to travel to and from an alternative station for the change of watch);

    c) To assess the impacts associated with a new deployment of pumping appliances in East Berkshire.

3. These three items are discussed in turn below, with the modelling results presented in the Appendices. A Draft Report Meeting took place between RBFRS and ORH and the outcomes of this are reflected in this Final Report.

### *Updating the Modelled Base Position*

4. As stated above, the model was most recently validated in November 2012 using data up to and including financial year 2011/12.

5. After discussion with RBFRS, it was determined that the operational régime of the service has not altered significantly, so the existing model has been assumed to be fit for purpose to carry out the modelling specified. However, a number of alterations to the modelled base position have been made to reflect the expected position of the service in the near future, specifically:

    a) 2012/13 RDS unavailability levels have been analysed and applied by individual appliance and period of day;

## FIGURE 1 DEPLOYMENT SUMMARY

| Station Number | Station Name | Current Crewing | Modelled Base | Proposed Option |
|---|---|---|---|---|
| 1 | Caversham Road | 1 WDS | 1 WDS | 1 WDS |
| 2 | Wokingham Road | 1 WDS | 1 WDS | 1 WDS |
| 3 | Dee Road | 1 WDS | 1 WDS | 1 WDS |
| 4 | Newbury | 1 WDS, 1 RDS | 2 WDS | 2 WDS |
| 5 | Hungerford | 1 RDS | 1 RDS | 1 RDS |
| 6 | Lambourn | 1 RDS | 1 RDS | 1 RDS |
| 7 | Pangbourne | 1 RDS | 1 RDS | 1 RDS |
| 9 | Wargrave | 1 RDS | 1 RDS | 1 RDS |
| 10 | Wokingham | 1 WDS | 1 WDS | 1 WDS |
| 11 | Mortimer | 1 RDS | 1 RDS | 1 RDS |
| 13 | Windsor - Current Station | 1 WDS | - | - |
| 13 (new) | Windsor - Tinkers Lane | - | 1 WDS* | 1 WDS* |
| 14 | Ascot | 1 RDS | 1 RDS | 1 WDS* |
| 15 | Crowthorne | 1 RDS | 1 RDS | 1 RDS |
| 16 | Bracknell | 1 WDS, 1 RDS | 1 WDS, 1 RDS | 1 WDS |
| 17 | Slough | 2 WDS | 2 WDS | 1 WDS |
| 18 | Langley | 1 WDS | 1 WDS | 1 WDS |
| 19 | Maidenhead | 1 WDS, 1 RDS | 1 WDS, 1 RDS | 1 WDS, 1 RDS |
| 20 | Whitley Wood | 1 WDS | 1 WDS | 1 WDS |

| | | | |
|---|---|---|---|
| Total WDS Pumping Appliances | 12 | 13 | 13 |
| Total RDS Pumping Appliances | 10 | 9 | 7 |

| | | | |
|---|---|---|---|
| Total Pumping Appliances | 22 | 22 | 20 |

*Satellite Wholetime Appliances

Deployment Changes

b) Newbury station has been modelled as having two wholetime appliances (no RDS);

c) Windsor station has been provided with one wholetime appliance (satellite from Slough) at Tinkers Lane, with the existing station closed.

6. The availability of RDS appliances by hour is shown in Appendix **A1** and these data have been fed in to the modelled base for 2013. The range coverage maps for 1st and 2nd response are given in Appendix **A2**; the associated response performance and workload can be seen in the comparisons with the proposed option presented in Appendix **B**.

***Satellite Locations***

7. The satellite appliance located at Tinkers Lane, Windsor is assumed to spend two hours per day travelling to and from Slough; half an hour travelling either side of each change of shift (0900 and 1800). Modelling has been undertaken to assess if this has a significant impact to response performance.

8. The expected travel time from Slough station to Tinkers Lane is 10-12 minutes. In modelling the impact on response performance, the time associated with the use of a satellite location has been split into four sections:

a) Appliance at Slough station – adverse impact on performance to the Windsor area as no appliance in Windsor;

b) Start of journey – activation time would be quicker as vehicle is already mobile, however longer travel time to Windsor area;

c) Middle to End of journey – improvement in response times as vehicle is mobile and also well located in terms of the incident distribution in the Windsor area;

d) Appliance at Tinkers Lane station – performance as base.

9. The four sections therefore have one positive, one negative and two neutral outcomes in terms of the response performance. In modelling the outputs of the sections, both individually and combined, it is clear that the impact on response times is negligible. For modelling purposes, further runs have therefore assumed that the appliance is simply based at Tinkers Lane.

***Proposed Option***

10. RBFRS have specified an alternative deployment of pumping appliances to compare to the base position. The current deployment, modelled base and proposed option are provided in Figure **1** opposite. The stations impacted by the proposed changes are compared to the modelled base:

a) Remove 1 wholetime pump from Slough (results in 1 WDS);

b) Remove the RDS pump from Bracknell (results in 1 WDS);

## FIGURE 2 WORKLOAD SUMMARY

| | Ascot | | Slough | |
|---|---|---|---|---|
| Modelling Option | 1st | 2nd | 1st | 2nd |
| 2013 Modelled Base | 47 | 6 | 1,254 | 389 |
| Proposed Option | 283 | 52 | 1,086 | 186 |
| Difference | 236 | 46 | -168 | -203 |

**Notes:**

The numbers represent the modelled average annual number of incidents to which Slough and Ascot stations provide 1st and 2nd responses

c) The RDS pump at Ascot will be replaced with 1 wholetime satellite pump from Bracknell;

11. The modelling results are presented in Appendix **B** and are given in the same format as previous modelling studies for RBFRS; results are shown for the following:

- Specific response standards (1st in 8/10 minutes and 2nd in 10/12/15 minutes to Dwelling Fires; 1st in 11 minutes to RTCs);
- The response distribution for Dwelling Fires (1st and 2nd response) and RTCs (1st response only);
- Average response times by station ground (1st and 2nd response to all incidents);
- Annual workload by station (all responses);
- Range coverage maps for 1st and 2nd response.

12. At the Service-wide level, the proposed option would provide small improvements to the performance associated with the 1st response to both Dwelling Fires and RTCs, however the performance of the 2nd response to Dwelling Fires would deteriorate (see **B1** to **B3**).

13. In comparison to the current crewing, which models one WDS and one RDS at Newbury, the modelled base position gives a significantly higher level of performance in terms of 2nd response to Dwelling Fires.

14. Significant improvements are observed for both 1st and 2nd response within the Ascot area and there are small improvements in Bracknell. The average response time for the 2nd response in Slough would increase by 2m31s with the removal of a wholetime pump (see **B4**).

15. The proposed options would also result in increased workload for Langley, Maidenhead and Windsor (Tinkers Lane) stations in providing the second response to the Slough area (see **B5**). A comparison of the workload for Slough and Ascot stations is provided in Figure **2** opposite.

16. The range coverage maps presented in Appendix **B6** also reflect the relative improvement in 1st and deterioration in 2nd appliance response (when compared to the base position shown in **A2**).

***Summary***

17. This paper has presented an updated base modelling position (taking account of RDS unavailability in 2012/13) and the modelling results associated with a deployment option for East Berkshire as put forward by RBFRS.

18. The modelling has shown that providing a wholetime appliance at Ascot would improve Service-wide performance for 1st response, however there is a deterioration in performance for the 2nd response associated with the removal of the second pump from Slough station.

## APPENDICES

| | |
|---|---|
| **A** | 2013 MODELLED BASE POSITION |
| **B** | PROPOSED OPTION |

# A 2013 MODELLED BASE POSITION

## A1 Appliance Availability

**A1a** All Days

**A1b** Weekdays

**A1c** Weekends

## A2 Base Position – Range Coverage Maps

**A2a** Range Cover Modelling of 1st Appliance

**A2b** Range Cover Modelling of 2nd Appliance

Off the Run Analysis (Retained Crews Only)

**Station by Hour Summary**

2012/13

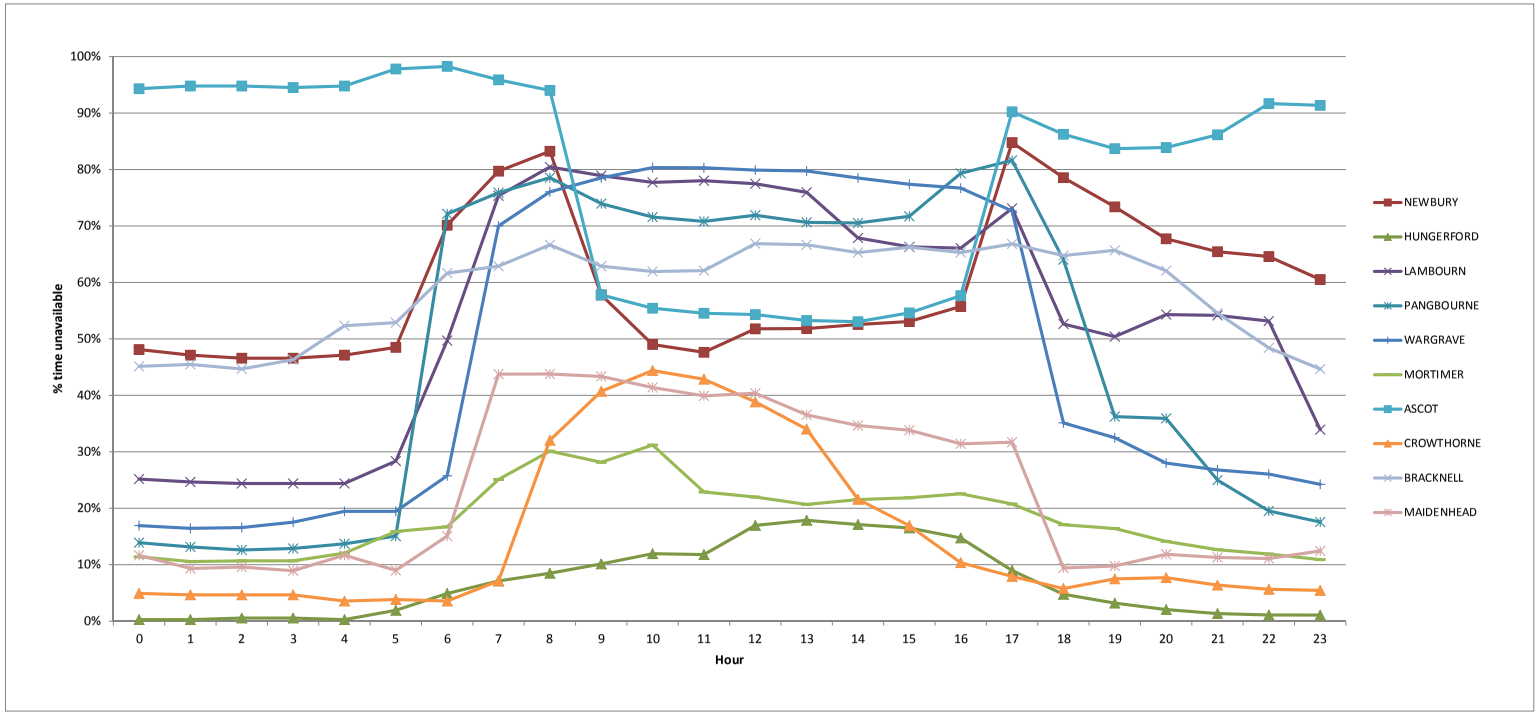
**Proportion of Hours Unavailable**

| Station | Callsign | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NEWBURY | 04 | 48% | 47% | 47% | 47% | 47% | 48% | 70% | 80% | 83% | 58% | 49% | 48% | 52% | 52% | 53% | 53% | 56% | 85% | 79% | 73% | 68% | 65% | 65% | 61% | 60% |
| HUNGERFORD | 05 | 0% | 0% | 1% | 1% | 0% | 2% | 5% | 7% | 8% | 10% | 12% | 12% | 17% | 18% | 17% | 17% | 15% | 9% | 5% | 3% | 2% | 1% | 1% | 1% | 7% |
| LAMBOURN | 06 | 25% | 25% | 24% | 24% | 24% | 28% | 50% | 75% | 80% | 79% | 78% | 78% | 77% | 76% | 68% | 66% | 66% | 73% | 53% | 50% | 54% | 54% | 53% | 34% | 55% |
| PANGBOURNE | 07 | 14% | 13% | 13% | 13% | 14% | 15% | 72% | 76% | 79% | 74% | 72% | 71% | 72% | 71% | 71% | 72% | 79% | 82% | 64% | 36% | 36% | 25% | 20% | 18% | 49% |
| WARGRAVE | 09 | 17% | 16% | 17% | 18% | 19% | 19% | 26% | 70% | 76% | 79% | 80% | 80% | 80% | 80% | 78% | 77% | 77% | 73% | 35% | 32% | 28% | 27% | 26% | 24% | 48% |
| MORTIMER | 11 | 11% | 11% | 11% | 11% | 12% | 16% | 17% | 25% | 30% | 28% | 31% | 23% | 22% | 21% | 22% | 22% | 23% | 21% | 17% | 16% | 14% | 13% | 12% | 11% | 18% |
| ASCOT | 14 | 94% | 95% | 95% | 95% | 95% | 98% | 98% | 96% | 94% | 58% | 55% | 55% | 54% | 53% | 53% | 55% | 58% | 90% | 86% | 84% | 84% | 86% | 92% | 91% | 80% |
| CROWTHORNE | 15 | 5% | 5% | 5% | 5% | 4% | 4% | 4% | 7% | 32% | 41% | 44% | 43% | 39% | 34% | 22% | 17% | 10% | 8% | 6% | 7% | 8% | 6% | 6% | 5% | 15% |
| BRACKNELL | 16 | 45% | 45% | 45% | 46% | 52% | 53% | 62% | 63% | 67% | 63% | 62% | 62% | 67% | 67% | 65% | 66% | 65% | 67% | 65% | 66% | 62% | 55% | 48% | 45% | 58% |
| MAIDENHEAD | 19 | 12% | 9% | 10% | 9% | 12% | 9% | 15% | 44% | 44% | 43% | 41% | 40% | 40% | 37% | 35% | 34% | 31% | 32% | 9% | 10% | 12% | 11% | 11% | 12% | 23% |
| All Retained Stations | | 23% | 22% | 22% | 22% | 23% | 24% | 35% | 45% | 49% | 44% | 44% | 43% | 43% | 42% | 40% | 40% | 40% | 45% | 35% | 32% | 31% | 29% | 28% | 25% | 34% |

**Notes**

1. 365 day sample

**Colour Key:** 0 to 20 % | 20 to 40% | 40 - 60% | > 60%




A1a

Off the Run Analysis (Retained Crews Only)

**Station by Hour Summary - Weekdays**

2012/13

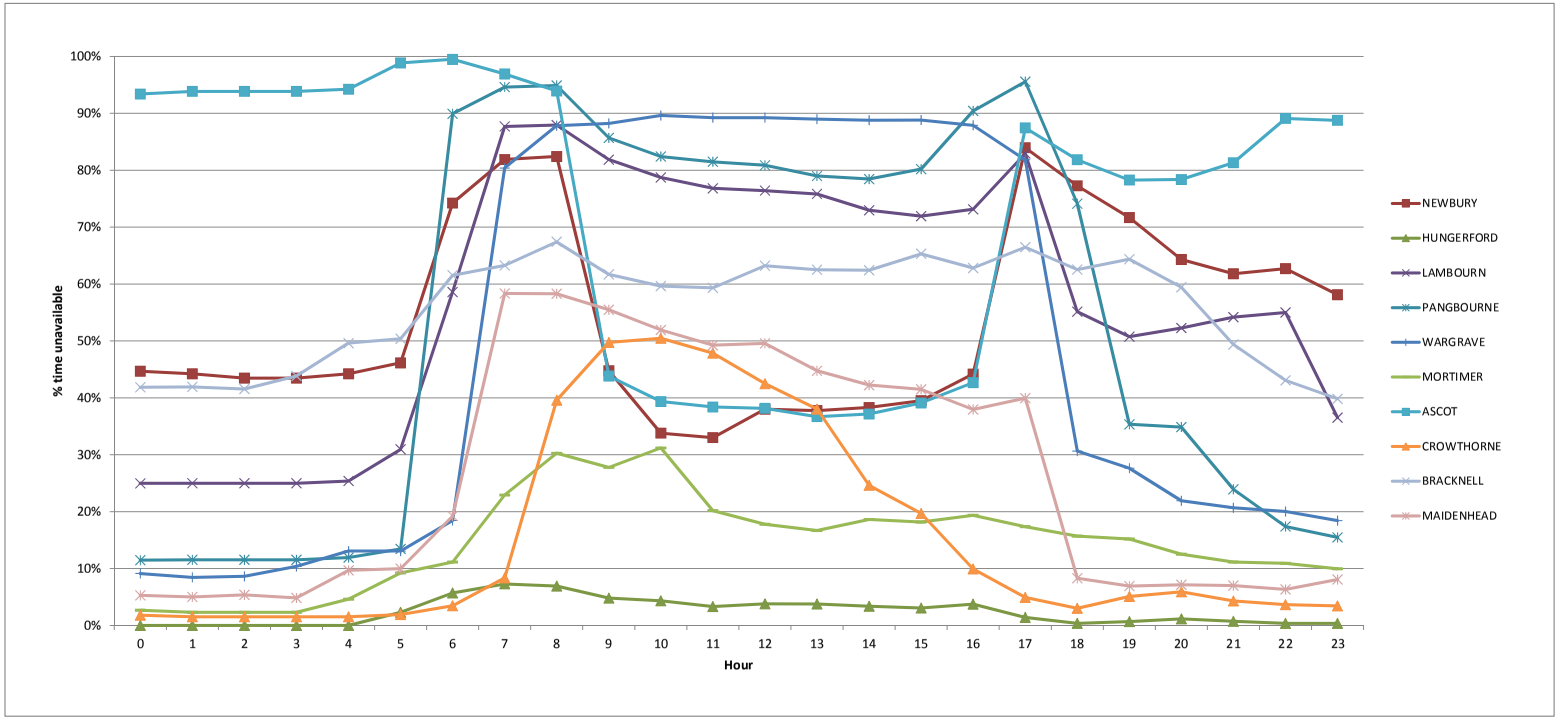
**Proportion of Hours Unavailable**

| Station | Callsign | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NEWBURY | 04 | 45% | 44% | 43% | 43% | 44% | 46% | 74% | 82% | 82% | 45% | 34% | 33% | 38% | 38% | 38% | 40% | 44% | 84% | 77% | 72% | 64% | 62% | 63% | 58% | 54% |
| HUNGERFORD | 05 | 0% | 0% | 0% | 0% | 0% | 2% | 6% | 7% | 7% | 5% | 4% | 3% | 4% | 4% | 3% | 3% | 4% | 1% | 0% | 1% | 1% | 1% | 0% | 0% | 2% |
| LAMBOURN | 06 | 25% | 25% | 25% | 25% | 25% | 31% | 59% | 88% | 88% | 82% | 79% | 77% | 76% | 76% | 73% | 72% | 73% | 83% | 55% | 51% | 52% | 54% | 55% | 37% | 58% |
| PANGBOURNE | 07 | 11% | 12% | 12% | 12% | 12% | 13% | 90% | 95% | 95% | 86% | 82% | 81% | 81% | 79% | 78% | 80% | 90% | 96% | 74% | 35% | 35% | 24% | 17% | 15% | 54% |
| WARGRAVE | 09 | 9% | 8% | 9% | 10% | 13% | 13% | 18% | 80% | 88% | 88% | 90% | 89% | 89% | 89% | 89% | 89% | 88% | 82% | 31% | 28% | 22% | 21% | 20% | 18% | 49% |
| MORTIMER | 11 | 3% | 2% | 2% | 2% | 5% | 9% | 11% | 23% | 30% | 28% | 31% | 20% | 18% | 17% | 19% | 18% | 19% | 17% | 16% | 15% | 13% | 11% | 11% | 10% | 15% |
| ASCOT | 14 | 93% | 94% | 94% | 94% | 94% | 99% | 99% | 97% | 94% | 44% | 39% | 38% | 38% | 37% | 37% | 39% | 43% | 87% | 82% | 78% | 78% | 81% | 89% | 89% | 73% |
| CROWTHORNE | 15 | 2% | 2% | 2% | 2% | 2% | 2% | 3% | 8% | 40% | 50% | 50% | 48% | 43% | 38% | 25% | 20% | 10% | 5% | 3% | 5% | 6% | 4% | 4% | 3% | 16% |
| BRACKNELL | 16 | 42% | 42% | 42% | 44% | 50% | 50% | 62% | 63% | 67% | 62% | 60% | 59% | 63% | 63% | 62% | 65% | 63% | 66% | 63% | 64% | 59% | 49% | 43% | 40% | 56% |
| MAIDENHEAD | 19 | 5% | 5% | 5% | 5% | 10% | 10% | 19% | 58% | 58% | 55% | 52% | 49% | 50% | 45% | 42% | 42% | 38% | 40% | 8% | 7% | 7% | 7% | 6% | 8% | 26% |
| All Retained Stations | | 20% | 19% | 19% | 20% | 21% | 23% | 37% | 50% | 54% | 45% | 43% | 42% | 42% | 40% | 39% | 39% | 39% | 47% | 34% | 30% | 28% | 26% | 26% | 23% | 34% |

**Notes**

1. 365 day sample (260 weekdays)

**Colour Key:** 0 to 20 % | 20 to 40% | 40 - 60% | > 60%




A1b

Off the Run Analysis (Retained Crews Only)

**Station by Hour Summary - Weekends**

2012/13

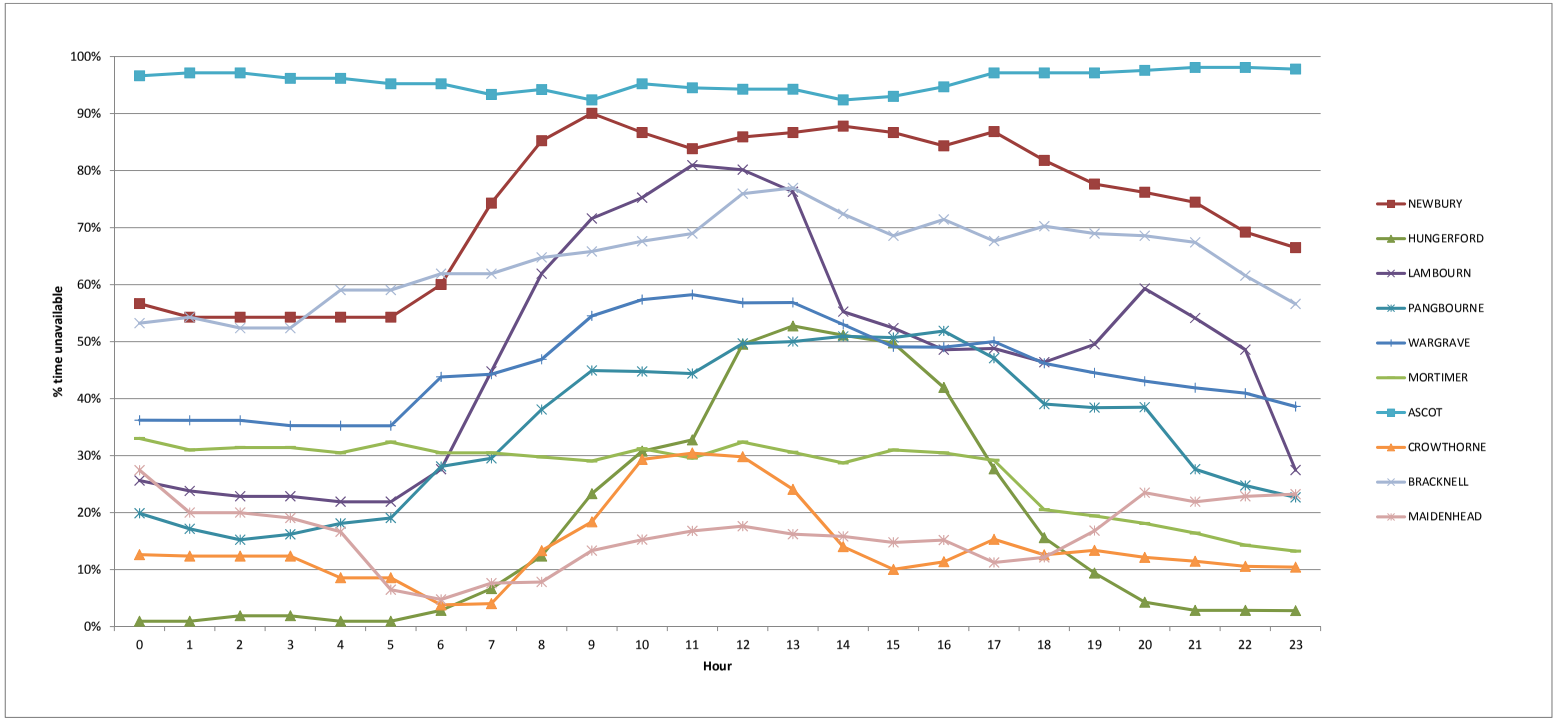
**Proportion of Hours Unavailable**

| Station | Callsign | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NEWBURY | 04 | 57% | 54% | 54% | 54% | 54% | 54% | 60% | 74% | 85% | 90% | 87% | 84% | 86% | 87% | 88% | 87% | 84% | 87% | 82% | 78% | 76% | 74% | 69% | 66% | 74% |
| HUNGERFORD | 05 | 1% | 1% | 2% | 2% | 1% | 1% | 3% | 7% | 12% | 23% | 31% | 33% | 50% | 53% | 51% | 50% | 42% | 28% | 16% | 9% | 4% | 3% | 3% | 3% | 18% |
| LAMBOURN | 06 | 26% | 24% | 23% | 23% | 22% | 22% | 28% | 45% | 62% | 72% | 75% | 81% | 80% | 76% | 55% | 52% | 49% | 49% | 46% | 50% | 59% | 54% | 49% | 27% | 48% |
| PANGBOURNE | 07 | 20% | 17% | 15% | 16% | 18% | 19% | 28% | 30% | 38% | 45% | 45% | 44% | 50% | 50% | 51% | 51% | 52% | 47% | 39% | 38% | 38% | 28% | 25% | 23% | 34% |
| WARGRAVE | 09 | 36% | 36% | 36% | 35% | 35% | 35% | 44% | 44% | 47% | 54% | 57% | 58% | 57% | 57% | 53% | 49% | 49% | 50% | 46% | 45% | 43% | 42% | 41% | 39% | 45% |
| MORTIMER | 11 | 33% | 31% | 31% | 31% | 30% | 32% | 30% | 30% | 30% | 29% | 31% | 30% | 32% | 31% | 29% | 31% | 30% | 29% | 21% | 19% | 18% | 16% | 14% | 13% | 27% |
| ASCOT | 14 | 97% | 97% | 97% | 96% | 96% | 95% | 95% | 93% | 94% | 92% | 95% | 95% | 94% | 94% | 92% | 93% | 95% | 97% | 97% | 97% | 98% | 98% | 98% | 98% | 96% |
| CROWTHORNE | 15 | 13% | 12% | 12% | 12% | 9% | 9% | 4% | 4% | 13% | 18% | 29% | 30% | 30% | 24% | 14% | 10% | 11% | 15% | 13% | 13% | 12% | 11% | 11% | 10% | 14% |
| BRACKNELL | 16 | 53% | 54% | 52% | 52% | 59% | 59% | 62% | 62% | 65% | 66% | 68% | 69% | 76% | 77% | 72% | 69% | 71% | 68% | 70% | 69% | 69% | 67% | 62% | 57% | 64% |
| MAIDENHEAD | 19 | 27% | 20% | 20% | 19% | 17% | 6% | 5% | 8% | 8% | 13% | 15% | 17% | 18% | 16% | 16% | 15% | 15% | 11% | 12% | 17% | 23% | 22% | 23% | 23% | 16% |
| All Retained Stations | | 30% | 29% | 29% | 28% | 28% | 28% | 30% | 33% | 38% | 42% | 44% | 45% | 48% | 47% | 43% | 42% | 42% | 40% | 37% | 36% | 37% | 35% | 33% | 30% | 36% |

**Notes**

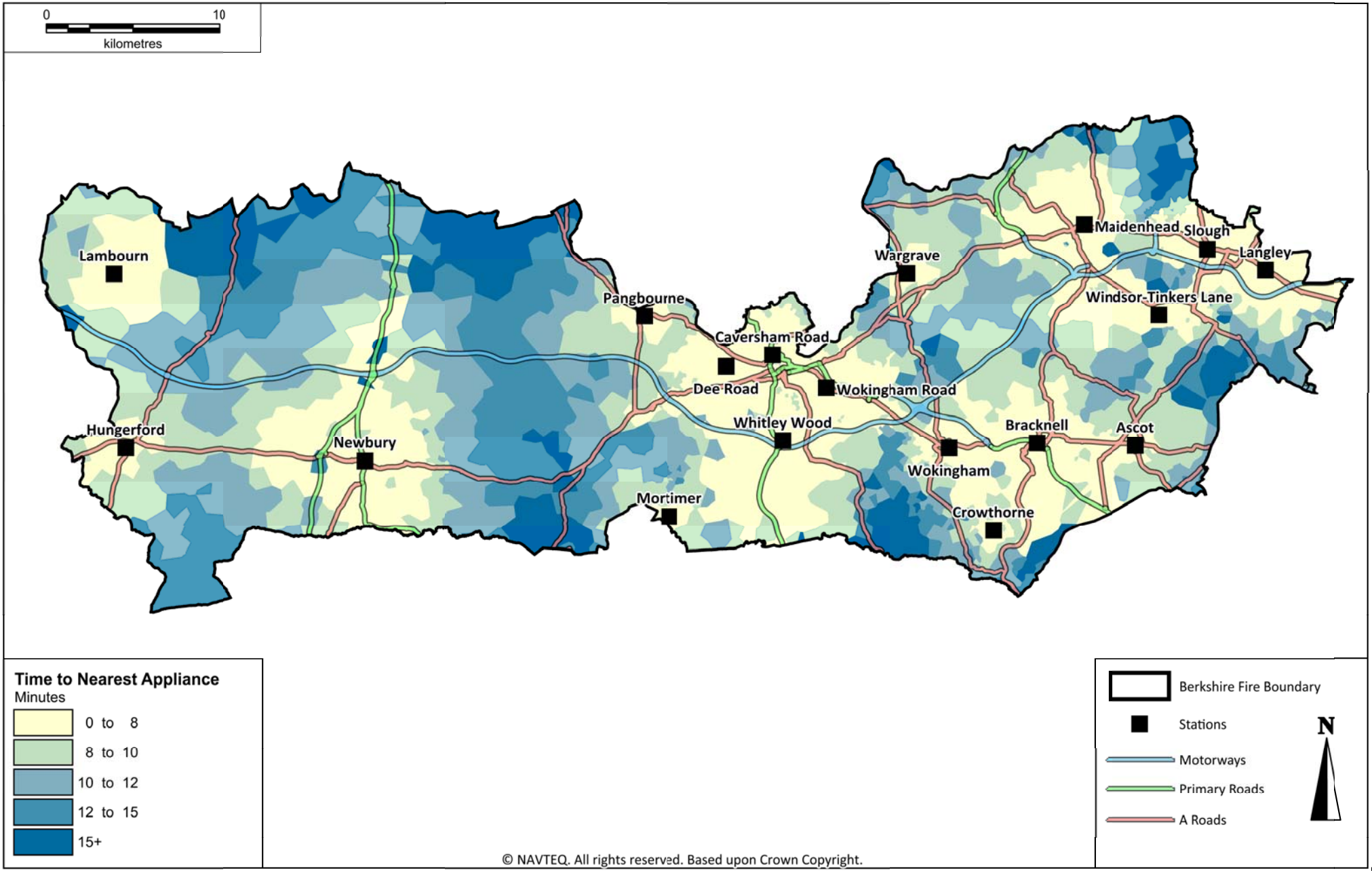
1. 365 day sample (105 weekend days)

**Colour Key:** 0 to 20 % | 20 to 40% | 40 - 60% | > 60%




A1c

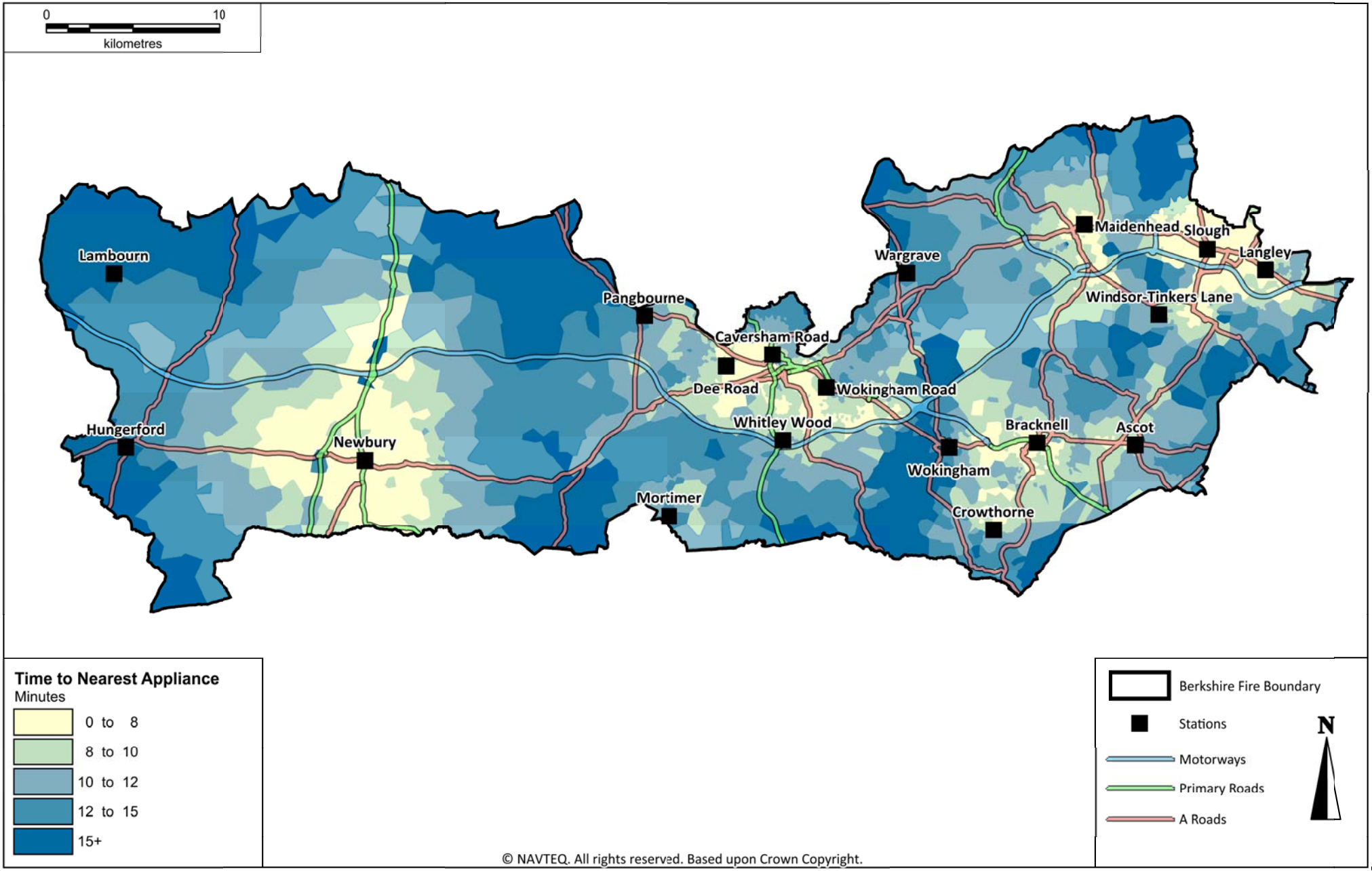
# Range Cover of the Base Position for 1st Appliance Attendance Times






A2a

# Range Cover of the Base Position for 2nd Appliance Attendance Times






A2b

## B PROPOSED OPTION

### B1 Summary of the RBFRS Response Standards

### B2 Response Distributions by Incident & Response Type – Tables

### B3 Response Distributions by Incident & Response Type – Graphs

### B4 Average Attendance Times by Station Ground

### B5 Modelled Workload by Station Ground

### B6 Proposed Option – Range Coverage Maps

**B6a** Range Cover Modelling of 1st Appliance

**B6b** Range Cover Modelling of 2nd Appliance

RBFRS - Station Configuration Modelling

**Proposed Option - Changes at Ascot, Bracknell and Slough**

Response Standards Performance Against Modelled Base; 24-Hour Model - Service-wide

| Response Standards | | | *Current Crewing* | 2013 Modelled Base | Modelling Option | Difference |
|---|---|---|---|---|---|---|
| Dwelling Fires | 1st Response | in 8 minutes | *74.7%* | 75.4% | 75.6% | 0.2% |
| | | in 10 minutes | *86.4%* | 87.2% | 87.6% | 0.5% |
| | 2nd Response | in 10 minutes | *64.0%* | 69.8% | 67.4% | -2.4% |
| | | in 12 minutes | *79.5%* | 85.4% | 85.2% | -0.2% |
| RTCs | 1st Response | in 11 minutes | *81.9%* | 83.0% | 83.7% | 0.7% |

**Notes:**

2013 Modelled Base: Newbury = 2 WDS; Windsor at Tinkers Lane

Difference = Modelling Option - 2013 Modelled Base

RBFRS - Station Configuration Modelling

**Proposed Option - Changes at Ascot, Bracknell and Slough**

Response Distribution; 24-Hour Model - Service-wide

***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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2013 Modelled Base | 0.1% | 2.4% | 8.2% | 18.7% | 34.4% | 51.3% | 65.6% | **75.4%** | 82.1% | **87.2%** | 91.4% | 94.2% | 96.3% | 97.5% | 98.4% | 99.0% | 99.3% | 99.6% | 99.7% | 99.8% |
| Modelling Option | 0.1% | 2.3% | 8.1% | 18.7% | 34.3% | 51.1% | 65.2% | **75.6%** | 82.6% | **87.6%** | 91.6% | 94.1% | 96.1% | 97.4% | 98.3% | 98.9% | 99.3% | 99.5% | 99.6% | 99.8% |
| Difference | 0.0% | -0.1% | 0.0% | 0.0% | -0.1% | -0.2% | -0.4% | **0.2%** | 0.5% | **0.5%** | 0.2% | -0.1% | -0.2% | -0.1% | -0.1% | -0.1% | -0.1% | -0.1% | -0.1% | -0.1% |

***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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2013 Modelled Base | 0.0% | 0.4% | 2.1% | 5.1% | 11.2% | 21.1% | 33.7% | 46.7% | 58.6% | **69.8%** | 78.9% | **85.4%** | 90.1% | 93.3% | 95.5% | 96.8% | 97.8% | 98.6% | 99.0% | 99.4% |
| Modelling Option | 0.0% | 0.2% | 1.1% | 2.5% | 6.5% | 14.8% | 26.0% | 39.2% | 53.6% | **67.4%** | 78.0% | **85.2%** | 89.8% | 92.8% | 95.2% | 96.6% | 97.7% | 98.4% | 98.9% | 99.3% |
| Difference | 0.0% | -0.2% | -1.1% | -2.6% | -4.6% | -6.3% | -7.7% | -7.6% | -4.9% | **-2.4%** | -0.8% | **-0.2%** | -0.3% | -0.5% | -0.3% | -0.2% | -0.1% | -0.1% | -0.1% | 0.0% |

***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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2013 Modelled Base | 0.2% | 3.5% | 11.2% | 20.8% | 31.5% | 42.8% | 54.0% | 63.6% | 71.3% | 77.8% | **83.0%** | 87.4% | 91.0% | 93.4% | 95.4% | 96.6% | 97.4% | 98.2% | 98.7% | 99.0% |
| Modelling Option | 0.2% | 3.2% | 10.3% | 19.8% | 31.0% | 42.6% | 54.0% | 63.8% | 71.8% | 78.4% | **83.7%** | 87.9% | 91.2% | 93.5% | 95.4% | 96.5% | 97.4% | 98.2% | 98.6% | 99.0% |
| Difference | 0.0% | -0.3% | -0.9% | -1.0% | -0.5% | -0.1% | 0.0% | 0.2% | 0.6% | 0.7% | **0.7%** | 0.5% | 0.2% | 0.0% | 0.0% | -0.1% | -0.1% | 0.0% | 0.0% | 0.0% |

**Notes:**

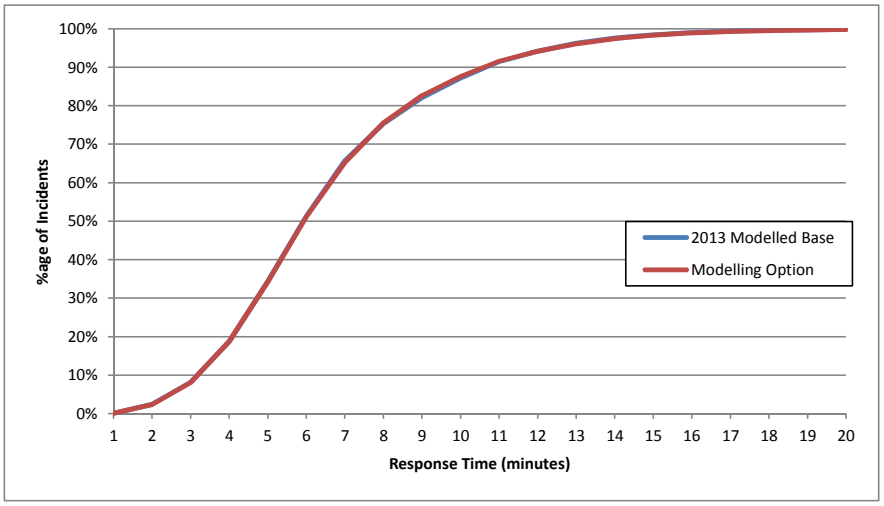
2013 Modelled Base: Newbury = 2 WDS; Windsor at Tinkers Lane

RBFRS - Station Configuration Modelling

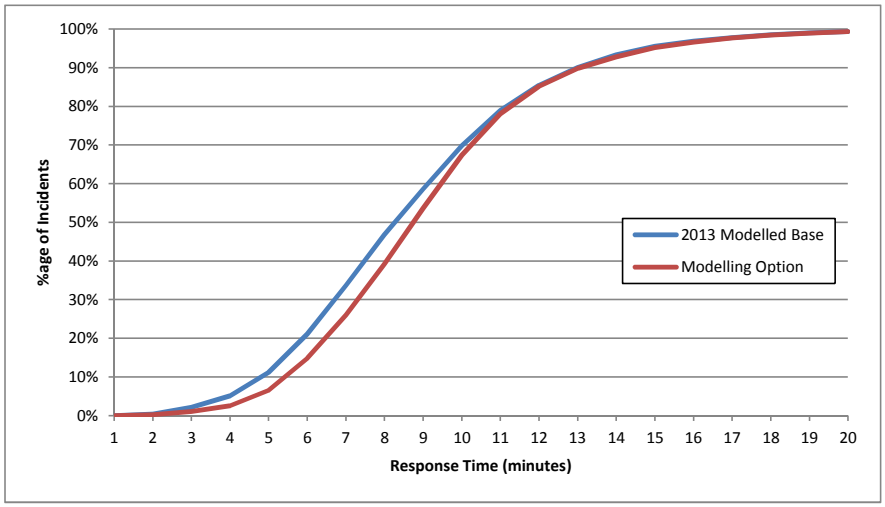
**Proposed Option - Changes at Ascot, Bracknell and Slough**

Response Distribution; 24-Hour Model - Service-wide

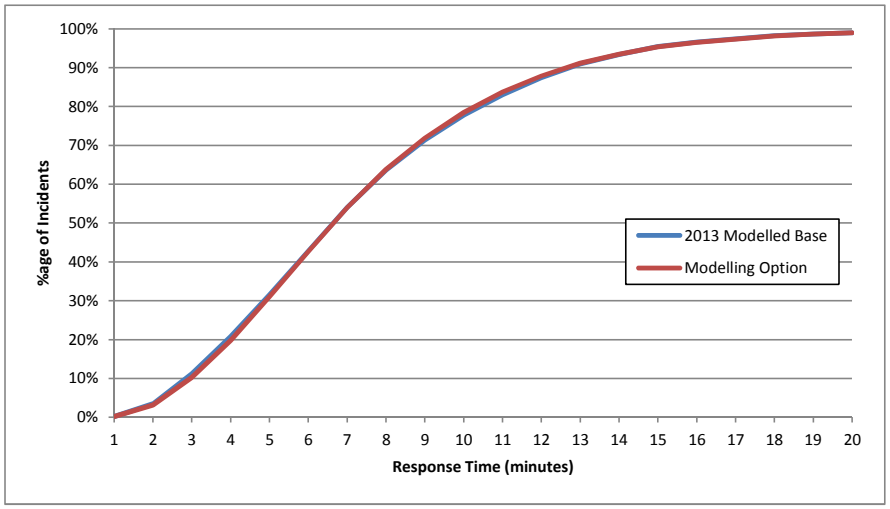
**1st Response to Dwelling Fires**




**2nd Response to Dwelling Fires**




**1st Response to RTCs**



RBFRS - Station Configuration Modelling

**Proposed Option - Changes at Ascot, Bracknell and Slough**

Average Response Times Compared to Validated Position; 24-Hour Averages

| Area | 2013 Modelled Base | | Modelling Option | | Difference | |
|---|---|---|---|---|---|---|
| | Avg 1st | Avg 2nd | Avg 1st | Avg 2nd | Avg 1st | Avg 2nd |
| RBFRS | 07:01 | 09:00 | 06:57 | 09:19 | -00:05 | 00:18 |
| Ascot | 10:24 | 12:08 | 05:18 | 09:30 | -05:06 | -02:38 |
| Bracknell | 06:06 | 09:38 | 05:58 | 09:17 | -00:08 | -00:21 |
| Caversham Road | 05:29 | 07:56 | 05:29 | 07:56 | 00:00 | 00:00 |
| Crowthorne | 09:08 | 10:30 | 09:07 | 10:28 | -00:01 | -00:02 |
| Dee Road | 06:10 | 08:06 | 06:10 | 08:06 | 00:00 | 00:00 |
| Hungerford | 09:14 | 13:22 | 09:14 | 13:22 | 00:00 | 00:00 |
| Lambourn | 14:29 | 16:37 | 14:29 | 16:37 | 00:00 | 00:00 |
| Langley | 06:45 | 08:12 | 07:00 | 08:42 | 00:14 | 00:30 |
| Maidenhead | 06:19 | 08:52 | 06:22 | 08:56 | 00:03 | 00:05 |
| Mortimer | 11:25 | 13:54 | 11:25 | 13:54 | 00:00 | 00:00 |
| Newbury | 06:57 | 08:04 | 06:57 | 08:04 | 00:00 | 00:00 |
| Pangbourne | 11:54 | 13:29 | 11:54 | 13:29 | 00:00 | 00:00 |
| Slough | 05:54 | 06:14 | 06:26 | 08:45 | 00:32 | 02:31 |
| Wargrave | 11:42 | 13:21 | 11:42 | 13:21 | 00:00 | 00:00 |
| Whitley Wood | 06:47 | 08:59 | 06:47 | 08:58 | 00:00 | 00:00 |
| Windsor | 07:53 | 09:31 | 08:08 | 09:53 | 00:14 | 00:22 |
| Wokingham | 08:45 | 13:25 | 08:44 | 13:24 | -00:01 | -00:01 |
| Wokingham Road | 06:19 | 08:13 | 06:19 | 08:14 | 00:00 | 00:00 |

**Notes:**

2013 Modelled Base: Newbury = 2 WDS; Windsor at Tinkers Lane

Average response times are to all incidents

RBFRS - Station Configuration Modelling

**Proposed Option - Changes at Ascot, Bracknell and Slough**

Annual Station Workload Compared to Validated Position; 24-Hour Averages

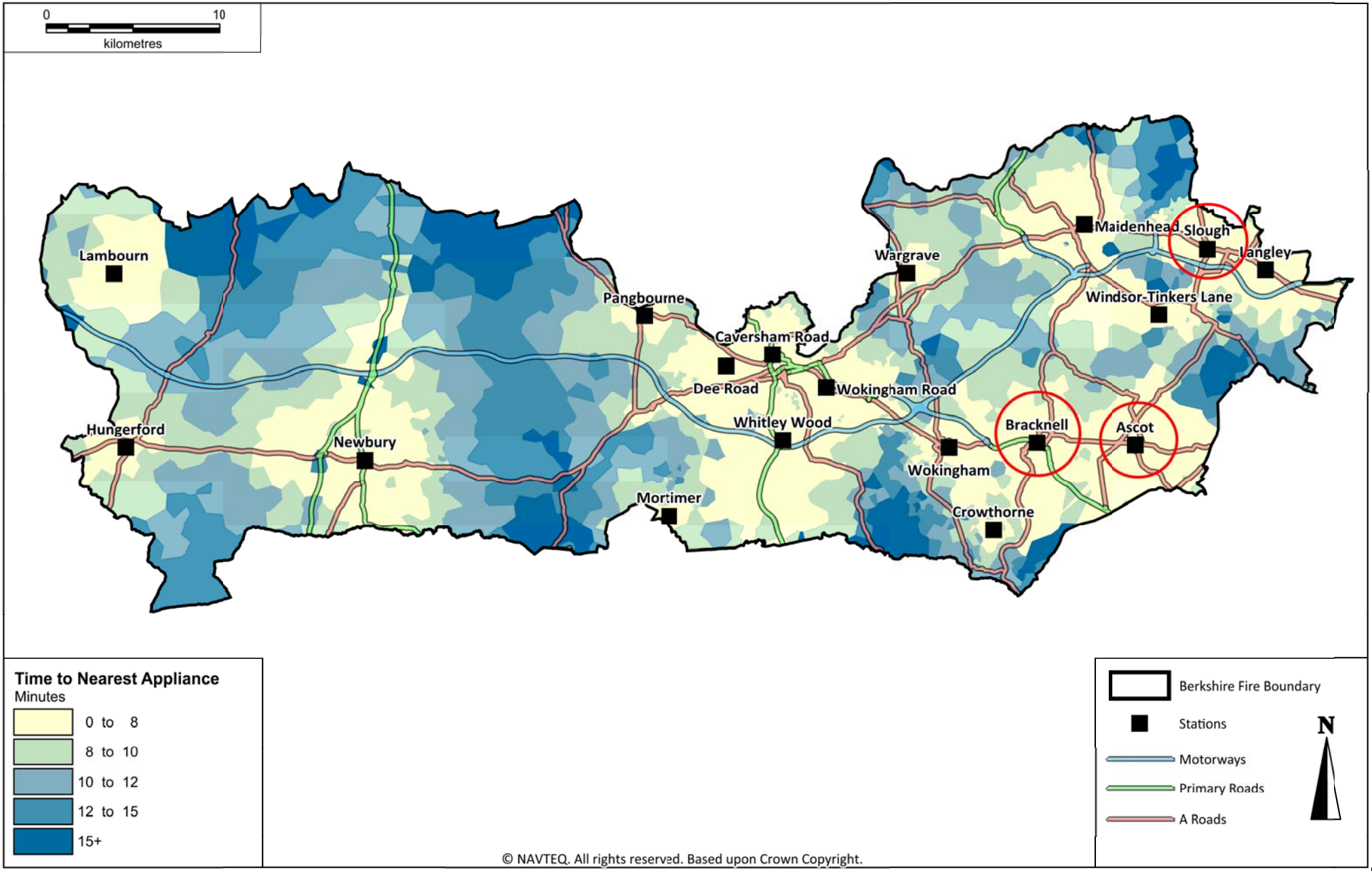
| Station | 2013 Modelled Base | Modelling Option | Difference |
|---|---|---|---|
| Caversham Road | 1011 | 1011 | 0 |
| Wokingham Road | 747 | 745 | -2 |
| Dee Road | 679 | 679 | 0 |
| Newbury | 874 | 874 | 0 |
| Hungerford | 138 | 138 | 0 |
| Lambourn | 22 | 22 | 0 |
| Pangbourne | 50 | 50 | 0 |
| Wargrave | 39 | 40 | 1 |
| Wokingham | 454 | 441 | -13 |
| Mortimer | 116 | 116 | 0 |
| Windsor (Tinkers Lane) | 292 | 364 | 72 |
| Ascot | 54 | 343 | 289 |
| Crowthorne | 127 | 123 | -4 |
| Bracknell | 995 | 787 | -208 |
| Slough | 1679 | 1280 | -399 |
| Langley | 470 | 639 | 169 |
| Maidenhead | 764 | 858 | 94 |
| Whitley Wood | 638 | 637 | -1 |

**Notes:**

2013 Modelled Base: Newbury = 2 WDS; Windsor at Tinkers Lane

Workload = Modelled annual number of responses by station

# Range Cover of the Proposed Option for 1st Appliance Attendance Times



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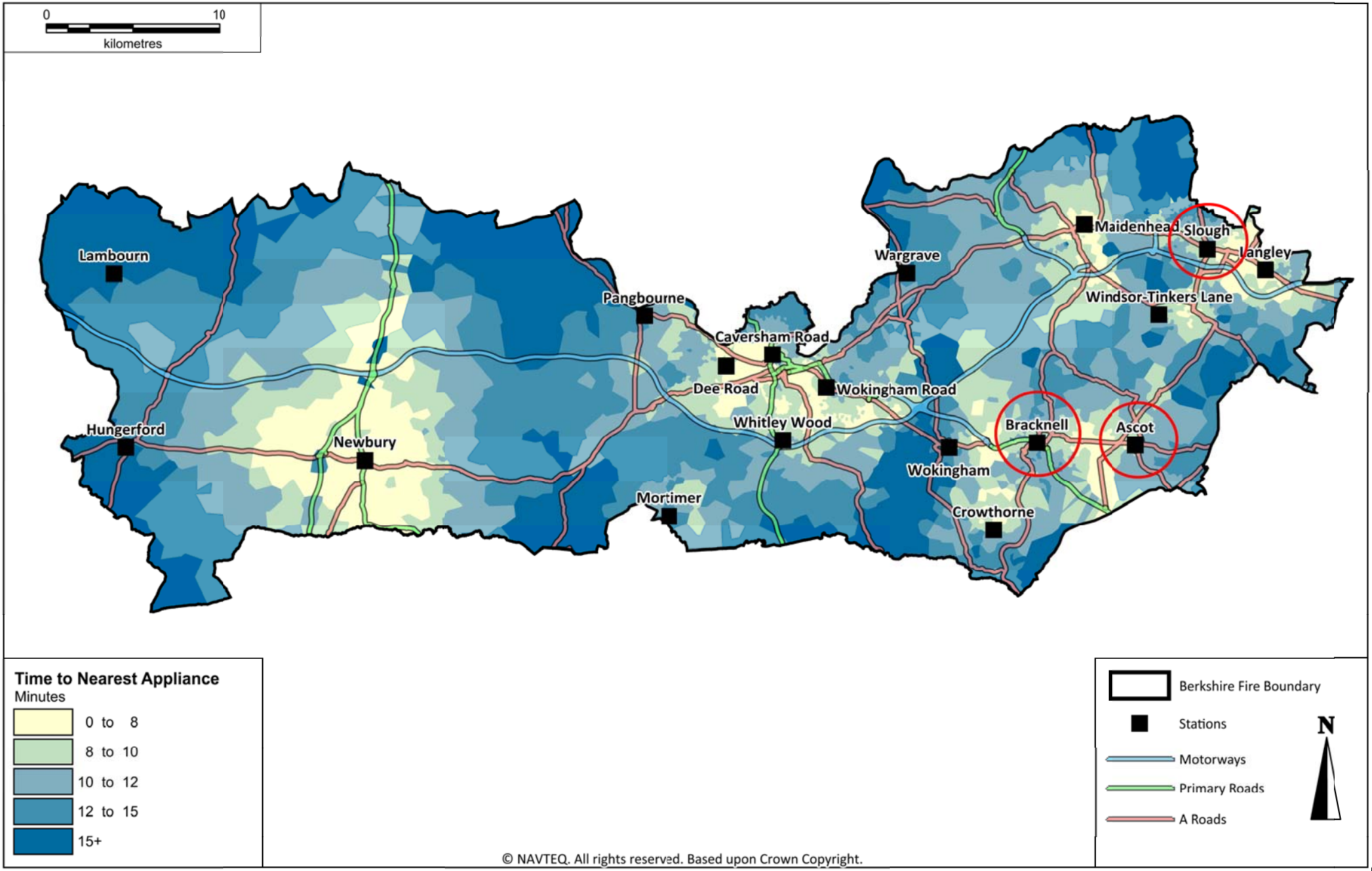
# Range Cover of the Proposed Option for 2nd Appliance Attendance Times



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