

Freedom of Information request reference number: 6933.1

Date of response: 26/10/2022

Request:

On 25 June 2021 the London Borough of Havering (LBH) was affected by a substantial flood event. As part of their responsibilities as a Lead Local Flood Authority, LBH have commissioned a Flood Investigations report. In order to best inform the report, certain data is required. A list of required data to support the investigations is as follows:

- 1. Any time-based monitoring data of flow/level/activity that may be relevant (e.g. sewer monitoring, pumping station duty/assist telemetry records etc.);*
- 2. Flooding records for the 25 June event;*
- 3. Any other views on the event and;*
- 4. An overview of LFB's response during the flood event as Flood Risk Management Authority (in timeline format if possible).*

Please provide any of the above data within the attached boundary or within associated upstream contributing catchments.

Response:

LFB do not collect any information around water levels, water flow or any other activity in an area prior to our attendance.

Please see the table below which contains all flood records for the London Borough of Havering on 25 June 2021:

| Incident Number | Date | Time of Call | Incident Type | Ward | Postal District | Post Code |
|------------------------|-------------|---------------------|------------------------|-------------|------------------------|------------------|
| 078730-25062021 | 25/06/2021 | 19:41:50 | Flooding - Pumping Out | Mawneys | RM5 | RM5 3ED |

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|-----------------|------------|----------|------------------------|------------------------|------|----------|
| 078730-25062021 | 25/06/2021 | 19:41:50 | Flooding - Pumping Out | Mawneys | RM5 | RM5 3ED |
| 078732-25062021 | 25/06/2021 | 19:42:27 | Flooding - Make Safe | Havering-atte-Bower | RM5 | RM5 3RH |
| 078737-25062021 | 25/06/2021 | 19:47:57 | Flooding - Pumping Out | Mawneys | RM7 | RM7 8NP |
| 078741-25062021 | 25/06/2021 | 19:52:33 | Flooding - Pumping Out | Mawneys | RM7 | RM7 8NH |
| 078759-25062021 | 25/06/2021 | 20:08:20 | Flooding - Advice Only | Marshalls & Rise Park | RM1 | RM1 4ND |
| 078760-25062021 | 25/06/2021 | 20:08:44 | Flooding - Make Safe | Havering-atte-Bower | RM5 | RM5 3XR |
| 078762-25062021 | 25/06/2021 | 20:09:22 | Flooding - Advice Only | Hylands & Harrow Lodge | RM12 | RM12 4TG |
| 078764-25062021 | 25/06/2021 | 20:10:03 | Flooding - Make Safe | Mawneys | RM5 | RM5 3PR |
| 078766-25062021 | 25/06/2021 | 20:10:10 | Flooding - Make Safe | St. Edward's | RM1 | RM1 3LP |
| 078767-25062021 | 25/06/2021 | 20:10:31 | Flooding - Advice Only | Squirrel's Heath | RM2 | RM2 6QU |
| 078770-25062021 | 25/06/2021 | 20:11:05 | Flooding - Make Safe | Havering-atte-Bower | RM5 | RM5 2EJ |
| 078774-25062021 | 25/06/2021 | 20:11:55 | Flooding - Make Safe | Marshalls & Rise Park | RM1 | RM1 4TG |
| 078776-25062021 | 25/06/2021 | 20:12:28 | Flooding - Pumping Out | Gooshays | RM3 | RM3 7SS |
| 078780-25062021 | 25/06/2021 | 20:14:05 | Flooding - Make Safe | St. Edward's | RM2 | RM2 5BD |
| 078782-25062021 | 25/06/2021 | 20:14:37 | Flooding - Advice Only | Harold Wood | RM3 | RM3 0YT |
| 078784-25062021 | 25/06/2021 | 20:16:39 | Flooding - Advice Only | Squirrel's Heath | RM2 | RM2 5HA |
| 078785-25062021 | 25/06/2021 | 20:16:48 | Flooding - Advice Only | Gooshays | RM3 | RM3 9NT |
| 078787-25062021 | 25/06/2021 | 20:17:06 | Flooding - Advice Only | Marshalls & Rise Park | RM1 | RM1 4NR |
| 078788-25062021 | 25/06/2021 | 20:17:20 | Flooding - Advice Only | Squirrel's Heath | RM2 | RM2 6ED |

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| 078791-25062021 | 25/06/2021 | 20:18:07 | Flooding - Advice Only | Harold Wood | RM3 | RM3 0QB |
| 078793-25062021 | 25/06/2021 | 20:19:02 | Flooding - Stand By - No Action | Squirrel's Heath | RM2 | RM2 6HU |
| 078796-25062021 | 25/06/2021 | 20:20:24 | Flooding - Stand By - No Action | Gooshays | RM3 | RM3 8DJ |
| 078797-25062021 | 25/06/2021 | 20:20:25 | Flooding - Stand By - No Action | Gooshays | RM3 | RM3 9LX |
| 078800-25062021 | 25/06/2021 | 20:21:00 | Flooding - Stand By - No Action | St. Edward's | RM2 | RM2 5AR |
| 078802-25062021 | 25/06/2021 | 20:21:24 | Flooding - Advice Only | Gooshays | RM3 | RM3 8HR |
| 078804-25062021 | 25/06/2021 | 20:22:06 | Flooding - Stand By - No Action | Havering-atte-Bower | RM5 | RM5 3XS |
| 078808-25062021 | 25/06/2021 | 20:22:58 | Flooding - Make Safe | Mawneys | RM5 | RM5 3ES |
| 078812-25062021 | 25/06/2021 | 20:23:39 | Flooding - Advice Only | Harold Wood | RM3 | RM3 0ZA |
| 078816-25062021 | 25/06/2021 | 20:25:17 | Flooding - Stand By - No Action | Marshalls & Rise Park | RM2 | RM2 5RJ |
| 078819-25062021 | 25/06/2021 | 20:26:30 | Flooding - Advice Only | Heaton | RM3 | RM3 7AX |
| 078821-25062021 | 25/06/2021 | 20:26:34 | Flooding - Advice Only | Heaton | RM3 | RM3 7HL |
| 078825-25062021 | 25/06/2021 | 20:27:22 | Flooding - Advice Only | Gooshays | RM3 | RM3 9HT |
| 078826-25062021 | 25/06/2021 | 20:27:33 | Flooding - Advice Only | Heaton | RM3 | RM3 8JY |
| 078830-25062021 | 25/06/2021 | 20:30:30 | Flooding - Advice Only | Harold Wood | RM3 | RM3 9LR |
| 078832-25062021 | 25/06/2021 | 20:31:27 | Flooding - Advice Only | Squirrel's Heath | RM2 | RM2 6NP |
| 078833-25062021 | 25/06/2021 | 20:31:39 | Flooding - Advice Only | Gooshays | RM3 | RM3 9NT |
| 078836-25062021 | 25/06/2021 | 20:32:34 | Flooding - Advice Only | Heaton | RM3 | RM3 8PH |
| 078837-25062021 | 25/06/2021 | 20:32:36 | Flooding - Advice Only | Heaton | RM3 | RM3 7PL |

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|-----------------|------------|----------|---------------------------------|------------------------|------|----------|
| 078839-25062021 | 25/06/2021 | 20:33:14 | Flooding - Advice Only | Heaton | RM3 | RM3 7PA |
| 078840-25062021 | 25/06/2021 | 20:33:29 | Flooding - Advice Only | Marshalls & Rise Park | RM2 | RM2 5RJ |
| 078841-25062021 | 25/06/2021 | 20:33:41 | Flooding - Advice Only | Squirrel's Heath | RM11 | RM11 2EP |
| 078844-25062021 | 25/06/2021 | 20:34:00 | Flooding - Advice Only | Harold Wood | RM3 | RM3 0ZA |
| 078848-25062021 | 25/06/2021 | 20:35:36 | Flooding - Make Safe | Marshalls & Rise Park | RM2 | RM2 6NJ |
| 078852-25062021 | 25/06/2021 | 20:36:14 | Flooding - Advice Only | Heaton | RM3 | RM3 8JX |
| 078854-25062021 | 25/06/2021 | 20:37:11 | Flooding - Advice Only | St. Alban's | RM1 | RM1 2PT |
| 078855-25062021 | 25/06/2021 | 20:37:13 | Flooding - Make Safe | Marshalls & Rise Park | RM1 | RM1 4NU |
| 078856-25062021 | 25/06/2021 | 20:37:29 | Flooding - Advice Only | Squirrel's Heath | RM11 | RM11 2AB |
| 078857-25062021 | 25/06/2021 | 20:37:37 | Flooding - Make Safe | Heaton | RM3 | RM3 8XH |
| 078861-25062021 | 25/06/2021 | 20:38:34 | Flooding - Make Safe | Rush Green & Crowlands | RM7 | RM7 0PX |
| 078864-25062021 | 25/06/2021 | 20:39:13 | Flooding - Advice Only | Harold Wood | RM3 | RM3 0YU |
| 078867-25062021 | 25/06/2021 | 20:39:44 | Flooding - Pumping Out | St. Edward's | RM1 | RM1 3LP |
| 078871-25062021 | 25/06/2021 | 20:40:14 | Flooding - Pumping Out | St. Edward's | RM1 | RM1 1EG |
| 078872-25062021 | 25/06/2021 | 20:40:18 | Flooding - Make Safe | St. Edward's | RM1 | RM1 3AP |
| 078874-25062021 | 25/06/2021 | 20:40:45 | Flooding - Make Safe | Marshalls & Rise Park | RM1 | RM1 4NU |
| 078875-25062021 | 25/06/2021 | 20:40:53 | Flooding - Stand By - No Action | Squirrel's Heath | RM2 | RM2 5TD |
| 078879-25062021 | 25/06/2021 | 20:41:28 | Flooding - Advice Only | St. Alban's | RM1 | RM1 2JB |
| 078880-25062021 | 25/06/2021 | 20:41:33 | Flooding - Other Action | Heaton | RM3 | RM3 8FU |

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|-----------------|------------|----------|---------------------------------|------------------------|-----|---------|
| 078882-25062021 | 25/06/2021 | 20:42:19 | Flooding - Advice Only | Heaton | RM3 | RM3 7NT |
| 078883-25062021 | 25/06/2021 | 20:42:22 | Flooding - Advice Only | Gooshays | RM3 | RM3 9TD |
| 078884-25062021 | 25/06/2021 | 20:42:27 | Flooding - Advice Only | Heaton | RM3 | RM3 8JP |
| 078886-25062021 | 25/06/2021 | 20:42:44 | Flooding - Advice Only | St. Edward's | RM1 | RM1 3RL |
| 078887-25062021 | 25/06/2021 | 20:43:17 | Flooding - Advice Only | Heaton | RM3 | RM3 8HN |
| 078889-25062021 | 25/06/2021 | 20:43:54 | Flooding - Advice Only | Heaton | RM3 | RM3 7PP |
| 078893-25062021 | 25/06/2021 | 20:45:51 | Flooding - Make Safe | Marshalls & Rise Park | RM1 | RM1 4PA |
| 078897-25062021 | 25/06/2021 | 20:47:07 | Flooding - Stand By - No Action | Heaton | RM3 | RM3 8JY |
| 078898-25062021 | 25/06/2021 | 20:47:16 | Flooding - Stand By - No Action | Heaton | RM3 | RM3 8EU |
| 078900-25062021 | 25/06/2021 | 20:47:43 | Flooding - Pumping Out | Heaton | RM3 | RM3 8JX |
| 078902-25062021 | 25/06/2021 | 20:48:00 | Flooding - Advice Only | Marshalls & Rise Park | RM1 | RM1 4PA |
| 078904-25062021 | 25/06/2021 | 20:48:29 | Flooding - Pumping Out | Squirrel's Heath | RM2 | RM2 5JR |
| 078906-25062021 | 25/06/2021 | 20:48:45 | Flooding - Stand By - No Action | Heaton | RM3 | RM3 8JL |
| 078907-25062021 | 25/06/2021 | 20:48:52 | Flooding - Make Safe | Hylands & Harrow Lodge | RM1 | RM1 2BP |
| 078910-25062021 | 25/06/2021 | 20:49:46 | Flooding - Advice Only | St. Edward's | RM2 | RM2 5BD |
| 078911-25062021 | 25/06/2021 | 20:49:57 | Flooding - Advice Only | Mawneys | RM5 | RM5 3PR |
| 078912-25062021 | 25/06/2021 | 20:49:59 | Flooding - Advice Only | Marshalls & Rise Park | RM1 | RM1 4SP |
| 078913-25062021 | 25/06/2021 | 20:50:07 | Flooding - Make Safe | Marshalls & Rise Park | RM1 | RM1 4ND |
| 078914-25062021 | 25/06/2021 | 20:50:25 | Flooding - Pumping Out | Mawneys | RM7 | RM7 8NT |

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|-----------------|------------|----------|---------------------------------|------------------------|-----|---------|
| 078917-25062021 | 25/06/2021 | 20:51:22 | Flooding - Stand By - No Action | Mawneys | RM5 | RM5 3PR |
| 078918-25062021 | 25/06/2021 | 20:51:26 | Flooding - Stand By - No Action | Heaton | RM3 | RM3 8JY |
| 078919-25062021 | 25/06/2021 | 20:52:07 | Flooding - Advice Only | Heaton | RM3 | RM3 8HN |
| 078926-25062021 | 25/06/2021 | 20:55:05 | Flooding - Evacuation | Gooshays | RM3 | RM3 7PJ |
| 078929-25062021 | 25/06/2021 | 20:56:25 | Flooding - Stand By - No Action | Marshalls & Rise Park | RM1 | RM1 4TG |
| 078930-25062021 | 25/06/2021 | 20:56:26 | Flooding - Make Safe | St. Edward's | RM1 | RM1 3QX |
| 078934-25062021 | 25/06/2021 | 20:57:30 | Flooding - Make Safe | Heaton | RM3 | RM3 8JP |
| 078935-25062021 | 25/06/2021 | 20:57:59 | Flooding - Make Safe | Marshalls & Rise Park | RM2 | RM2 5RB |
| 078937-25062021 | 25/06/2021 | 20:59:20 | Flooding - Make Safe | Gooshays | RM3 | RM3 7EG |
| 078939-25062021 | 25/06/2021 | 20:59:23 | Flooding - Make Safe | Heaton | RM3 | RM3 8XT |
| 078941-25062021 | 25/06/2021 | 20:59:32 | Flooding - Make Safe | Hylands & Harrow Lodge | RM1 | RM1 2BP |
| 078944-25062021 | 25/06/2021 | 21:00:30 | Flooding - Make Safe | St. Edward's | RM2 | RM2 5AR |
| 078945-25062021 | 25/06/2021 | 21:00:36 | Flooding - Stand By - No Action | St. Edward's | RM1 | RM1 3FB |
| 078946-25062021 | 25/06/2021 | 21:00:45 | Flooding - Advice Only | Heaton | RM3 | RM3 7NT |
| 078947-25062021 | 25/06/2021 | 21:00:45 | Flooding - Advice Only | Harold Wood | RM3 | RM3 9LP |
| 078950-25062021 | 25/06/2021 | 21:02:09 | Flooding - Pumping Out | Havering-atte-Bower | RM5 | RM5 3RH |
| 078953-25062021 | 25/06/2021 | 21:03:49 | Flooding - Advice Only | Gooshays | RM3 | RM3 7PJ |
| 078954-25062021 | 25/06/2021 | 21:04:18 | Flooding - Advice Only | Gooshays | RM3 | RM3 7PJ |
| 078955-25062021 | 25/06/2021 | 21:04:25 | Flooding - Advice Only | Heaton | RM3 | RM3 8PJ |

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|-----------------|------------|----------|---------------------------------|-----------------------|-----|---------|
| 078956-25062021 | 25/06/2021 | 21:05:54 | Flooding - Stand By - No Action | Marshalls & Rise Park | RM1 | RM1 4DQ |
| 078960-25062021 | 25/06/2021 | 21:06:48 | Flooding - Advice Only | Gooshays | RM3 | RM3 7EG |
| 078964-25062021 | 25/06/2021 | 21:08:41 | Flooding - Advice Only | Gooshays | RM3 | RM3 7PJ |
| 078966-25062021 | 25/06/2021 | 21:09:07 | Flooding - Stand By - No Action | St. Edward's | RM1 | RM1 3JT |
| 078968-25062021 | 25/06/2021 | 21:10:25 | Flooding - Advice Only | Gooshays | RM3 | RM3 9RR |
| 078969-25062021 | 25/06/2021 | 21:10:34 | Flooding - Advice Only | Gooshays | RM3 | RM3 9HT |
| 078971-25062021 | 25/06/2021 | 21:11:09 | Flooding - Advice Only | Heaton | RM3 | RM3 8AA |
| 078972-25062021 | 25/06/2021 | 21:11:32 | Flooding - Pumping Out | Squirrel's Heath | RM2 | RM2 5TD |
| 078975-25062021 | 25/06/2021 | 21:12:48 | Flooding - Advice Only | Heaton | RM3 | RM3 7NT |
| 078976-25062021 | 25/06/2021 | 21:12:52 | Flooding - Advice Only | Heaton | RM3 | RM3 8LA |
| 078978-25062021 | 25/06/2021 | 21:13:55 | Flooding - Make Safe | St. Edward's | RM5 | RM5 3AA |
| 078981-25062021 | 25/06/2021 | 21:15:52 | Flooding - Advice Only | Heaton | RM3 | RM3 8ES |
| 078983-25062021 | 25/06/2021 | 21:17:38 | Flooding - Advice Only | Heaton | RM3 | RM3 7PA |
| 078986-25062021 | 25/06/2021 | 21:19:39 | Flooding - Advice Only | Heaton | RM3 | RM3 8JX |
| 078990-25062021 | 25/06/2021 | 21:20:04 | Flooding - Make Safe | Mawneys | RM7 | RM7 8NP |
| 078992-25062021 | 25/06/2021 | 21:20:58 | Flooding - Advice Only | Heaton | RM3 | RM3 7HR |
| 078994-25062021 | 25/06/2021 | 21:21:28 | Flooding - Advice Only | Gooshays | RM3 | RM3 7EG |
| 078996-25062021 | 25/06/2021 | 21:21:55 | Flooding - Advice Only | Gooshays | RM3 | RM3 7ST |
| 078997-25062021 | 25/06/2021 | 21:21:59 | Flooding - Advice Only | Gooshays | RM3 | RM3 7ST |

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|-----------------|------------|----------|---------------------------------|-----------------------|------|----------|
| 078998-25062021 | 25/06/2021 | 21:22:28 | Flooding - Make Safe | Marshalls & Rise Park | RM1 | RM1 4SP |
| 078999-25062021 | 25/06/2021 | 21:22:33 | Flooding - Advice Only | Gooshays | RM3 | RM3 7ST |
| 079000-25062021 | 25/06/2021 | 21:23:47 | Flooding - Advice Only | Heaton | RM3 | RM3 7NX |
| 079004-25062021 | 25/06/2021 | 21:25:14 | Flooding - Advice Only | Heaton | RM3 | RM3 7NT |
| 079009-25062021 | 25/06/2021 | 21:27:37 | Flooding - Stand By - No Action | St. Edward's | RM2 | RM2 5LB |
| 079014-25062021 | 25/06/2021 | 21:30:08 | Flooding - Make Safe | St. Edward's | RM1 | RM1 3FD |
| 079015-25062021 | 25/06/2021 | 21:30:18 | Flooding - Advice Only | Heaton | RM3 | RM3 7NX |
| 079017-25062021 | 25/06/2021 | 21:31:26 | Flooding - Advice Only | Gooshays | RM3 | RM3 7ST |
| 079020-25062021 | 25/06/2021 | 21:32:18 | Flooding - Advice Only | Heaton | RM3 | RM3 7NU |
| 079023-25062021 | 25/06/2021 | 21:33:49 | Flooding - Advice Only | Heaton | RM3 | RM3 7NU |
| 079024-25062021 | 25/06/2021 | 21:34:04 | Flooding - Advice Only | Heaton | RM3 | RM3 8XS |
| 079027-25062021 | 25/06/2021 | 21:36:59 | Flooding - Advice Only | Gooshays | RM3 | RM3 7ST |
| 079033-25062021 | 25/06/2021 | 21:39:13 | Flooding - Make Safe | Heaton | RM3 | RM3 7NX |
| 079036-25062021 | 25/06/2021 | 21:39:57 | Flooding - Make Safe | Squirrel's Heath | RM11 | RM11 2HN |
| 079037-25062021 | 25/06/2021 | 21:41:24 | Flooding - Make Safe | Heaton | RM3 | RM3 7PA |
| 079041-25062021 | 25/06/2021 | 21:44:27 | Flooding - Advice Only | Heaton | RM3 | RM3 8JP |
| 079042-25062021 | 25/06/2021 | 21:44:50 | Flooding - Advice Only | Squirrel's Heath | RM2 | RM2 6JN |
| 079043-25062021 | 25/06/2021 | 21:45:10 | Flooding - Pumping Out | Gooshays | RM3 | RM3 7SS |
| 079047-25062021 | 25/06/2021 | 21:46:34 | Flooding - Make Safe | Heaton | RM3 | RM3 7NX |

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|-----------------|------------|----------|-------------------------|------------------|-----|---------|
| 079050-25062021 | 25/06/2021 | 21:47:18 | Flooding - Advice Only | Gooshays | RM3 | RM3 7XR |
| 079051-25062021 | 25/06/2021 | 21:47:55 | Flooding - Advice Only | Gooshays | RM3 | RM3 7ST |
| 079053-25062021 | 25/06/2021 | 21:49:20 | Flooding - Advice Only | Gooshays | RM3 | RM3 7EQ |
| 079054-25062021 | 25/06/2021 | 21:49:22 | Flooding - Advice Only | Gooshays | RM3 | RM3 7ST |
| 079056-25062021 | 25/06/2021 | 21:55:35 | Flooding - Pumping Out | Gooshays | RM3 | RM3 7SS |
| 079057-25062021 | 25/06/2021 | 21:56:23 | Flooding - Make Safe | Gooshays | RM3 | RM3 7SS |
| 079059-25062021 | 25/06/2021 | 22:00:18 | Flooding - Make Safe | Gooshays | RM3 | RM3 7ST |
| 079062-25062021 | 25/06/2021 | 22:02:35 | Flooding - Make Safe | Heaton | RM3 | RM3 7NX |
| 079068-25062021 | 25/06/2021 | 22:10:06 | Flooding - Other Action | Squirrel's Heath | RM2 | RM2 6LH |
| 079070-25062021 | 25/06/2021 | 22:10:19 | Flooding - Make Safe | Gooshays | RM3 | RM3 7UF |
| 079073-25062021 | 25/06/2021 | 22:13:05 | Flooding - Make Safe | Heaton | RM3 | RM3 7PA |
| 079075-25062021 | 25/06/2021 | 22:15:11 | Flooding - Advice Only | Harold Wood | RM3 | RM3 0ZA |
| 079082-25062021 | 25/06/2021 | 22:26:47 | Flooding - Make Safe | Heaton | RM3 | RM3 7NU |
| 079084-25062021 | 25/06/2021 | 22:28:28 | Flooding - Advice Only | Gooshays | RM3 | RM3 7ST |
| 079091-25062021 | 25/06/2021 | 22:37:22 | Flooding - Make Safe | Heaton | RM3 | RM3 7NT |
| 079099-25062021 | 25/06/2021 | 22:55:55 | Flooding - Make Safe | Heaton | RM3 | RM3 7NX |

Additionally, please find attached to this response the following documents for your reference:

- London Local Authorities Debrief Report
- London Resilience Partnership Debrief Report

Although not specific to the flooding event on 25 June, the documents report on the subsequent flooding that took place predominantly across the south-west and north-west of London on 12 and 25 July 2021.

Please also see the link to the published report, 'Surface Water Flooding in London' on the Greater London Authority (GLA) website:

<https://www.london.gov.uk/WHAT-WE-DO/environment/environment-publications/surface-water-flooding-london>

We have dealt with your request under the Freedom of Information Act 2000. For more information about this process please see the guidance we publish about making a request on our website: <https://www.london-fire.gov.uk/about-us/transparency/request-information-from-us/>

Flooding, 12th and 25th July 2021

London Local Authorities Debrief Report

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1 Timeline and incident summaries

This debrief report covers two incidents of heavy rainfall leading to localised surface water flooding which occurred on 12th and 25th July 2021.

1.1 12th July Flooding, Incident summary

On the 12th July a Yellow Rain Warning (Low Likelihood of Medium Impacts) was issued by the Met Office valid from 10.00 to 23.59 on Monday 12th July. This was issued to the Partnership via email at 09.40 along with further advice from the Met Office Advisor (Civil Contingencies) and the Environment Agency.

Heavy showers and thunderstorms led to surface water flooding across large areas of London throughout the afternoon and into the evening. Flooding primarily affected Richmond & Wandsworth, Hammersmith & Fulham, Kensington & Chelsea, Westminster, Camden, Brent, Barnet, Ealing and Enfield.

1.1.1 Key impacts:

- Surface water flooding of residential and business properties, particularly lower ground and basement properties, leading to the displacement of residents;
- Blocked gullies and drainage network;
- Surge in out of hours calls to contact centres;
- Flooding of transport network leading to road closures, dislodging of manhole covers, and damage to the road network. Multiple incidents across the road networks;
- Flooded underground track and stations. Train with passengers stuck in flood water;
- London Overground assets overwhelmed in affected areas;

More detailed information on the impacts responded to within each borough can be found in [Annex B](#).

1.1.2 Timeline

- **17:30**- First notification of flooding to London Resilience Group (LRG) Duty Manager, called by London Situational Awareness Team (LSAT) to request any available information;
- **17:45**- Duty Manager received a voicemail from LFB Control requesting help with contacting Local Authorities to support LFB with the provision of sandbags;
- **18:24**- LRG Duty Manager called London Local Authority Gold (LLAG) to gain approval on sandbag request and data collection regarding any flooded properties.
- **18:41**- Sandbag request and LLAG request for any information on flooded properties sent to London Local Authorities via mass messaging system and email.
- **19:15**- LFB declared a major incident due to heavy rainfall creating serious flooding predominately across the south-west and north-west of London.
- **19:43**- Notification of Partnership teleconference to the Partnership.
- **19:51**- Local Authority offers of support (sand / sandbags) shared with LFB.
- **20:30** London Resilience Partnership teleconference held (ended 21:50).
- **22:30** approximately - London Resilience Communication Group (LRCG) public communications call held.
- **22:53**- Update sent to Local Authorities.
- **23:09**- Major incident stand down sent to Partnership.

1.2 25th July Flooding, Incident summary

On the 25th July a Yellow Thunderstorm Warning for heavy showers and thunderstorms was issued by the Met Office valid from 05.00 to 23.59 on Sunday 25th July 2021. This was originally issued at 11.29 on Friday 23rd July and updated at 09.50 on 25th July.

This was later upgraded for the area most likely to see significant impacts. At 14.33 on the 25th July an Amber Thunderstorm Warning for heavy showers and isolated thunderstorms was issued by the Met Office valid from 14.33 to 19.00 on 25th July. The Environment Agency issued 13 Flood Alerts and two Flood Warnings. Heavy rainfall led to localised surface water flooding across multiple parts of London.

1.2.1 Key impacts:

- Surface water flooding of residential and business properties, particularly lower ground and basement dwellings, leading to the displacement of residents;
- Flooding of transport network leading to road closures, dislodging of manhole covers, and damage to the road network. People trapped in cars in flood water;
- Blocked gullies and drainage network;
- Two hospitals declared major incidents and some patients evacuated. Ambulances diverted from Emergency Departments;
- Flooding at Charlie Brown's roundabout leading to major incident declaration;

More detailed information on the impacts responded to within each borough can be found in [Annex B](#).

1.2.2 Timeline

- **15:30** - Tripartite call between LRG, Environment Agency and Met Office on receipt of the Amber warning. The consensus was that a full Partnership call was not required but that an email message would be sent to the Partnership with the latest EA and Met Office advice and a request for partners to report any significant issues by exception to LRG (email sent at 17.02);
- **17:02** - Email sent to Local Authorities and Partnership asking for details of any significant impacts. No Partnership Teleconference planned;
- **17:21** - Major Incident declared by Metropolitan Police Service (MPS) due to flooding at Charlie Brown's roundabout;
- **17:25** - LLAG briefed via e-mail;
- **18:02** - NHS reported severe problems in NE London as a result of flooding with Whipps Cross and Newham hospitals impacted;
- **18:30** - Further update sent to LLAG with information on MPS Major Incident re flooding at Charlie Brown Roundabout;
- **18:30** - Partnership call with selected partners held in relation to the Charlie Brown's roundabout Major Incident, chaired by MPS;
- **19:42** - Further update sent to LLAG re outcome of selected Partners' Call;
- **20:00** - Liaising with worst impacted boroughs;
- **20:35** - General update sent to Local Authorities and Partnership;
- **20:46** - Follow up Partnership call cancelled;
- **21:20** - MPS major incident stood down.
- **21:26** - NHS reports that Barts Trust declared a major incident for the flooding issues in NE London. NHS confirmed incidents managed locally with LFB support. Major incident stood down 29th July, 11.00

2 Debrief format and aim

The London Local Authority debrief took place on Friday 6th August 2021, facilitated by London Resilience Group, and attended by sixteen Local Authorities (all invited) and the Regional Support Team. A list of attendees can be found in [Annex A](#).

Prior to the debrief, a request was sent by London Resilience Group (LRG) to all London Local Authorities for online feedback to be submitted for both incidents on the 12th and 25th July. Feedback was received by twelve teams and can be found in [Annex C](#).

Feedback was reviewed by LRG and grouped into key themes and issues. As the themes across both incidents were largely similar, the debrief sessions were combined. These themes were used as the basis for structuring the debrief and have similarly been used to structure the debrief report below.

The London Local Authorities debrief was scheduled in advance of the strategic multi-agency Partnership debrief held on 12th August, to enable local authority learning to be fed into discussions with wider partners.

Aim of debrief: To identify pan-London Local Authorities strategic lessons to inform and improve future planning and response activities.

Learning identified at the debrief was categorised into the following:

- i. Learning for submission to the Partnership debrief on 12th August
- ii. Learning that can be considered 'quick wins' (e.g. resolution in the next four weeks, in anticipation of further severe weather)
- iii. Learning for inclusion/consideration as part of the London Local Authorities lessons process
- iv. For internal (Borough) learning only

3 Summary of issues identified and associated recommendations

| # | Issue identified | Recommendation/ action | Owner |
|--|--|---|---|
| Weather warnings and flood risk | | | |
| 01 | Local Authorities do not always know the condition of gullies and water levels at the time of receiving a weather warning. LB Sutton outlined that they are currently exploring how they can better inspect high risk flood areas when severe weather/flood warnings are received to better prioritise the clearance of gullies, thereby reducing the flood risk. | Action: LB Sutton to share any best practice and key findings with other Local Authorities on their work to improve their inspection of high risk flood areas on receipt of weather warnings. | LB Sutton |
| 02 | | Recommendation: All boroughs to review their arrangements for inspecting high risk flood areas including those with a history of surface water flooding to ensure the risk is reduced or impact minimised | Local Authorities |
| 02 | | Recommendation: Local Authorities to work with Thames Water to consider how they can work together to better inspect high risk flood areas when severe weather/flood warnings | Local Authorities (Submission to LA lessons database) |
| 03 | The nature of flash flooding is such that it is difficult for anyone to develop absolute plans to prevent it and then respond, where required, in timeframes that will reduce impacts. During each incident there were several examples of water coming up the sewage network (volume of rainwater) which makes it almost impossible to stop. It should therefore be acknowledged that flooding will happen despite the best efforts of the Partnership. | Recommendation: Capacity issues in the drainage network mean it cannot handle significant heavy rainfall and flooding becomes inevitable. Partners need to consider how this can be sensitively communicated to communities. To be raised at the multi-agency Partnership debrief for further discussion. | Local Authority Partnership debrief representative(s) (For discussion at multi-agency Partnership debrief) |
| Notification and activation | | | |
| 04 | An all informed message was sent to Local Authorities on 12 th July with a request for sandbags and 14 responses were received within the 40 minute timeframe of the request. Questions were raised around the criteria and triggers for LRG notifying Local Authorities and via which methods. | Action: Documentation outlining LRGs notification procedures and triggers, and the LLAG suite of documentation to be circulated to Local Authorities. | LRG (Identified as a quick win, for immediate action) |

| # | Issue identified | Recommendation/ action | Owner |
|--|--|---|---|
| | | Local authorities are reminded to inform the LRG duty manager of any impacts which may affect their ability to respond to a sepeeraat incident. | |
| 05 | There was some confusion over the major incident declaration by LFB. It was declared as a result of the cumulative impacts across London and was not specific to a borough, however this was not clearly understood by all. This highlighted the importance of communication between Local Authorities and LFB at a local level. | To be raised at the multi-agency Partnership debrief for further discussion. | Local Authority Partnership debrief representative(s) (For discussion at multi-agency Partnership debrief) |
| 06 | LB Hackney noted that the use of a marked response vehicle was critical in enabling the tactical commander to deploy to their location within a short time frame. Without this, they responder would have faced significant delays to their journey. | Consideration: Local Authorities to consider the benefits of using marked response vehicles in aiding the timely deployment and movement of key staff | Local Authorities (Submission to LA lessons database) |
| Borough command/response structures | | | |
| 07 | All Local Authorities impacted by the flooding activated their relevant incident command structures, and internal coordination arrangements largely worked well. An example of good practice was shared by Camden who deployed multiple LALOs to multiple scenes, with a dedicated EPO for each scene feeding back centrally. | Consideration: Local Authorities to consider, as good practice, the assigning of LALOs/EPOs to different sites during incidents involving multiple locations (eg. flooding). | Local Authorities |
| 08 | Council Members from some Local Authorities were actively involved in the response to flooding. At times this created additional pressures and demands on emergency planning teams, detracting from their capacity to respond to the incident. | Recommendation: Local Authorities to deliver training and share guidance with Council Members on emergency response arrangements, roles, responsibilities, and how they can best support during an incident using the exiting training package available, where not done so already. Recommendation: Boroughs to ensure systems are in place to capture the early intelligence and insight from ward councillors in this type of situation, and share any good practice with LRG for onward dissemination to all London LAs. | Local Authorities (quick win) (Submission to LA lessons database) (Submission to LA lessons database) |

| # | Issue identified | Recommendation/ action | Owner |
|-----------------------------------|--|---|--|
| Borough call centres | | | |
| 09 | <p>On 12th July a number of Local Authorities reported that their out of hours call centres received a high number of calls, in some cases exceeding the capacity of call centre staff. Some Local Authorities call centres had been outsourced to a company that provide services for multiple councils within and outside of London, so were unable to respond to the volume of calls.</p> <p>This was compounded by staff shortage issues related to Covid-19 self-isolation requirements. This resulted in complaints to at least one local authority.</p> <p>LB highlighted a 'chat bot' that they utilise when dealing with a high number of calls. This could be explored by other Boroughs.</p> | <p>Recommendation: Local Authorities to review their out of hours contact arrangements to ensure they are robust and able to deal with a high volume of calls.</p> | <p>Local Authorities</p> <p>(Submission to LA lessons database)</p> |
| 10 | <p>In some cases, members of the public who had called LFB control room were signposted to the Local Authority. This was as a result of the high number of calls received by LFB and their need to prioritise attendance at calls where there was a potential risk to life. This created the expectation that the Local Authority could provide the services the caller was contacting the LFB about e.g., pumping of water from properties. This led to some callers feeling frustrated.</p> | <p>To be raised at the multi-agency Partnership debrief for further discussion.</p> | <p>Local Authority Partnership debrief representative(s)</p> <p>(For discussion at multi-agency Partnership debrief)</p> |
| Partnership teleconference | | | |
| 11 | <p>A partnership teleconference was convened out of hours on both the 12th and 25th July. Whilst there are robust strategic coordination arrangements in place through the Strategic Coordination Protocol, the arrangements for Partnership teleconferences could be clarified further, including participation by and representation of Local Authorities.</p> | <p>To be raised at the multi-agency Partnership debrief for further discussion.</p> | <p>Local Authority Partnership debrief representative(s)</p> <p>(For discussion at multi-agency Partnership debrief)</p> |

| # | Issue identified | Recommendation/ action | Owner |
|----------------------------|--|---|--|
| 12 | <p>It was noted that the speed at which the partnership teleconference was held posed some challenges for Local Authorities in securing the representatives (in addition to LLAG), however all required agencies were represented on the call.</p> | <p>Recommendation: Local Authorities to ensure that suitable out of hours arrangements are in place locally to facilitate appropriate strategic level representation at out of hours Partnership calls, including at short notice.</p> <p>Recommendation: LAP-IG to feed this challenge into the LAP Fundamental Review to prompt a fresh look at how representation is achieved. (LLAG can only represent Boroughs if they have a good grasp of the situation on the ground and this is communicated, but conversely it is impractical to hold a partnership call or SCG with a large number of boroughs represented).</p> | <p>Local Authorities (quick win)</p> <p>(Submission to LA lessons database)</p> <p>LAP-IG to feed into LAP Fundamental Review.</p> |
| Partnership working | | | |
| 13 | <p>The contact details for and response times of Thames Water was noted by multiple Local Authorities, and further clarity on these is required from Thames Water.</p> <p>Local Authorities would like clarification on the legislation / duties that apply to Thames Water in response to surface water flooding and surcharging into/from the sewage network, this will help clarify Thames Water's responsibilities for response arrangements, decontamination / recovery and insurance liability.</p> <p>An example was provided by LB Camden who have a local area affected by sewage contamination, that resulted from planned sewage system works and have had to use external contractors to help with decontaminating public locations. Camden would welcome clarification of Thames Water's liability and if part of the recovery/decontamination costs should be met by them.</p> | <p>Recommendation: Thames Water to clarify their responsibilities and liability when flood water is mixed with sewage systems and surcharges onto the public realm.</p> <p>To be raised at the Partnership debrief for discussion.</p> | <p>Thames Water (quick win)</p> <p>(For discussion at multi-agency Partnership debrief)</p> |

| # | Issue identified | Recommendation/ action | Owner |
|-----------------------------------|---|--|---|
| Borough impact assessments | | | |
| 14 | Due to the quick onset nature of the flooding, and wide range of areas impacted, some Local Authorities faced challenges in capturing, recording, and disseminating information on areas affected by flooding. This was compounded by a large number of incoming calls received by some Local Authorities into their emergency contact lines. | Action: LB Haringey to share their tool used for flood impact assessment as an example of good practice with other boroughs | LB Haringey (quick win) |
| 15 | Some examples of good practice were shared by boroughs. | Action: LB Hounslow’s mechanism for capturing information on flooding from multiple sources into a master dataset to be shared as an example of good practice | LB Hounslow (quick win) |
| 16 | Local Authorities are not notified of every flooding location by residents, and LFB appear to be the main contact point used by residents when flash flooding is affecting properties. The affected boroughs struggled to obtain this data from LFB, so that adequate and timely resources and rest centres could be established. Local Authorities appreciate that LFB was faced with an unprecedented volume of calls during the flood periods, and this may have affected its ability to share data. Local Authorities responded as best as possible within the constraints of the scenario. | To be raised at the multi-agency Partnership debrief for further discussion. | Local Authority Partnership debrief representative(s) (For discussion at multi-agency Partnership debrief) |
| 17 | Local Authorities have a duty to assess the impacts of flooding, but this was particularly challenging in the case of flooding of private properties if it was not reported by residents or partner agencies. In at least one borough Business Area Leads were used as a focal point to quickly understand the impacts of the flooding. In other examples, it was not until enquiries were received from Council Members that the full extent of flooding became known days after the incident. | Recommendation: Local Authorities to strengthen where necessary their engagement with borough business area leads (to build a better picture of impacts to businesses during an incident). | Local Authorities (Submission to LA lessons database) |
| 18 | The Partnership needs a way to collectively and quickly capture data held by all partners to ensure that efforts are directed towards areas most in need. LB Haringey discussed a tool they had used for assessing flooding impacts and agreed to share this as an example of best practice. | Recommendation: Explore the potential for a mechanism that can be used by multi-agency partners including Local Authorities in quick time to assess impacts of flooding. This could also include actions / issues taken by partners at each location. | Local Authority Partnership debrief representative(s) (For discussion at multi-agency Partnership debrief) |

| # | Issue identified | Recommendation/ action | Owner |
|---|--|--|--|
| | | Action: to be raised at the multi-agency partnership debrief for further discussion. | |
| 19 | In order to build a collective picture of impacts across London, Local Authorities were asked to report impacts by exception via email to LRG. It was suggested that an online sit rep would have been valuable for gaining a rapid regional picture. | An online tool is currently in development, commissioned by LAPIG. This work will progress as planned. Recommendation: ensure the online tool currently being developed is equipped for the fast time capture of information and impacts during quick on-set incidents such as surface water flooding scenario | LAPIG |
| Public communications and engagement | | | |
| 20 | Communication with residents is key in relation to warning in advance of potential heavy rainfall and good practice they could apply to protect their homes and businesses. Some Local Authorities had good examples of proactivity but this is something that may benefit from a consistent partnership approach, so an agreed model and messaging is delivered across all of London. | Recommendation: Consistent messaging and proactive communications across London that reinforce the important steps individuals, communities and businesses can take in preparing for flooding, as well as the role of the Local Authority and other partner agencies. To be raised at the multi-agency partnership debrief for further discussion. | London Councils |
| 21 | | Recommendation: Local Authorities to review their public communication flood preparedness/response assets to ensure they are easily accessible and up to date. | Local Authorities (quick win) |
| 22 | There were multiple instances of members of the public utilising social media to inform Local Authorities of flooding and associated impacts, rather than using the designated emergency line. | Recommendation: Local Authorities to consider more immediate proactive communication through social media channels, ensuring regular and constant updates are provided and the public have a clear mechanism for reporting issues. Note: The London Resilience Communication Group are undertaking similar work to explore the better use of social media during an incident. | Local Authorities (Submission to LA lessons database) |

| # | Issue identified | Recommendation/ action | Owner |
|-----------------|--|--|--|
| 23 | <p>The importance of effective public communications in developing resilient communities was noted. It is important to ensure that residents and businesses in ‘at risk’ locations are aware of the flood risk, and are supported and empowered to prepare for and respond to flooding when it occurs. This will require funding and a commitment to ensure London is in the best possible state to deal with this. This links closely to the government emphasis on whole-society resilience.</p> <p>Data sharing by the Met Office on uptake rates for the Met Office App, would help identify areas where this is less used, and this would help Local Authorities/Partnership to support areas/communities with flood preparedness and resilience information.</p> | <p>Recommendation: The Partnership to consider targeted communications activities with those geographies and communities most at risk of flooding (noting the extreme difficulty in predicting surface water flooding), encouraging them to have their own flood preparedness measures in place and not to rely on Local Authorities or other agencies. This activity could be tied in to existing public comms campaigns such as ‘Flood Awareness Week’ or ‘30 Days 30 Ways’.</p> <p>To be raised at the multi-agency partnership debrief for further discussion.</p> <p>Note: there is an LRF project looking at community resilience and risk communication which will complement the recommendations above.</p> | <p>Local Authority Partnership debrief representative(s)</p> <p>(For discussion at multi-agency Partnership debrief)</p> |
| Sandbags | | | |
| 24 | <p>A request was sent to Local Authorities on behalf of LFB to ascertain the level of sandbag stocks held by Local Authorities, and what stocks could be deployed. It was unclear from Local Authorities on what the intended use of these sandbags was for, and whether it was an appropriate use of them due to the speed of the flash flooding and impacts on the travel network. In addition, the logistical challenges associated with the collection, deployment and set up of sandbags across boroughs would have prevented their timely use.</p> | <p>Recommendation: The Partnership to explore smarter and more localised solutions for sandbag and wider flood defence asset provision, e.g., through development of a central contractor list.</p> <p>To be raised at the partnership debrief for further consideration.</p> | <p>Local Authority Partnership debrief representative(s)</p> <p>(For discussion at multi-agency Partnership debrief)</p> |
| 25 | <p>Not all Local Authorities hold supplies of sandbags, and for those that do, these are not extensive. They are mainly held for use in small scale critical ‘BAU’ emergencies, and most often for the protection of critical infrastructure. Local Authorities would benefit from a shared stance on when and how sandbags are used.</p> | <p>Recommendation: To agree a consistent approach on sandbag policy for all London Local Authorities.</p> | <p>Local Authorities</p> |

| # | Issue identified | Recommendation/ action | Owner |
|--|--|---|---|
| Emergency shelter and accommodation | | | |
| 26 | <p>Flooding to a number of residential properties required the evacuation and temporary accommodation of residents across multiple boroughs. In many cases residents self evacuated and secured their own temporary arrangements. Unlike a rest centre scenario where the Local Authority can more easily identify needs and contact information of residents, this created challenges in ensuring the Local Authority was able to identify and support relevant individuals on their return to the properties at a later stage.</p> | <p>Recommendation: Local Authorities to consider options for identifying individuals requiring support who are not at incident sites and do not attend rest centre settings (e.g. communications, registration forms)</p> <p>To be raised at the partnership debrief for further consideration</p> | <p>Local Authority Partnership debrief representative(s)</p> <p>(For discussion at multi-agency Partnership debrief)</p> <p>(Submission to LA lessons database)</p> |
| 27 | <p>One example of flooding at a care home highlighted the importance of ensuring emergency plans are in place to meet the needs of diverse groups of people, including vulnerable groups in care homes. The debrief highlighted differing arrangements across Local Authorities in London for care home evacuations, with some using arrangements with hotels.</p> | <p>Recommendation: Local Authorities to develop a common approach to the evacuation of care homes and vulnerable residents across London.</p> | <p>Standardisation Board</p> <p>(Submission to LA lessons database)</p> |
| 28 | <p>In at least one example, the need for greater clarity on the roles and responsibilities of landlords versus Local Authorities was required, and communication between housing associations and the Local Authority could have been improved.</p> <p>There were some instances of Local Authorities being contacted with complaints about the support being received from some Housing Associations.</p> | <p>Recommendation: Local Authorities to ensure emergency contact details for housing associations are easily accessible and up to date.</p> | <p>Local Authorities</p> |
| Water pumping capacity | | | |
| 29 | <p>LB Sutton reported that their contractors did not have sufficient water pumping capacity to deal with the scale of the incident on 25th July.</p> | <p>Recommendation: Local Authorities to review the flood water pumping capacity available within their Borough, and share any good practice with LRG for onward dissemination to all London LAs.</p> | <p>Local Authorities</p> <p>(Submission to LA lessons database)</p> |

Annex A: Debrief attendees

The LLA debrief session took place on Friday 6th August and was held via Microsoft Teams.

| Organisation | Representative |
|--|---|
| City of Westminster | Mike Wilkins, Gareth Morgan |
| London Borough of Brent | Daryl Jooste |
| London Borough of Ealing | Stuart Turner, Laura Brady |
| London Borough of Hammersmith and Fulham | Denise Prieto, Michelle Otoo |
| London Borough of Hounslow | Twm Palmer |
| London Borough of Newham | Mathew Hooper |
| London Borough of Sutton | Mike Lewis |
| Resilience Support Team (RST) | Mark Sawyer |
| Royal Borough of Kensington and Chelsea | Andrew Pritchard, Philip West |
| London Borough of Barking, Dagenham, Redbridge | Laura Harrison |
| London Borough of Camden | Samantha Whiteside, Candice West |
| London Borough of Hackney | Andy Wells |
| London Borough of Haringey | Christina Tellez |
| London Borough of Lewisham | Laurie Grasty, Anthony O'Rourke |
| London Borough of Richmond and Wandsworth | Ali Malvern, Alice Murray |
| London Resilience Group (LRG) | Jeremy Reynolds (Chair), Toby Gould (LRG response rep) Georgie Timmins (note taker) |
| Royal Borough of Greenwich | Irma Palubeckiene |
| Royal Borough of Kingston | Chris Begley, Jack Molyneux |

Annex B: London Local Authority key impacts and actions

The section below summarises the key impacts faced by boroughs during both incidents on the 12th and 25th July and the actions that they took. This was collated using the online feedback received. It was circulated to participants prior to the debrief.

Flooding 12 July 2021

| # | Borough | Key actions taken by the borough your organisation during the incident. | What are the key impacts that your organisation responded to during the incident? |
|---|---------|--|--|
| 1 | Brent | <p>Pushed out contact centre number inviting affected persons to make contact re homelessness etc. Stood by Rest Centre (not required). Attempted contact with Housing Assoc (which was where majority of flooding took place). Contact made the following day. Rehoused displaced families until HA or insurance arrangements were made. Provided waste collection for flood damaged items. Pushed out comms re Resident Support Fund inviting applications for funds etc. Provided neighbourhood patrols in the affected area over the following days to engage with residents and businesses.</p> | <p>Rainfall – water ingress via windows, ceilings, roof to council properties, associated domestic electrical issues where these went into sockets, appliances etc</p> <p>Surface water – property flooding and associated homelessness, carriageway flooding and associated road closures, damage to road surfaces (in particular brick paved) where pressure of water dislodged large sections of paving</p> |
| 2 | Camden | <p>Emergency Management Team responded to 5 separate flooding incidents during the evening / night of 12th July. (Initially called and notified by Police colleagues to 'critical incident' of flooding) other information was coming in from LALOs on scene and via emergency contact line of residents reporting flooding.</p> <p>4 Duty Emergency Planning Officer activated 4 LALOs deployed</p> <p>Director of Resilience responding, and Comms team involved</p> <p>Hotel Accommodation for 3 impacted residents</p> <p>Transport for many to friends / family</p> <p>arranging repairs teams, highways, gulley suckers, pumping out water</p> <p>Ensuring welfare of all impacted - undertook extensive door knocking in partnership with police colleagues.</p> <p>Liaised with housing associations and advised next steps for individuals post incident response, insurance etc.</p> | <p>Key impacts were repairs and flood damage.</p> <p>Ensuring people had a safe place to go to if unable to stay in their property and arranging transport.</p> |

| # | Borough | Key actions taken by the borough your organisation during the incident. | What are the key impacts that your organisation responded to during the incident? |
|---|---------------------|--|---|
| 3 | City of Westminster | <p>Immediate Actions</p> <p>Deploy LALO's to scenes, to assess the scale & impact of the incident</p> <p>Set up a reception centre for displaced residents</p> <p>Request assistance from British Red Cross to reception centre</p> <p>Run a vulnerable persons check for the impacted streets.</p> <p>Attempt to contact housing associations impacted by the floods</p> <p>Activate a virtual BECC</p> <p>Deploy gulley suckers to clear any blocked drains</p> <p>Check highways for missing inspection / drain covers</p> <p>Arrange hotel accommodation for all evacuated residents who had nowhere else to go.</p> <p>Transport residents from reception centre to the hotels</p> <p>Advice to call centres</p> <p>Advice on the Councils Website</p> <p>Actions taken early the following day and ongoing:</p> <p>Set up a residents information point on the street mainly impacted by the flood</p> <p>Set up an information and advice centre for residents and businesses close by.</p> <p>Leaflet drops to residents and businesses in the area giving advice what to do and key contact number etc</p> <p>Commence clear up, deploying specialist vehicles and resources to safely remove the property being deposited on the streets.</p> <p>Liaise with other responders ie Thames Water, housing associations, neighbouring boroughs</p> <p>Deploying volunteers to assist residents who were unable to remove spoiled belongings</p> <p>Activate elements of our own business continuity plan as some of our properties were flooded.</p> | <ul style="list-style-type: none"> • Setting up a reception centre for displaced residents • Deploying LALOs to the scene of flooding to ensure residents were aware of the reception centre • Setting up a BECC • Provide temporary hotel accommodation for displaced residents • Deploying gulley suckers to clear drains • Ensure our call centres have up to date information • Ensure the Council's web site is kept up to date • Liaise with partner agencies including housing associations and utility companies • Arrange removal of debris being placed on the streets from flooded homes & businesses, including removing it from people's homes if the residents required assistance. • Set up an information point at the scene of the main impacted street and an assistant point close by for both residents and businesses. • Provide welfare support where needed |

LONDON RESILIENCE

| # | Borough | Key actions taken by the borough your organisation during the incident. | What are the key impacts that your organisation responded to during the incident? |
|---|-----------|---|---|
| 4 | Ealing | Ealing did not suffer significant impacts from the flooding on the 12th of July. However, we did respond to multiple requests to assist with road closures, reports of manhole covers being dislodged, and sewers being overwhelmed. During this time our highways team were the key responding service. The council was not notified of any properties being affected although one school suffered damage. | The key impacts that we responded to were highways flooding, specifically in underpasses. There were also numerous reports of dislodged man-hole covers and some damage to a carriage way. We did not respond to any evacuations. Ealing were not as severely impacted as other boroughs. |
| 5 | Greenwich | Mutual aid resource requested by LRG placed on standby. | none |
| 6 | Hackney | None - solely responded to a request for information on number of sandbags held. | None |

| # | Borough | Key actions taken by the borough your organisation during the incident. | What are the key impacts that your organisation responded to during the incident? |
|---|----------------------|---|---|
| 7 | Hammersmith & Fulham | <p>We were alerted by our on-call Duty Silver regarding Contact Centre calls from residents in basement flats who were experiencing issues due to the heavy rainfall. Our on-call Duty Gold chaired 2 meetings on the evening of the 12th of July with key service leads to discuss and resolve any operational issues where possible. These meetings were followed up by 2 further meetings the following morning to discuss any outstanding issues and actions re these going forward.</p> <p>LBHF BECC was being monitored throughout the event for key messages. Highways Gully cleansing officers and contractors were active during the event.</p> <p>Key information posted on social media for tenants re emergency re-housing or repairs. This included phone numbers and contact details. Also included a link to our general Flooding advice page for all residents on social media. Comms liaised with Housing team for updates throughout the emergency. Emergency alerts via Next door and messages on Twitter and Facebook for emergency response. Comms attended all emergency Teams meetings to discuss response, including LRG.</p> <p>On-call Emergency Housing Response Officer in conjunction with the on-call Welfare Bronze (ASC) dealt with the identification of vulnerable residents who had key needs and arranged for residents to be put into temporary accommodation (34 Families)</p> <p>Displaced resident were put into hotels and their initial stay extended for 7 days if their immediate repairs were extensive.</p> <p>Surge in out of hours calls to the contact centre Exceptionally high volumes of calls from 16:30 onwards, extra staff drafted in at short notice to deal with these calls and the all the calls in the queue were dealt with by 20.00</p> <p>Website seeking help, support and guidance Kept updated</p> | <p>Flooding Issues re basement and ground floor flats</p> <p>Displaced residents due to flooding issues were put into hotels and their initial stay extended for 7 days if their immediate repairs were extensive.</p> <p>Surge in out of hours calls to the contact centre Exceptionally high volumes of calls from 16:30 onwards, extra staff drafted in at short notice to deal with these calls and the all the calls in the queue were dealt with by 20.00</p> <p>Website seeking help, support and guidance kept updated, plus an increase in posts on social media</p> |

| # | Borough | Key actions taken by the borough your organisation during the incident. | What are the key impacts that your organisation responded to during the incident? |
|---|----------|---|---|
| 8 | Haringey | <p>Responding Officers deployed to high-risk flood locations once a flood alert was issued</p> <p>Identified impacted locations</p> <p>Deployed Highways Team to clear gullies and drainage network</p> <p>Local Authority Silver/TCG meetings held</p> <p>Prepared flood guidance leaflet for residents</p> <p>Resident and business engagement in the worst impacted locations</p> <p>Developed a Flood Recovery Impact Assessment</p> <p>Attended a Public Meetings to brief worst affected residents and take recommendations for action</p> <p>Environmental Health Officers deployed to check on business premises following flood damage / utilities issues</p> <p>Conducted welfare checks on any 'known' vulnerable residents in Council Housing and private residences</p> <p>Liaised with Thames Water over reports of sewage contamination</p> <p>Checked in with Schools and Learning to ascertain if any schools were impacted</p> <p>Bulky Waste Collections organised for flood damaged items</p> | <p>Blocked gullies and drainage network</p> <p>Flooding to many residential properties and business premises from culverted rivers, tributaries and surface water flooding</p> <p>Disgruntled residents (largely due to perceived lack of gully clearance, flooding impacts and generally not feeling well supported by the Local Authority and Partners)</p> |
| 9 | Hounslow | <p>Responded to LRG Mutual aid request (no. of sandbags/quantity of sand that we would ultimately have been insufficient quantity of sandbags or logistically appropriate to deliver to affected boroughs.)</p> <p>No direct flood response action taken. No alerts through our on-call officer other than generic flood alerts.</p> | <p>Extreme highway flooding; some occurrences of internal flooding.</p> |

LONDON RESILIENCE

| # | Borough | Key actions taken by the borough your organisation during the incident. | What are the key impacts that your organisation responded to during the incident? |
|----|-----------------------|--|---|
| 10 | Kingston Upon Thames | <ol style="list-style-type: none"> 1. Monitoring of weather impacts and localised flooding in borough. 2. Activation of call out arrangements for staff and contractors required to attend locations and or have resources on standby. 3. Confirmation of available resources to assist with mutual aid if requested. 4. Confirmation of multi-agency comms message and circulation via social and media networks. | Surface water flooding at two locations, which required road closures for a number of hours. |
| 11 | Lewisham | Following the all informed message received to check the emails, this was carried out and the LA took no further action that day as we were unable to pride sandbags | None, other than the expectation that we were to do something immediately because of the all informed message and then not knowing if we were supposed to do something as the email only mentioned sandbags. The notification didn't follow any usual procedures from LLACC to indicate what level we were expected to operating under i.e., 1,2 or 3 |
| 12 | Richmond & Wandsworth | Attended the partners teleconference and provided briefing note summary to senior officers. | Limited impacts responded to due to issues recording impacts through our control centre. |

Flooding 25 July 2021

| ID | Borough | Key actions taken by your organisation during the incident. | What are the key impacts that your organisation responded to during the incident? |
|----|-----------------------|--|---|
| 1 | City of Westminster | Forward planning meetings were held to plan the City Council's response to the weather warnings. On the day we deployed officers to areas where reports of flooding were coming to confirm the impact and accuracy of the reports. | Residents needed to be found temporary alternative accommodation following water ingress to their premises, both from surface water flooding and water coming through the roof. One of our main admin buildings suffered minor flooding into the basement, BC plans were implemented with no interruption to service delivery. |
| 2 | Richmond & Wandsworth | LALO attended scene, street cleansing following incident. | Clean up of sewage left following flood. |
| 3 | Sutton | Comms, gully clearing, water pumping (where possible), traffic management, partner notification/coordination, LALO deployment and impact inspections, recovery activity (further reduction to flood risk in the area). | Surface water flooding to over 15 roads. Mostly external flooding to highways and front/rear gardens. Still getting the complete picture but aware of a number of locations with internal property flooding. 1 Family required rescue by LFB when their car became trapped by flood water. |

| ID | Borough | Key actions taken by your organisation during the incident. | What are the key impacts that your organisation responded to during the incident? |
|----|---------|--|--|
| 4 | Hackney | <p>Tactical Commander x 1, LALO x 1, Enforcement Officers x 2, estimated Waste Services x 20, Highways x 10, Tree Surgeons x 2 deployed to assist community.</p> <p>Key actions were evacuating vulnerable residents, reassuring residents with basement areas of their homes flooded, providing emergency lighting to private homeowners with power switched off, arranging for Waste Services to clear surface water, liaising with LFB about pumping out dwellings, arranging for Highways Contractors to barrier off failed pavement and road infrastructure, arranging for Tree Surgeons to remove fallen boughs.</p> | <p>9 separate incidents dealt with between 1700 hrs and 0300 hrs. This was not a flood as we plan for, more a series of randomly dispersed incidents that all happened at once.</p> <p>Incidents were: -</p> <ol style="list-style-type: none"> 1. Report from CCTV of flats flooding and 2 people de-housed heard on Police radio. 2. Report from CCTV of storm water entering BECC. 3. Report from Cllr Woodley of surface flooding on roadway of A10 jnc. Cazenove Road, businesses flooding. 4. Report from Waste of tree boughs snapped off and in road, on top of cars, no casualties. 5. Waste report no.62 Eastway flooded and 19 other terraced houses. Waste state they have broomed up water in road. 6. Reports of water flooding into lift shafts on 1 of 3 hi-rise blocks Lincoln Court N16. 7. CCTV report pavement collapsing and buckling, later confirmed by Waste report, at Dalston Lane jnc. Amhurst Rd. 8. EO20 reports drain cover in carriageway blown off, 5 m drop into sewer in middle of Amhurst Road. 9. Business in Well Street basement flooded, possible structural damage to floor of basement by upsurge beneath, all food storage areas flooded 1.5m deep. |

| ID | Borough | Key actions taken by your organisation during the incident. | What are the key impacts that your organisation responded to during the incident? |
|----|---|---|--|
| 5 | Hammersmith & Fulham | <p>All Emergency Response staff on standby as per 12th July. No real impact 25th July. Novotel Hotel was stood up as a rest centre on Saturday 24th and Sunday 25th July just in case it was needed. Equipment delivered. Rest Centre Manager stood up and a list of staff available on the two days were collated via responses to a Page One Communications call out</p> | <p>Nothing of note.</p> |
| 6 | Haringey | <p>Identified impacted locations Increased resources on standby after previous flooding incident Highways team together with contractors deployed to clear gullies and went proactively to areas badly affected previous flooding on the 12th July Deployed LALO to support, driving around to locations identified. Local Authority Silver/TCG meetings held Member engagement Conducted welfare checks on any 'known' vulnerable people in areas impacted Proactively contacted LFB, Thames Water and the out of hours call centre contractor CAPITA Business engagement across high roads and key economic centres in the borough Bulky Waste Collections organised for flood damaged items</p> | <p>Blocked gullies Flooding to residential properties from culverted rivers, tributaries, and surface water flooding Lots of Member enquiries about flooding impacts and blocked drains and gullies Disgruntled residents (largely due to perceived lack of gully clearance, flooding impacts and generally not feeling well supported by the Local Authority and partners)</p> |
| 7 | Tri-borough (Redbridge, Waltham Forest, Barking & Dagenham) | <p>All 3 boroughs responded at level 3 – incident response and activated the command structures (gold, silver, bronze). LALOS were deployed in all three boroughs A centre (not officially rest centre, just a centre?) was set up in Waltham Forest Whips cross hospital in Waltham Forest declared MI Police declared major incident at Redbridge at Charlie brown roundabout A rest centre was stood up in Redbridge</p> | <p>All three boroughs experienced widespread surface water flooding which caused disruption to transport network and roads Disruption to a number of properties at REDBRIDGE and Waltham Forest Sewer collapse at Barking</p> |

Annex C: Online feedback in advance of London Local Authority debrief session

The table below contains the returns submitted by Local Authorities via the online form prior to the debrief. This was reviewed and collated in to key themes by LRG prior to the debrief. These themes were used to structure the debrief.

| No. | LLA | What went well | What didn't go well | Recommendations, key considerations |
|------------------------------------|-------------|--|--|--|
| Notification and Activation | | | | |
| 1 (12 th) | Lewisham | The all informed message was received and responded to in the time asked | | Clarify when all informed messages are used and if we receive one are all Boroughs automatically expected to respond at level 3? |
| 2 (12 th) | Camden | | | Clear notification of incidents / needs |
| 3 (12 th) | Greenwich | A swift action by all as we had a decision and resource placed on standby within an hour, which is impressive as the activation was OOH. | | The activation by LRG worked well, just a note to say that we, Local Authorities, aren't Blue Light services and during an OOH will take time to gather the resource required especially to the deadline that was given us only an hour from the activation call. Local authority needs to follow protocols and procedures hence it involves a large number of staff. Otherwise, the activation worked well. |
| 4 (12 th) | Westminster | Swift deployment of LALOs. Quicker deployment of visible presence on the streets. (Information Point) | | |
| 5 (12 th) | Westminster | Quick Activation of Reception Centre | | |
| 6 (12 th) | Camden | Speed of response | | |
| 7 (12 th) | Lewisham | | There was no borough sitrep required to gain a London wide picture | Sitreps should also be required at this level of notification too |

LONDON RESILIENCE

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| 8 (12 th) | Hounslow | | LFB apparently responded to flooding at Isleworth Station, as part of their wider London boroughs flooding response, this appears to be why a major incident was declared which named London Borough of Hounslow and hence why LBH were invited to the SCG (based on emails between LBH Contingency Planning Colleagues and LRG). However other than one call to our council customer services, the council were not aware of flooding. This is likely due to highway flooding at Isleworth and one other known road, rather than property flooding, however neither LRG nor LFB alerted the council other than the above London Councils invite to the SCG meeting. | Would recommend LFB notifying the LBH directly via above number if they were declaring major incident due to impacts within the borough. |
| 9 (25 th) | Sutton | Notification into the duty EP team and deployment of LALO worked as intended. LALO was able to give a more complete picture of the impacts (but not full- see below). | | |
| 10 (25 th) | Sutton | Contractors OOH calls were answered. | Some enquiries OOH were going to email rather than being 'phoned in' to OOH contact centre/EP Duty Officer. | |
| 11 (25 th) | Hackney | Waste Services did very well mobilising staff to use 'mechanical brooms' to suck up surface water, and a Gully Sucker to clear blocked gullies. | | Only staff already at work were of any use, mobilisation of others would have been pointless as delays getting in would have been critical. |

| | | | | |
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| <p>12 (25th)</p> | <p>Westminster</p> | <p>Officers responded once it was confirmed we had heavy rainfall in the SW1 area. We responded to reports on social media of flooded roads in the W2 area, but this turned out to be a blocked gulley that adjacent gulley's were coping well. No flooding reported.</p> | | |
| <p>13 (25th)</p> | <p>Hackney</p> | <p>Mobilisation of staff - Tactical Commander had a 40 mile journey in down the M11 and A406, both closed by RTC x 1, Flood threat at Redbridge on M11, and flood at Charlie Browns Roundabout on A406, but use of a marked pool response vehicle and communication with Essex Police, HA and MPS at roadblocks ensured rapid progress achieved. The vehicle can be seen here:- https://youtu.be/WzMp_BxRB20</p> | <p>Tac.Commander was so busy negotiating Police and HA roadblocks they were unable to mobilise BECC staff, who in any event may have struggled to get in;</p> <p>Public Space Surveillance Operators were used instead as a Loggist but the pace of work was quite fast and less than perfect logging achieved.</p> | <p>The use of a marked response vehicle was critical to the Tac.Commander getting in, without it attendance would have taken an extra 90 minutes.</p> |

LONDON RESILIENCE

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| 14 (12 th) | Hounslow | | Notification we were affected, and request for our attendance at SCG came via London Councils request for an SCG. Which went to director of Communications rather than the emergency on-call structure/on-call officer/Contingency Planning Team which LRG holds; this meant this meeting was missed as director of comms did not see invitation in time. | Ensure any SCG meeting request goes through established 24/7 on-call/emergency response structure via our council out of hours number 020 8583 2222 so the on-call officer can arrange attendance and investigate whether LFB required support such as from our highways. Instead of through the director of communications (especially given in addition to above on-call function, we also have a 24/7 on-call corporate communications officer anyway). |
| 15 (12 th) | Kingston Upon Thames | Multi-agency: Gold / Partnership teleconference, sharing of information and view of the wider London picture. | Sharing the link for the Partnership call and confirmation of who should attend from each borough and at what level. | For an out of hours, short notice Partnership conference call one or more of the following borough representatives should participate: Emergency Planning / Resilience Manager, Council Silver, Council Gold and or CEO. It is up to each borough to decide who should attend on their behalf but if this cannot be confirmed before the start of the conference call, all available staff (as above) should participate. |
| Partnership Working | | | | |
| 16 (12 th) | Ealing | Coordination with the MPS and Highways to support road closures. | | |
| 17 (12 th) | H&F | Very good collaboration between key representatives at meetings convened at very short notice (mentioned above) to resolve issues | | |
| 18 (25 th) | Richmond and Wandsworth | | A lack of clarity on roles and responsibilities with partner agencies. | Clarity needed on contact details, roles and response times for Thames Water. |
| 19 (25 th) | Sutton | | Thames Water were slow to attend site and support with pumping water. | |

LONDON RESILIENCE

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| 20 (25 th) | Haringey | Proactive partner communication from LA to LFB and Thames Water | Gullies cleaned but sewage system still not coping Proactive contact was made but no partnership coordination was made | |
| | | | | |
| 21 (12 th) | Lewisham | | The email about sandbags was vague, and I felt that the logistics of saying yes to sandbags from numerous London Boroughs would have posed a real nightmare in collecting and distributing them to where they were needed. Looking at the level of flooding was this even a good use of sandbags? The request prompted concern that we should have had sandbags available and this query rumbled on in emails in our sub-region for the whole week. | LRG to hold a London contractor list of sandbag providers (probably Conway). All that would be needed is the approval from the Boroughs to provide support. The sandbags could be distributed more efficiently across the Capital that way. LFB to understand the role LA play in sandbag distribution. Many Borough's do not have them at all and if they do only for highways not residential properties |
| 22 (12 th) | Ealing | | Sandbags - Ealing does not have any. | I think there should be a minimum standard or a resilience standard for sandbags, covering deployment, minimum number, and type. I think that this should be a priority as flooding incidents are likely to increase in the next few years. Even for boroughs with low flooding risk profile. |
| 23 (25 th) | Sutton | | | Sandbags have been discussed in multiple exchanges- need myth busting but also to need of proper mitigations for properties. |

Borough capture of impacts

LONDON RESILIENCE

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| 24 (12 th) | Richmond and Wandsworth | Communication sharing between key officers. | Information into the control centre being recorded appropriately and shared accurately to inform decision making. No detail was available on properties/businesses affected, which meant I was unable to feed up to central on impacts. | Internal recommendation to ensure control centre know how to record and disseminate information, and advice to be provided on comms message to share with the public. |
| 25 (12 th) | Camden | | Information was difficult to get and clarify due to there being so many places impacted and a large volume of calls coming through to the emergency contact line. | |
| 26 (12 th) | Hounslow | Data collation: We have had 67 flood incidents reported this year, 25 of which occurred on the 12th July. The log is fully comprehensive with information and images. | | Reports were coming through multiple channels; this is fine as they can still be logged in our master dataset, however improved comms in general is a point to take forward so that the LLFA log can remain fully comprehensive. |
| 27 (25 th) | Richmond and Wandsworth | Communication between scene and Resilience Advisor. | Wider communications to members and senior staff | |
| 28 (25 th) | Hackney | LALO and Enforcement Officers used to:- + guard insecure residences after evacuation until they could be made secure. + reassure and give advice to residents of a terrace of 20 houses where the lower ground floors were flooded 0.6 m deep. + provide emergency LED lighting to 20 households with no lighting or power. CCTV used to monitor surface flooding and 'virtually' attend | | |

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| | | reported flood areas to make sure waters had receded. | | |
| 29 (25 th) | Sutton | | Understanding the scale and impact was incredibly challenging and not a quick process. This is especially true for identifying internal flooding if not reported by residents and locations where flood water rises and clears relatively quickly. We didn't learn of the extent of internal flooding until Friday 30th after receiving numerous Member Enquiries. | |
| 30 (25 th) | Haringey | Business area leads used as focal point to quickly understand the impacts | | |
| 31 (25 th) | Haringey | <p>Torrential rain stayed for a shorter time hence impact was less</p> <p>Vulnerable residents contacted quickly following flooding event Developed a flood impact map on Monday.com to quickly record locations and impacts. This system worked well and made our overview and prioritisation of the response easier.</p> | <p>Challenges in getting reports into the EP Team of flooding incidences and impacts - could not respond if didn't know locations of impact One Member told all other members to email EP inbox with flooding locations which got quickly out of hand for the team to respond to incident and to members emails at the same time.</p> | Method of quickly mapping flood impacts useful! |

LONDON RESILIENCE

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| 32 (12 th) | Brent | | | A London wide piece of work needs to be undertaken to advise and prepare the public around responsibilities for property protection. Most Local Authorities are fairly explicit (via their websites etc) about where the various responsibilities lie but there seems to be an impression that Local Authorities are responsible for protecting individual properties and are subsequently liable for all flooding events - perhaps a wider public information piece needs to occur to reinforce the message. |
| 33 (12 th) | Ealing | | Messaging to the public could have been better. Specially comms about what to do in a flood, i.e. don't go for a drive, if your house is flooded, switch off your electricity | Councils to review their online information and websites to ensure it is relevant. |
| 34 (12 th) | H&F | | <p>H&F was left with a much bigger task communicating with residents since Thames Water had not put out any messages to its customers about what to do in an emergency. This left a major vacuum for H&F to fill – as well as the reputational damage that comes with stepping in for a partner who has failed.</p> <p>It was clear that Thames Water were blaming the council when speaking to local residents and businesses. We have this well documented. The Press Office has approached TW to discuss a joint approach for emergencies in terms of communicating with H&F residents</p> | <p>Thames Water need to agree an emergency comms protocol with H&F. Separately, we have improved our Flooding advice page with more contact details in the case of an emergency, including the addition of a contact number and email for every housing association in H&F</p> <p>Common questions and themes arose about food, insurance, sharing information to secure support, need for new belongings – all of which need standard answers available to residents relevant to each borough.</p> |

LONDON RESILIENCE

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| 35 (12 th) | H&F | | There were a number of Housing Association residents who contacted the Council unhappy with the support they were receiving from their landlords via their contact centres. | |
| 36 (12 th) | Richmond and Wandsworth | | There was a very limited understanding of what advice to give to residents experiencing flooding, and uncertainty around responsibilities to respond/clear streets etc. | |
| 37 (12 th) | Camden | | Public were using Twitter particularly as a way to inform the council and councillors of flooding impacts rather than calling through to the emergency line. | More immediate communication locally, ensuring regular and constant updates are provided on website / social media etc. |
| 38 (12 th) | Greenwich | We have guidance leaflet for residents on our website that has a wealth of information for different types of incident preparation and how to enhance their resilience. | | During this incident our borough was not affected, but in general a clear information about Flood prevention, preparation, and actions during/after the flood. Providing links to the Environment Agency professional with plain English guidance for residents and businesses. In addition, information how to get in touch with the local authority and if it is an emergency reminding residents to contact 999. |
| 39 (25 th) | Sutton | | <p>Didn't put out comms on the flood alert issued (came in on Friday at 18:11), which was low risk.</p> <p>Reactive comms to the incident could have been quicker (again, with the benefit of hindsight knowing the true extent of flooding) and we needed to issue comms asking residents to report flooding to the Council for better situational awareness.</p> | <p>Need to raise awareness of flood risk to the community and promote community resilience further. We had an example of residents clearing a culvert channel after the flooding to prevent further flood risk as TW hadn't attended previously.</p> <p>Need to also deliver sensitively the message that capacity issues in the drainage network mean it cannot handle significant heavy rainfall and flooding becomes inevitable.</p> |

LONDON RESILIENCE

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| | | | | As above, reactive comms but needed to be issued sooner and to request residents to come forward with reports of flooding. |
| 40 (25 th) | Hackney | There was some positive tweets of Council staff working which assisted the council's reputation | One very negative twitter feed from the business severely affected until we made contact with them and assisted. | |
| 41 (25 th) | Haringey | | Continued discussions by residents of the lack of gully clearance. | Review of Local Authority flooding webpages to be more user friendly |
| Borough Command/Response structures | | | | |
| 42 (12 th) | Kingston Upon Thames | Internal: Command structure and on call arrangements. | | |
| 43 (12 th) | H&F | H&F Emergency Response structure (Gold, Silver Bronze) worked very well. | | |
| 43 (12 th) | Camden | Utilising multiple LALOs to multiple scenes having a dedicated EPO for each scene and feeding back centrally. | | |
| 44 (12 th) | Greenwich | | A key officer left the organisation and relevant services weren't informed especially as the officer was on the emergency cascade. Learning was recorded and appropriate action was taken and noted for the future. | Enhanced review of key contacts within the organisation. |

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| 45 (25 th) | Haringey | Bigger on-call standby team to respond | Decision-making and responsibilities during Recovery | Training/guidance for members to manage expectations and let them know what is helpful/not helpful during incident response |
| Borough Call Centres | | | | |
| 46 (12 th) | Brent | | Call centre volumes across all responders contact centres seemed to have exceeded capacity to answer them in a timely way. Our usual notification via emergency services was absent since LFB (primarily) were not attending each incident unless life was at risk. Some callers were told by the LFB control room to contact the council where LFB could not attend. This created the expectation that the council could provide the services the caller was contacting the LFB about e.g. pumping out, which we cannot do, and which was a source of frustration for the caller and for the council. | |
| 47 (12 th) | Ealing | | The council out of hours contact provided (capita) was overwhelmed. They provide a service for multiple boroughs and county councils they could not cope with the volume of calls, so we received complaints from residents unable to contact the council. | Councils to consider the out of hours contact arrangements to ensure they are robust and can deal with high volume of calls - I don't think this should be a priority unless this becomes an annual event |
| 48 (12 th) | Westminster | | Call centres were short of staff due to Covid pinging | |
| 49 (12 th) | Westminster | | Improved messages from our call centres | |

LONDON RESILIENCE

| Emergency Shelter/Accommodation | | | | |
|---------------------------------|-------|--|--|--|
| 50 (12 th) | H&F | | | Rest centre accommodation, capacity to provide respite for larger numbers of residents, temporarily displaced because of severe rainfall events in the future. We are currently reviewing our current rest centre capabilities. |
| 51 (12 th) | Brent | Support provided to families who contacted the council for rehousing has been robust and they have been extremely grateful | Non-contact with HA until later. | We maintain a list of private/non-public HA contacts exactly for the purposes of emergency contact - seems even the resilience contacts were overwhelmed. Will workshop this at our next Registered Provider Forum. |
| 52 (12 th) | H&F | Good collaboration between Housing and Comms teams to establish clear and quick lines on social media | Communications with Housing Associations and their interaction with the council could be improved. | There needs to be clearer demarcation lines about their role as landlords and their expectations of Local Authorities in emergency response. We are collating and updating our out of hours emergency contact details for housing associations |
| 53 (12 th) | H&F | | | Supporting families to understand the need, benefits, and associated costs to invest in home contents insurance. |
| 54 (12 th) | H&F | | | Regarding larger venues, due to the closure of Hammersmith Town Hall town hall we are reliant on the goodwill of businesses (Football Clubs for example) to provide us with emergency shelter. These organisations are more than amenable to assist us (if possible) in a real time, actual emergency where residents are displaced. Need to open conversations with regard to 'just in case' scenarios. |
| 55 (25 th) | H&F | Rest Centre preparation for activation if required. Subsequently not needed as main impacts were not in H&F | | |
| Adult Social Care | | | | |
| 56 (12 th) | H&F | | | ASC - Exercise looking at decants, joint support packages to those displaced and wrap around support after the initial period of getting a rest centre together |

| Waste Management | | | | |
|------------------------------|-------------|--|--|--|
| 57 (12 th) | Westminster | | The initial clear up could have been better coordinated | |
| 58 (12 th) | H&F | The RCV roaming skip service provided in the affected flood areas, and that residents appreciated the free bulky waste services being provided. We are still providing the free bulky waste service as residents are informing us that there has been a delay with their insurers coming to assess the resident's home damages. We are currently providing this service until 9th August and then we will review it. | | |
| Flood Risk Assessment | | | | |
| 59 (12 th) | H&F | | | Our Community Halls have been closed throughout COVID. Once these open They will need to be risk assessed to see if they are susceptible to flooding. Or have been damaged due to flooding. Will they still need to be COVID secure? |
| 60 (25 th) | Sutton | | | Process for inspecting high risk locations when warning received to clear gullies etc. and reduce flood risk. |
| Parking and traffic | | | | |
| 61 (25 th) | Sutton | Parking Services very responsive to request to open car parks for residents to use if they were unable to return home. | | |
| 62 (25 th) | Sutton | | Traffic management measures were ignored in some areas, meaning cars drove down flooded roads and created 'waves' to crash into properties aligning the highway. | |

| Water pumping capacity | | | | |
|---------------------------------|--------|--|---|---|
| 63 (25 th) | Sutton | | Contractors lacked sufficient water pumping capacity. | Need to enhance flood water pumping capability. |
| Borough plans/frameworks | | | | |
| 64 (25 th) | H&F | Flood and Extreme Rainfall plans updated and will be reviewed by SLT Assurance in terms of preparedness going forward. | | |

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LONDON RESILIENCE GROUP

The London Resilience Group is jointly funded and governed by the Greater London Authority, London Local Authorities and the London Fire Commissioner. We are hosted by the London Fire Brigade. Our work, and that of the London Resilience Partnership, is overseen by the London Resilience Forum.

LONDON RESILIENCE PARTNERSHIP

Flooding on 12th and 25th July 2021

London Resilience Partnership Debrief Report

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1. Summary of incident partnership activity

This debrief report covers two incidents of heavy rainfall leading to localised surface water flooding which occurred on 12th and 25th of July 2021.

On the 12th of July a Yellow Rain Warning (Low Likelihood of Medium Impacts) was issued by the Met Office valid from 10.00 to 23.59 on Monday 12th July. This was issued to the Partnership via email at 09.40 along with further advice from the Met Office Advisor (Civil Contingencies) and the Environment Agency (EA). A Yellow Flood Guidance Statement (Low Likelihood of Significant Impacts) was issued by the Flood Forecasting Centre at 10.27.

- 17.30 first notification of flooding to London Resilience Group (LRG) Duty Manager, called by London Situational Awareness Team (LSAT) to request any available information.
- 17.45 Duty Manager received a voicemail from London Fire Brigade (LFB) Control requesting help with contacting local authorities to support LFB with the provision of sandbags.
- 19.15 LFB declared a major incident due to heavy rainfall creating serious flooding predominately across the south-west and north-west of London.
- 19.37 Incident created on London Situational Awareness System (LSAS). No partner updates were put on the system.
- 20.30 London Resilience Partnership teleconference held.
- 22.30 approx. London Resilience Communication Group (LRCG) public communications call held.
- 23.09 Major Incident stand down message sent to Partnership.

On the 25th of July a Yellow Thunderstorm Warning for heavy showers and thunderstorms was issued by the Met Office valid from 05.00 to 23.59 on Sunday 25th July 2021. This was originally issued at 11.29 on Friday 23rd July and updated at 09.50 on 25th July. A Yellow Flood Guidance Statement (Low Likelihood of Significant Impacts) was issued by the Flood Forecasting Centre at 07.04 on Sunday 25th July 2021.

The Met Office warning was later upgraded for the area most likely to see significant impacts. At 14.33 on the 25th July an Amber Thunderstorm Warning for heavy showers and isolated thunderstorms was issued by the Met Office valid from 14.33 to 19.00 on 25th July. The Environment Agency issued 13 Flood Alerts and two Flood Warnings.

- 15.30 Tripartite call between London Resilience Group (LRG), Environment Agency and Met Office on receipt of the Amber warning. The consensus was that a full Partnership call was not required but that an email message would be sent to the Partnership with the latest EA and Met Office advice and a request for partners to report any significant issues by exception to LRG (email sent at 17.02).
- 17.21 Major Incident declared by Metropolitan Police Service (MPS) due to flooding at Charlie Brown's roundabout.
- 17.43 Incident created on London Situational Awareness System (LSAS). No partner updates were put on the system.
- 18.02 NHS reported severe problems in NE London as a result of flooding with Whipps Cross and Newham hospitals impacted.
- 18.30 Partnership call with selected partners held in relation to the Charlie Brown's roundabout Major Incident, chaired by MPS.
- 20.35 General update sent to Partnership and Local Authorities.
- 20.46 Follow up Partnership call cancelled.
- 21.20 MPS Major Incident stood down.
- 21.26 NHS reports that Barts Trust declared a major incident for the flooding issues in NE London. NHS confirmed incidents managed locally with LFB support. Major incident stood down 29th July, 11.00.

2. Key impacts - examples

2.1 12th July and 25th July

During the incident it proved difficult to gather a picture of the extent and nature of flooding across London. This list is a broad summary of some of the impacts experienced across London. Following the incidents the London Fire Brigade has produced maps of the calls made to their 999 Control Centre relating to flooding. These are included at Annex C to provide an approximate indication of the possible locations of flooding across London.

- Surge in calls to 999 and out of hours calls to contact centres.
- Flooding of residential and business properties, particularly lower ground and basement properties, leading to the displacement of residents. Including properties where people needed assistance evacuating or rescue or where there was a danger of fire.
- Blocked / overwhelmed gullies and drainage infrastructure.
- Vehicles stuck in high water with people trapped inside. Flooding at Charlie Brown's roundabout led to Major Incident declaration on 25th July.
- Two hospitals declared major incidents and some patients were evacuated. Ambulances were diverted from Emergency Departments.
- Flooding of road transport network leading to road closures, dislodging of manhole covers, and damage to the road network. Multiple incidents across the network.
- Flooded London Underground track and stations. Train with passengers stuck in flood water.
- London Overground assets overwhelmed in affected areas.

3. Debrief outline

The multi-agency debrief took place on Thursday 12th August, facilitated and scribed by London Resilience Group. The aim and participants list is at Annex A.

The debrief was structured around a number of key themes for which partners had the opportunity to submit contributions ahead of the debrief. The responses are provided in Annex B.

The key findings are detailed in section 4 below.

4. Debrief key findings

4.1 Weather warnings

Issue: The Met Office, Environment Agency and the Flood Forecasting Centre issued alerts, warnings and Flood Guidance Statements (see section 1) which were sent direct to response organisations and shared via the London Resilience Partnership Incident Distribution List.

However, the yellow and amber warnings didn't lead to a pre-emptive Partnership teleconference for either event to draw partner's attention towards the risk and escalate associated pre-emptive preparedness activity. The timing of warnings / upgraded warning was not necessarily useful to inform start-of-shift resource allocations for some partnership organisations.

Recommendation 01: Interim action to take a more proactive stance on tripartite calls between Met Office, Environment Agency and LRG on yellow warnings driven by high impacts even if the likelihood is low. The calls should consider what level we are operating at in the flood or severe weather frameworks, appropriate level of partnership coordination (including pre-emptive partnership calls or strategic / tactical coordination groups) and advice to issue to the Partnership by email.

Recommendation 02: Enhanced Partnership coordination to be established on all amber weather warnings or amber Flood Guidance Statements.

Recommendation 03: Longer term action to review triggers and actions in the Strategic Flood Framework and Severe Weather and Natural Hazards Framework are appropriately joined up and inclusive of all

weather and flood forecasting products, including triggers for Partnership calls and Strategic Coordinating Groups (SCG).

Recommendation 04: Longer term action to review the timing of warnings and messages from the Met Office and Environment Agency to consider if it is possible to issue earlier information to support earlier decision making regarding the placement of response resources. E.g. at the time when LFB determine allocation of resources across London at the start of a day or night shift. Noting this action is aspirational given the scientific limitations on forecasting for these kinds of events, partnership organisations should also review their flexibility to react quickly and reallocate resources based on forecast information.

Recommendation 05: Longer-term action for individual organisations to review the actions they take in response to the triggers / levels of weather and flood warnings in the London Strategic Flood Framework and Severe Weather & Natural Hazards Framework.

4.2 Notification and activation

Issue: It was noted there was a need to review the declaration of a Major Incident at tactical and/or strategic levels on a pan-London basis, rather than the current procedures set out in the London Emergency Services Liaison Panel (LESLP) Major Incident Procedure Manual which describes declaration of a Major Incident at the incident scene.

Recommendation 06: Action for LRF Blue Lights Panel to consider arrangements for regional declaration of Major Incidents at Tactical or Strategic level, including the declaration of Major Incident stand-down.

Issue: NHS questioned whether their declaration of a major incident was recognised by some partners in terms of the escalation of the services to provide support where required.

Recommendation 07: The definition of an internal NHS Major Incident and any specific implications arising from this for external partners should be clarified.

Issue: Difficulties in fast-time communications between Thames Water, Local Authorities (Lead Local Flood Authorities) and other partners.

Recommendation 08: Investigate ways to improve the fast time communications between Thames Water, Lead Local Flood Authorities and other partners. This should include confirmation of who Thames Water should ask for when making contact with Local Authorities during the response to an incident (e.g. LALO or Duty Silver) and vice-versa.

4.3 Partnership teleconferences

Issue: Tripartite calls were held and decisions to hold Partnership calls based on weather and flood warnings were made broadly in line with the London Strategic Flood Framework and London Severe Weather & Natural Hazards Framework. However, the increase to an amber weather warning on 25th July should have prompted a Partnership call (by the wording of the trigger in the Framework) but the tripartite call decided not to convene a Partnership call at that time.

A Partnership call was subsequently called by the MPS on 25th July in response to the Major Incident at Charlie Brown's roundabout. It was noted there could have been more prioritisation of the wider issues at the 1830 Partnership call, linked to other areas of flooding and the NHS situation.

The Partnership calls were considered to have been useful with a good level of engagement from Partners on the call. However not all partners were invited to the call on 25th July because it was originally called specifically for the Major Incident declaration at Charlie Brown's roundabout.

Recommendation 09: Investigate the potential to provide the Chair of the Partnership call with a fuller briefing/report of the issues before the meeting starts to allow for prioritisation. E.g. Asking Partners to report issues to raise for discussion at the meeting if time permits in advance of the call.

Recommendation 10: Develop standard arrangements for Partnership calls to mirror those for SCG. Include standing invitation to all Cat 1s and key agencies with others informed and able to request participation. For local authorities, this should include the participation of LLAG and one representative for each affected local authority.

Recommendation 11: During Partnership calls representatives should be asked to share their contact details (via chat function and/or via email) with other representatives to aid communication between participants after the call.

4.4 Impact assessment

Issue: The collation of information about the location and extent of flooding was difficult and mostly only achieved by sharing verbal updates during the Partnership calls. A number of organisations have information about the location and extent of flooding from reports made to them during an incident, including but not limited to the Environment Agency, Local Authorities (Lead Local Flood Authorities), London Fire Brigade, police services and water companies.

Recommendation 12: Commission a project to develop a partnership-wide approach to the fast-time collation of information about the location and extent of flooding impacts. This should be a collaborative approach between relevant parties including the EA, Local Authorities (Lead Local Flood Authorities), LFB, water companies, and other organisations with information about the location and extent of flooding. This should be based on the nationally recognised definitions of property flooding etc. and/or a common impact assessment methodology. Data based solutions (i.e. merging data held by different organisations) and publicly available / real-time information sharing solutions should be considered.

4.5 Partnership working

Issue: The extent to which organisations undertook pre-emptive and response activity as set out in their commitments in London and Borough level flood response plans is unknown.

Recommendation 13: All partners to reinforce adherence to actions required within London and Borough level multi-agency flood plans. Requirements to be reviewed in next iteration of London Strategic Flood Framework and Borough level Multi-Agency Flood Plans (MAFP).

Recommendation 14: LRF and local authorities (LLFAs) to consider options for more frequent exercising of MAFPs, noting the commitment to deliver and participate in exercises has been a challenge over recent years.

Issue: HM Coastguard queried if their flood rescue team assets might have been useful for these incidents. LFB have national flood advisors who were contacted for this incident and are aware of the availability of flood rescue capabilities of partner organisations and can call on these if required.

Recommendation 15: Review London and Borough level flood plans to ensure details of Fire & Rescue Service flood advisors and their ability to call on partner organisation flood rescue capabilities are included.

Issue: LFB said that support and coordination with partners went well and recommended a review of the process for interacting with other control rooms if they take flood calls normally routed to LFB.

Recommendation 16: LFB and other emergency services to review the process for how they interact with other control rooms if they start to take calls normally routed to the LFB.

Issue: Infrastructure sites should be identified as being at risk of flooding in multi-agency flood plans (for the awareness of all responders) but the site owners themselves need to ensure they are prepared and resilient.

Recommendation 17: Infrastructure sites at risk of flooding should be included in the next revision of Multi-Agency Flood Plans and referenced in the next revision of the London Strategic Flood Framework.

Issue: Regarding the incident at Whipps Cross and Newham Hospitals the joint working between hospitals, St John Ambulance and LAS went well. Once the process was agreed and receiving hospitals identified a management presence and five ambulances were immediately identified to go and support the evacuation. Throughout the night another 9 ambulances joined from St John to support. Good co-ordination and patient tracking. It felt like it took a long time to get the process up and running with the ask of the LAS not clear from the outset. This is understandably difficult as patients had to be identified, processed for discharge and accepted at receiving hospitals. Once the decision was made the support started almost immediately.

Recommendation 18: LAS, NHS and St John Ambulance to develop/revise process for joint working in support of hospital patient transfer based on good practice from this incident.

Issue: The long-term constraints of drainage systems and the short term / pre-emptive clearance of trash screens and gulleys was felt to require a review.

Recommendation 19: Local authorities (Lead Local Flood Authorities) to work with Environment Agency, Thames Water and Transport for London to confirm roles, responsibilities and arrangements in place for the clearance of trash screens and gulleys ahead of and/or during heavy rainfall events. This should include

consideration of known drainage infrastructure constraints and be informed by the findings of Flood and Water Management Act 2010 Section 19 flood investigation reports.

Issue: Following a request for EA assistance with pumping equipment for the hospital basement, it took several hours for LFB to get back to the EA with information requested about the hospital basement (25th July) in order to ensure the EA could take a suitable pump and enough pipe work. This delayed attendance at the hospital.

Recommendation 20: LFB and EA to confirm arrangements / procedure for requesting assistance with pumping equipment, to include the information required for the EA to determine the equipment required.

Issue: Local authorities would like clarification on the legislation / duties that apply to Thames Water in response to surface water flooding and surcharging into/from the sewage network, this will help clarify Thames Water's responsibilities for response arrangements, decontamination / recovery and insurance liability.

Recommendation 21: Thames Water and local authorities to arrange a meeting to discuss liability, roles and responsibilities in relation to surface water flooding and surcharging into and from sewers.

4.6 Request for sandbags

Issue: Local Authorities do not hold extensive stocks of sandbags, these are mainly held for use in small scale critical business as usual emergencies and require a lead in time for collection, distribution and set up. Due to the speed of flash flooding and impacts on the travel network it may not be feasible to deploy this and/or for mutual aid to be effective. Boroughs may also have a different approach to the use and supply of sandbags. This meant that local authorities were not well placed to be able to support the London Fire Brigade's request for support with the provision of sandbags.

Recommendation 22: Local authorities to promote households at flood risk to have their own flood preparedness measures in place and to not rely on local authorities being able to provide support. To consider highlighting where sandbags might / might not be useful in public information on LLFA websites, and in Multi-Agency Flood Plans.

Recommendation 23: Local authorities, Environment Agency, and London Fire Brigade to collaborate on guidance for LFB incident commanders on the appropriate/inappropriate uses for sandbags in surface water flood events.

4.7 Public communications

Issue: It was thought there would be benefit from public communications coming from a central point on behalf of all responders i.e. the London Resilience Communication Group (LRCG). It seemed social media was the main/only method of public communications in this instance. It was noted that the LRCG would usually be led by the police by default or by the lead agency for the incident.

Recommendation 24: Develop a rapid public facing communications plan with all stakeholders. Reference: the same action was agreed at the 3rd of August 2021 Surface Water Flooding Summit convened by the Deputy Mayor for the Environment & Energy and the Deputy Mayor for Fire & Resilience.

Recommendation 25: Local authorities to consider championing the 30 days 30 ways campaign in September to promote community and personal resilience.

Issue: It was noted that Environment Agency flood alerts and warnings cover fluvial, tidal and in some areas groundwater flood risk. Therefore there is no bespoke surface water warning system other than Met Office weather warnings, this was acknowledged as a gap that needed to be picked up in public comms.

Recommendation 26: Local Authorities (Lead Local Flood Authorities) and Met Office to consider the approach to flood warning information / public communications for areas at risk of surface water flooding only and therefore not in receipt of EA flood alerts and warnings. Environment Agency to help support this work.

Issue: Thames Water's customer messaging wasn't as clear as it could have been, there was inconsistency between their messaging and Boroughs which may have caused confusion to customers.

Recommendation 27: Thames Water and Local Authorities (Lead Local Flood Authorities) to work together to ensure a consistent approach to public messaging / messaging to customers.

4.8 Call/control centres

Issue: Residents inform a variety of agencies about flooding and it's important this information is shared early on to aid the response.

Recommendation: See recommendation 11 above.

4.9 Tactical/Operational response

No Partnership recommendations arising from this section of the debrief. See Annex B for details of good practice and issues raised.

4.10 Pumping

No Partnership recommendations arising from this section of the debrief. See Annex B for details of good practice and issues raised.

4.11 Emergency shelter/accommodation

Issue: Rest centre location was sub-optimal with limited disabled access and no accessible toilets.

Recommendation 28: Local authorities and British Red Cross to work together to establish suitable standards for Rest Centres including disabled access and accessible toilets.

4.12 Recovery

Issue: Good engagement between MHCLG and LRG on recovery funding issues.

Recommendation 29: MHCLG and London Resilience Group to continue to engage on any further recovery issues.

4.13 Infrastructure/drainage

No Partnership recommendations arising from this section of the debrief. See Annex B for details of good practice and issues raised.

4.14 Community resilience

Recommendation: See recommendations 24 and 25 above.

4.15 Water pumping stations

Issue: Thames Water have pumping stations in low lying locations. The Local Authority representative asked if Thames Water would consider allowing competent Local Authority staff to attend to rectify issues at pumping stations where required if they can attend more quickly than requesting a Thames Water response.

Recommendation 30: Local Authorities and Thames Water to discuss the potential for Local Authority staff to attend Thames Water pumping stations in low lying locations to rectify issues where this would be faster than a Thames Water response.

Annex A: Debrief aim and participants

The debrief was held on Thursday 12th July via Microsoft Teams.

Aim

To identify London Resilience Partnership strategic lessons to inform and improve future emergency response activities in relation to flooding.

The intent is to arrange lessons into the following categories. Lessons may fall into more than one category:

- a) To inform further Mayor of London / Deputy Mayor for Environment & Energy / Deputy Mayor for Fire & Resilience meetings to review recent flood incidents and ensure everything possible is being done to prevent and reduce the impact of flooding in London.
- b) Quick wins (e.g. improvements or resolution in the next four weeks) in anticipation of further severe weather events later this summer.
- c) For inclusion in the London Resilience Partnership learning and improvement process.
- d) For internal (individual organisational) learning only.

Participants

| Name | Organisation |
|--------------------|--|
| Carol Syme | Affinity Water |
| Nadine Benson | British Red Cross |
| Martin Fry | British Transport Police |
| Darsha Gill | Environment Agency |
| Harry Williamson | Environment Agency |
| Jemma Hey | Environment Agency |
| Matthew Higginson | Environment Agency |
| Mary-Clare Walsh | Greater London Authority |
| James Bone | Greater London Authority - London Situational Awareness Team |
| Denise Prieto | London Borough of Hammersmith & Fulham, representing Kim Smith (CEO and London Local Authority Gold (LLAG) for 12 th July |
| Terry Leach | Her Majesty's Coastguard |
| Chris Begley | Local Authority representative, Kingston upon Thames |
| David Gordedo | London Ambulance Service |
| Patrick Goulbourne | London Fire Brigade |
| Matthew Herrington | London Fire Brigade |
| Jeremy Reynolds | London Resilience Group (Chair) |
| Toby Gould | London Resilience Group (LRG Representative) |
| Rowena Procter | London Resilience Group (Secretariat) |
| Beth Denton | London Resilience Group (Secretariat) |
| Mike Garratt | London Trams |
| John Hammond | Met Office |
| Peter Boorman | NHS England & NHS Improvement (London) |
| Katy John | NHS England & NHS Improvement (London) |

LONDON RESILIENCE

| | |
|----------------|----------------------|
| Beth Reeves | Thames Water |
| James Lamb | Thames Water |
| Linda Bennett | Thames Water |
| Helena Garrick | Transport for London |

Annex B: Issues and recommendations submitted in advance of debrief

| No. | Partner raising | What went well | What didn't go well | Proposed recommendations / key considerations | Final recommendations |
|--------------------------|-----------------|---|---|---|--|
| Weather warnings | | | | | |
| 1 (12 th) | Met Office | The Yellow (Medium Impact) weather warning was issued ahead of the flooding (08:54 in the morning) and was valid from 10:00 to 23:59. | There is an argument that an Amber warning could have been issued when organisation of the showers and thunderstorms started to develop. This was not done and is part of an internal assessment and verification. Would a different response have taken place if an Amber warning had been issued, even though a medium impact warning was in place? | The Met Office Advisor sent a message in the morning highlighting the risk of heavy showers and thunderstorms and the issuing of a medium impact warning. As it was a yellow warning no partnership call was put into place. Was the warning taken seriously enough or was it considered as 'only a yellow'? Would the issuing of an Amber lead to more discussion and preparation. Whether Yellow or Amber, both warnings were medium impact so should they have a similar response? | <ol style="list-style-type: none"> Interim action to take a more proactive stance on tripartite calls between Met Office, Environment Agency and LRG on yellow warnings for lower likelihood but with higher impacts. The calls consider what advice to issue to the Partnership by email and whether it would be beneficial to hold a pre-emptive Partnership call. Enhanced Partnership coordination to be established on all amber weather warnings or amber Flood Guidance Statements. Longer term action to review triggers and actions in the Strategic Flood Framework and Severe Weather and Natural Hazards Framework, including triggers for Partnership calls and Strategic Coordinating Groups (SCG). Longer term action to review the timing of warnings and messages from the Met Office and Environment Agency to consider if it is possible to issue earlier information to support earlier decision making regarding the placement of response resources (e.g. a the time when LFB determine allocation of resources across London at the start of a day or night shift). |
| 2 (12 th) | Thames Water | | Whilst we had instigated our adverse weather process forecast prior to the 12th we weren't able to | Creating a playbook which will include. 3) An enhanced adverse weather process to ensure a more proactive deployment of | No Partnership recommendation. Internal learning for Thames Water. |

| No. | Partner raising | What went well | What didn't go well | Proposed recommendations / key considerations | Final recommendations |
|-----------------------|------------------------|--|---|--|--|
| | | | predict or prepare for the intensity of the rainfall, for example the forecast was for 20mm but Met office report 47mm fell. | resources in response to Yellow/Amber warnings. | |
| 3 (12 th) | TfL (Surface non rail) | | The difference between the weather forecast and the actual rainfall was difficult to manage | | No Partnership recommendation. |
| 4 (25 th) | Met Office | The forecast for heavy showers and thunderstorms went well with a yellow warning in place in plenty of time. The escalation to an Amber warning for the area most likely to see significant impacts also went well. Good early discussions took place between the Met Office and the London Resilience Group to agree the need for a teleconference. | | | No Partnership recommendation. |
| 5 (25 th) | EA | | | Is there anything more responders could do once a weather warning is received e.g. put extra staff on standby, check resources/equipment, issue some key messages, check vulnerable residents etc. | 5. Longer-term action for individual organisations to review the actions they take in response to the triggers / levels of weather and flood warnings in the London Strategic Flood Framework and Severe Weather & Natural Hazards Framework. |
| 6 | Local Authorities | | The nature of flash flooding is such that it is difficult for anyone to develop absolute plans to prevent it and then respond, where required, in | | No Partnership recommendation. |

| No. | Partner raising | What went well | What didn't go well | Proposed recommendations / key considerations | Final recommendations |
|------------------------------------|-----------------|--|--|--|---|
| | | | <p>timeframes that will reduce impacts. During each incident there were a number of examples of water coming up the sewage network (volume of rainwater) which makes it almost impossible to stop. The timings will also affect how residents and businesses deal with this and the response required as more homes are vacant during the day and could require help support in the evenings and businesses closed in evenings and more at risk of flooding.</p> | | |
| Notification and activation | | | | | |
| 7 (12 th) | BRC | <p>We were able to quickly stand up and deploy our volunteers, and arrived on scene just as the RC opened.</p> | | | No Partnership recommendation. |
| 8 (12 th) | LFB | | | <p>Reviewing declaration of a MI at tactical or strategic level.</p> | <p>6. Action for LRF Blue Lights Panel to consider arrangements for regional declaration of Major Incidents at Tactical or Strategic level including the declaration of Major Incident stand-down.</p> |

| No. | Partner raising | What went well | What didn't go well | Proposed recommendations / key considerations | Final recommendations |
|---------------------------|-----------------|---|---------------------|---|--------------------------------|
| 9 (12 th) | EA | Major incident was declared quickly by LFB and a partnership call was scheduled for 20:30. We offered our support but with the fast pace nature of this incident meant there was little we could do in mitigation and it was focussed on response and recovery. | | | No Partnership recommendation. |
| 10 (12 th) | MHCLG | Prompt notification of pre-event partnership calls on both occasions was helpful. | | | No Partnership recommendation. |
| 11 (25 th) | NHS | Quick response from LRG manager on-call to request for multi-agency assistance (LFB support needed to assist with pumping water from the site and to evacuate patients in the absence of lifts). | | | No Partnership recommendation. |
| 12 (25 th) | NHS | NHS London on-call responses stood up quickly and effectively | | | No Partnership recommendation. |
| 13 (25 th) | NHS | Quickly established battle rhythm for Gold and Silver meeting's (attended by NHSL On-call Team) | | | No Partnership recommendation. |

| No. | Partner raising | What went well | What didn't go well | Proposed recommendations / key considerations | Final recommendations |
|---------------------------|-----------------|---|---|--|---|
| 14 (25 th) | NHS | | There were some incorrect contact details issued for NHS partners that took some time to navigate around | Escalated to the NHSL team that issued the contact sheet for action and has now been addressed | No Partnership recommendation. Internal learning for NHS England & NHS Improvement (London). |
| 15 (25 th) | Thames Water | | Whilst we tried to contact all impact boroughs, we were unable to get through to all of them, this was a combination of out of hours contact centres not being able to pass a message on or calls not being returned. We used contact details held in the borough profiles. | Continue to build playbook to cover: 1) Proactively contacting and offering support to impacted Boroughs in parallel to our reactive response 4) Ensure boroughs have correct contact details and point of escalation. | 7. Investigate ways to improve the fast time communications between Thames Water, Lead Local Flood Authorities and other partners. This should include confirmation of who Thames Water should ask for when making contact with Local Authorities during the response to an incident (e.g. LALO or Duty Silver) and vice-versa. |
| 16 (25 th) | Thames Water | We planned for adverse weather increasing our resources. | Whilst we had instigated our adverse weather process forecast prior to the 12th we weren't able to predict or prepare for the intensity of the rainfall, for example the forecast was for 20mm but Met office report 47mm fell. | Continue to build playbook to cover: 3) An enhanced adverse weather process to ensure a more proactive deployment of resources in response to Yellow/Amber warnings. | No Partnership recommendation. Internal learning for Thames Water. |
| 17 (25 th) | MPS | | MI was circulated over ESICTRL, but potentially could have been done quicker. | | No Partnership recommendation. Internal learning for MPS. |
| 18 (25 th) | Met Office | | | Following this incident and the previous one (12th July) I would recommend a review of the framework triggers. | See recommendation 2. |
| 19 (25 th) | EA | Major incident was declared and partnership calls were scheduled. | | | No Partnership recommendation. |

| No. | Partner raising | What went well | What didn't go well | Proposed recommendations / key considerations | Final recommendations |
|------------------------------------|-----------------|--|---|---|---|
| 20 (25 th) | EA | We had put additional staff on standby for the weekend based on the weather forecasts we were receiving several days before the incident. We had also cleared trash screens and any obstructions in rivers prior to the rainfall so impacts from rivers was kept to a minimum. | It took our field operatives a long time to get to the Beverley Brook in South London due to standstill traffic. | | No Partnership recommendation. Internal learning for Environment Agency. |
| 21 (25 th) | NHS | | Questionable recognition of the major incident status of the trust by some partners - in terms of the escalation of their services to support | Ensure that major incident declaration by an organisation results in the necessary support being provided where required. [NHS noted during the debrief this comment wasn't necessarily in relation to partners on the debrief call, more to other partners and in relation to the long duration Barts hospital incident.] | 8. The definition of an internal NHS Major Incident and any specific implications arising from this for external partners should be clarified. |
| Partnership teleconferences | | | | | |
| 22 (12 th) | BRC | The opportunity to attend partnership call was helpful for an understanding of wider impacts and likelihood of other asks coming to us. The call was also helpful for sharing information with our deployed volunteers on safe travel across the city to get to the RC location. | | | Contributes to recommendation 9 below. |
| 23 (25 th) | MPS | LSAS worked well to draw people's attention to the incident. | | | No Partnership recommendation. |

| No. | Partner raising | What went well | What didn't go well | Proposed recommendations / key considerations | Final recommendations |
|---------------------------|-----------------|--|---|--|---|
| | | Partnership call was within 2hrs and follow up calls were not deemed necessary. | | | |
| 24 (25 th) | MPS | Timeliness of call, within 2hrs of declaration. The partnership call was needed as the NHS internal flooding at two Hospitals was not known across agencies. Therefore the call provided situational awareness. | Missed a couple of Partners from call. TfL for example. Although Gold badge had been called to scene by duty officer, so the potential impact for buses and the road were known across TfL. | | Contributes to recommendation 9 below. |
| 25 (25 th) | EA | | General lack of local authority engagement or representation on partnership calls. | London Boroughs to be represented on partnership calls. | Contributes to recommendation 9 below. |
| 26 (25 th) | NHS | Continued support from LRG via phone in the decision on whether further partnership calls were required - which was very much at the discretion of the NHS for the issues being faced | | | No Partnership recommendation. |
| 27 (25 th) | NHS | Availability of additional resources - such as volunteers via Red Cross was made clear if required. | | | No Partnership recommendation. |
| 28 (25 th) | EA | | We had a discussion with London Resilience regarding the forecast at around 16.30. At this point | Earlier call for the partnership teleconference on the amber met office warning – this should be a joint EA, Met | In hindsight, the Group considered it would have been worthwhile to hold the 21.00 call even if short and only of |

| No. | Partner raising | What went well | What didn't go well | Proposed recommendations / key considerations | Final recommendations |
|---------------------------|-----------------|---|---|---|---|
| | | | <p>a partnership call should have been agreed and arranged as there was an amber met office warning in place. This didn't happen and instead we were reacting.</p> <p>A London Resilience teleconference was organised for 18:30, there was another one scheduled for 21:00 which was cancelled at 20:55 for an unknown reason.</p> | Office and London Resilience Group decision. | <p>relevance to a few partner agencies to discuss the ongoing hospital incidents.</p> <p>See recommendations 1 and 2 above.</p> <p>It was noted the communication to the Partnership should have been clearer and included the rationale to stand down the second call at 21.00 on 25th July. Internal learning point for LRG.</p> |
| 29 (25 th) | EA | | Seemed to be a reluctance to establish TCGs or SCGs. | | It was noted that Partners represented on Partnership calls were asked if further meetings or a higher level of co-ordination was required – no request was made. Linked to recommendations 1 and 2 above to review triggers for action. |
| 30 (25 th) | NHS | | There didn't appear to be prioritisation of issues at the 1830 partnership meeting - when the NHS had already alerted LRG to the issues at Barts, with lots of focus on the flooding of a roundabout. | Potential to provide the chair of the partnership meeting with a briefing/report of the issues before the meeting starts to allow for prioritisation. | 9. Investigate the potential to provide the Chair of the Partnership call with a fuller briefing/report of the issues before the meeting starts to allow for prioritisation. E.g. Asking Partners to report issues to raise for discussion at the meeting if time permits in advance of the call. |
| 31 (25 th) | MPS | Good level of engagement from partners on the call, resolved some of the blockages that were occurring elsewhere. | | No significant concerns although maybe worth thinking about, given this will be increasingly frequent, who should lead partnership response to such incidents in terms of chairing calls, leading debriefs etc. | Contributes to recommendation 9 below. |

| No. | Partner raising | What went well | What didn't go well | Proposed recommendations / key considerations | Final recommendations |
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| | | Brought reassurance that London was still operating. | | | |
| 32 (25 th) | Public Health England | | As with previous partnership calls, I was expecting PHE to be invited so was surprised when I'd received a message from NHS01 to say that they had dialled into an SCG. I later contacted LRG Duty Manager to ask if there was anything needed from us and she confirmed that the call had taken place to discuss NE London only and that nothing was needed from PHE. The message from LRG did clearly state it was to discuss the MI at Charlie Brown but I was surprised that it didn't look at London as a whole as there were impacts being reported across London in the media | I wonder if on this occasion there was merit in a full partnership call because of the reports in the media? | See recommendations 1 and 2 above. |
| 33 | Local Authorities | | Participation by Local Authorities in partnership teleconference needs review. | Clarification requested on attendance at short notice/out of hours partnership calls. Each Local Authority will decide who will attend a partnership call and this is normally a senior person within the organisation but for short notice/out of hours an indication of appropriate standby levels with LAs would be useful (down to emergency planning level) to ensure participation from all requested boroughs. | Based on comments at issue numbers 22, 24, 25, 31, 33: 10. Develop standard arrangements for Partnership calls to mirror those for SCG. Include standing invitation to all Cat 1s and key agencies with others informed and able to request participation. For local authorities, this should include the participation of LLAG and one |

| No. | Partner raising | What went well | What didn't go well | Proposed recommendations / key considerations | Final recommendations |
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| | | | | | <p>representative for each affected local authority.</p> <p>11. During Partnership calls representatives should be asked to share their contact details (via chat function and/or via email) with other representatives to aid communication between participants after the call.</p> |
| Impact assessment | | | | | |
| 34 (25 th) | EA | | <p>Collation of information and impacts was difficult and didn't seem coordinated, perhaps because there was no formal TCG or SCG established.</p> <p>No central organisation collating impact information to get an understanding of scale.</p> | <p>If a more formal command and control structure was established (i.e. SCG/TCG) information could've been collated and disseminated more consistently.</p> <p>Consider using the London Situational Awareness Team in the GLA to collate flooding impact information from flooding to enhance shared situational awareness.</p> | <p>12. Commission a project to develop a partnership-wide approach to the fast-time collation of information about the location and extent of flooding impacts. This should be a collaborative approach between relevant parties including the EA, Local Authorities (Lead Local Flood Authorities), LFB, water companies, and other organisations with information about the location and extent of flooding. This should be based on the nationally recognised definitions of property flooding etc. and/or a common impact assessment methodology. Data based solutions and publicly available / real-time information sharing solutions should be considered.</p> |
| 35 | Local Authorities | | <p>LAs are not notified of every flooding location by residents and LFB appear to be the main contact point used by residents when flash flooding is affecting properties. The affected boroughs struggled to obtain this data from LFB, so that adequate and timely resources and rest centres</p> | <p>The Partnership needs a way to collectively and quickly capture data held by all partners to ensure that efforts are directed towards areas most in need, this could also include actions / issues taken by partners at each location.</p> | <p>See recommendation 11 above.</p> |

| No. | Partner raising | What went well | What didn't go well | Proposed recommendations / key considerations | Final recommendations |
|----------------------------|---------------------------|----------------|--|---|--|
| | | | could be established. LA appreciates that LFB was faced with an unprecedented volume of calls during the flood periods and this may have affected its ability to share data. | | |
| Partnership working | | | | | |
| 36 (25 th) | EA | | Partners didn't appear to be referring to multi agency flood plans or Strategic Flood Framework. | All responders should refer to the strategic flood framework when responding to flooding incidents. Local authorities should refer to their multi agency flood plans when preparing for and responding to flooding incidents. These plans are rarely used it seems but could make response more coordinated if they're used. More frequent exercising of multi-agency flood plans - including local authority internal only training sessions to raise awareness of what the multi-agency flood plan contains. | 13. All partners to reinforce adherence to actions required within London and Borough level multi-agency flood plans. Requirements to be reviewed in next iteration of London Strategic Flood Framework and Borough level Multi-Agency Flood Plans (MAFP). 14. LRF and local authorities (LLFAs) to consider options for more frequent exercising of MAFPs, noting the commitment to deliver and participate in exercises has been a challenge over recent years. |
| 37 (12 th) | TfL (Surface non rail) | | | Agree a level of resource with our contractors for the forecasted alert status i.e. Green no action required, Yellow alert our contractors and confirm existing resources include pump station status. Amber consider instructing 1 no additional resource, Red consider instructing 2 no additional resources. | No Partnership recommendation. Internal learning for Transport for London. |
| 38 (12 th) | HM Coastguard | | | Were any flood rescue teams used during the incident? HM Coastguard has flood teams as declared assets, which are available in flood search & rescue. I do not | 15. Review London and Borough level flood plans to ensure details of Fire & Rescue Service flood advisors and their ability to call on partner organisation flood rescue capabilities are included. |

| No. | Partner raising | What went well | What didn't go well | Proposed recommendations / key considerations | Final recommendations |
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| | | | | know if they would have had a value in this incident or even if they were considered. | |
| 39 (12 th) | BRC | Good communication with Westminster from initial request to stand down. | | | No Partnership recommendation. |
| 40 (12 th) | LFB | Support and coordination with partners | | Review the process how we interact with other control rooms if they start to take calls normally routed to the LFB. | 16. LFB and other emergency services to review the process for how they interact with other control rooms if they start to take calls normally routed to the LFB. |
| 41 (12 th) | Thames Water | Our onsite presence which was coordinated with Westminster Borough and was manned by both customer and operational representatives. | | | No Partnership recommendation. Internal learning for Thames Water. |
| 42 (12 th) | Thames Water | The collaborative working to help support residents | Whilst we were responding to customers reactively, we didn't offer support to Boroughs directly. | Creating a playbook which will include. 1) Proactively contacting and offering support to impacted Boroughs in parallel to our reactive response, 2) Clear prepared customer messaging and an improved customer response. We intend to work with the boroughs to ensure our proactive messaging is aligned. 3) An enhanced adverse weather process to ensure a more proactive deployment of resources in response to Yellow/Amber warnings. | See issues 15 and 16 above, and issue 61 below. |
| 43 (15 th) | TfL Underground | Coordination of response. | | | No Partnership recommendation. Internal learning for Transport for London. |

| No. | Partner raising | What went well | What didn't go well | Proposed recommendations / key considerations | Final recommendations |
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| 44 (12 th) | TfL (Surface Rail - London Overground) | Coordination with NR and LU – we agreed with NR which areas should be prioritised for repair and LU agreed to prioritise LO services (if Gunnersbury area ongoing repairs were to result in allowing only either LO or LU services, but not the other) | | | No Partnership recommendation. Internal learning for Transport for London. |
| 45 (25 th) | EA | | | Infrastructure sites should be identified as being at risk of flooding in multi-agency flood plans (for the awareness of all responders) but the site owners themselves need to ensure they are prepared and resilient. | 17. Infrastructure sites at risk of flooding should be included in the next revision of Multi-Agency Flood Plans and referenced in the next revision of the London Strategic Flood Framework. |
| 46 (25 th) | LAS | Incident at Charlie Browns roundabout - joint working with emergency service colleagues and LALO | | | No Partnership recommendation. |
| 47 (25 th) | LAS | Following JESIP framework | | | No Partnership recommendation. |
| 48 (25 th) | LAS | Incident at Whipps Cross and Newham Hospitals - joint working between hospitals; St John Ambulance and LAS. Once the process was agreed and receiving hospitals identified a management presence and 5 ambulance immediately | Felt like it took a long time to get the process up and running with the ask of the LAS not clear from the outset. This is understandably difficult as patients had to be identified, processed for discharge and accepted at receiving hospitals. Once decision was made the | | 18. LAS, NHS and St John Ambulance to develop/revise process for joint working in support of hospital patient transfer based on good practice from this incident. |

| No. | Partner raising | What went well | What didn't go well | Proposed recommendations / key considerations | Final recommendations |
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| | | identified to go and support the evacuation. Throughout the night another 9 ambulances joined from St John to support. Good co-ordination and patient tracking. | support started almost immediately. | | |
| 49 (25 th) | LAS | Incident at Charlie Browns roundabout - joint working with emergency service colleagues and LALO | | | Duplication of issue 47 above. |
| 50 (25 th) | CoLP | LFB and Skanska were expedient in their arrival. | | | No Partnership recommendation. |
| 51 (25 th) | NHS | Accessibility of partnership colleagues for advice when needed was excellent | | | No Partnership recommendation. |
| 52 (25 th) | Thames Water | | Borough reported difficulty in getting in touch with us. | Review how we contact the boroughs we encountered issues with to ensure correct route is being followed. Continue to build playbook to cover: 1) Proactively contacting and offering support to impacted Boroughs in parallel to our reactive response 4) Ensure boroughs have correct contact details and point of escalation. | See issues 15, 16 and recommendation 6 above. |
| 53 (25 th) | MPS | Liaison with LRG | | | No Partnership recommendation. |
| 54 (25 th) | MPS | | One or two instances where the communication between partners on the ground wasn't quite right | | Where related to the effectiveness of the Partnership call, linked to issues 22, 24, |

| No. | Partner raising | What went well | What didn't go well | Proposed recommendations / key considerations | Final recommendations |
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| | | | e.g. wasn't clear that police, EA and LA talking to each other at the scene of the flooding until we resolved that through the partner call (but the partner call worked in that respect). | | 25, 31, 33 and recommendation 09 above. Operational / on the ground issue not covered within the remit of this debrief process. |
| 55a (25 th) | EA | | We asked the Royal Borough of Kingston to clear some trash screens ahead of the forecast rainfall which we had spotted blocked on monitoring equipment, which they declined to do. | Local authorities to take pre-emptive measures on forecast rainfall to clear trash screens or gullies. [During the debrief the local authority representative explained that where alerts and warnings are received, those with the responsibility to clear trash screens will clear them. The specific point in relation to Kingston is being considered between Kingston upon Thames and the EA. On the issue raised the trash screen was visited but it was decided it was not necessary to clear it on that occasion.] | 19. Local authorities (Lead Local Flood Authorities) to work with Environment Agency, Thames Water and TfL to confirm roles, responsibilities and arrangements in place for the clearance of trash screens and gullies ahead of and/or during heavy rainfall events. This should include consideration of known drainage infrastructure constraints and be informed by the findings of Flood and Water Management Act 2010 Section 19 flood investigation reports. |
| 55b | Local Authorities | | LAs don't always know condition of gulleys, level of water at current time of warning etc. | LLFAs to work with Thames Water to consider this issue. [During the debrief TW said it's quite short term to think about clearing gulleys in fast time, but a more proactive approach as part of business as usual is required. Especially where there are known constraints and a partnership approach is required.] | See recommendation 18 above. |
| 56 (25 th) | EA | LFB proactively requested our assistance with the hospital. | It took several hours for LFB to get back to us with information we had requested about the hospital basement (Sunday night), in order to ensure we could bring a suitable pump and enough pipe | | 20. LFB and EA to confirm arrangements / procedure for requesting assistance with pumping equipment, to include the information required for the EA to determine the equipment required. |

| No. | Partner raising | What went well | What didn't go well | Proposed recommendations / key considerations | Final recommendations |
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| | | | work. This delayed our attendance at the hospital as we couldn't leave the depot until we knew what type of pump was required. | | |
| 57 (25 th) | Public Health England | It was good to be able to speak directly to the Duty LRG to ascertain what was happening. | | | No Partnership recommendation. |
| 58 | Local Authorities | | LA Boroughs would like clarification on the legislation / duties that apply to Thames Water in response to surface water flooding and surcharging into/from the sewage network, this will help clarify Thames Water's responsibilities for response arrangements, decontamination / recovery and insurance liability. Example: Camden Council have a local area affected by sewage contamination that resulted from planned sewage system works and have had to use external contractors to help with decontaminating public locations. Camden would welcome clarification of Thames Water's liability and if part of the recovery/decontamination costs should be met by them. | | 21. Thames Water and local authorities to arrange a meeting to discuss liability, roles and responsibilities in relation to surface water flooding and surcharging into and from sewers. |

| No. | Partner raising | What went well | What didn't go well | Proposed recommendations / key considerations | Final recommendations |
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| Request for sandbags | | | | | |
| 59 | Local Authorities | | Local Authorities do not hold extensive stocks of sandbags, these are mainly held for use in small scale critical BAU emergencies and require a lead in time for collection, distribution and set up. Due to the speed of flash flooding and impacts on the travel network it may not be feasible to deploy this and or for mutual aid to be effective. | Boroughs may also have a different approach to the use and supply of sandbags, so a consistent approach to all London LA might be helpful. The partnership should look at smarter and more localised solutions, which link to more resilient and better prepared residents for disruptive incidents. | <p>22. Local authorities to promote households at flood risk to have their own flood preparedness measures in place and to not rely on local authorities being able to provide support. To consider highlighting where sandbags might / might not be useful in public information on LLFA websites, and in Multi-Agency Flood Plans.</p> <p>23. Local authorities, Environment Agency, and London Fire Brigade to collaborate on guidance for LFB incident commanders on the appropriate/inappropriate uses for sandbags in surface water flood events.</p> |
| Public communications | | | | | |
| 60 (12 th) | LFB | Supporting the wider pan London communication strategy | Communicating the dangers of flood waters whilst news outlets show something different to the risks. (News feeds showing vehicles driving through flood water gives a false impression that it is safe to do so.) | [During the debrief the EA noted the information gap for surface water only flood risk areas because EA flood warnings and advice don't reach these areas.] | <p>It was noted there was an action arising from the 3rd of August 2021 Surface Water Flooding Summit convened by the Deputy Mayors for the Environment & Energy and Fire & Resilience to develop a rapid public facing communications plan with all stakeholders.</p> <p>24. Develop a rapid public facing communications plan with all stakeholders.</p> <p>25. Local authorities to consider championing the 30 days 30 ways</p> |

| No. | Partner raising | What went well | What didn't go well | Proposed recommendations / key considerations | Final recommendations |
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| | | | | | <p>campaign in September to promote community and personal resilience.</p> <p>26. EA, Local Authorities (Lead Local Flood Authorities) and Met Office to consider the approach to flood warning information / public communications for areas at risk of surface water flooding only and therefore not in receipt of EA flood warnings and flood risk information.</p> |
| 61 (12 th) | Thames Water | | Our customer messaging wasn't as clear as it could've been, there was inconsistency between our messaging and Boroughs which may have caused confusion to customers | Creating a playbook which will include. 2) Clear prepared customer messaging and an improved customer response. We intend to work with the boroughs to ensure our proactive messaging is aligned. | 27. Thames Water and Local Authorities (Lead Local Flood Authorities) to work together to ensure a consistent approach to public messaging / messaging to customers. |
| 62 (12 th) | TfL Underground | Customer communications The public communication was not a concern and worked as intended. Severe rainfall can be heavily localised, a pan-London approach is not always optimal, in this case London Trams were unaffected by the weather while other areas of London sustained heavy flooding and serious disruption. No other issues, the public comms appeared to work well. | | | No Partnership recommendation. |

| No. | Partner raising | What went well | What didn't go well | Proposed recommendations / key considerations | Final recommendations |
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| 63 (25 th) | NHS | Public comms from the Trust and amplified by NHSL went out early and on various channels | | | No Partnership recommendation. |
| 64 (25 th) | EA | | | Would benefit from comms coming from a central point on behalf of all responders i.e. a multi-agency comms cell. It seems social media was the main/only method of public comms in this instance. | See recommendation 23 above. |
| 65 (25 th) | Thames Water | We were more proactive with customer messaging | | Continue to build playbook to cover: 2) Clear prepared customer messaging and an improved customer response. We intend to work with the boroughs to ensure our proactive messaging is aligned. | See recommendation 26 above. |
| 66 | Local Authorities | | | Communication with residents is key in relation to warning in advance of potential heavy rainfall and good practice they could apply to protect their homes and businesses. Some LAs have good examples of proactivity but this is something that may benefit from a consistent partnership approach, so an agreed model is delivered across all of London. Data sharing by the Met Office on uptake rates for the Met Office App, would help identify areas where this is less used and this would help LAs/Partnership to support areas/communities with flood preparedness and resilience information. | See recommendation 25 above. |
| Call/control centres | | | | | |
| 67 (12 th) | EA | | | Residents don't always contact EA to inform us of surface water flooding, these calls go to Thames Water, Local Authority and/or LFB. It is important this information is shared early on so we can be more | See recommendation 11 above. |

| No. | Partner raising | What went well | What didn't go well | Proposed recommendations / key considerations | Final recommendations |
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| | | | | prepared to assist in the response if we're able to. | |
| Tactical/Operational response | | | | | |
| 68 (12 th) | LFB | Delivering the operational response | | | No Partnership recommendation. |
| 69 (12 th) | Thames Water | We learnt quickly from first weekend and developed proactive response - better 2nd time, including on site presence where previously impacted. | | | No Partnership recommendation. Internal learning for Thames Water. |
| 70 (12 th) | Thames Water | 2639 jobs were carried out reactively across our area as well as supporting customers with clean ups and checking our assets. | | | No Partnership recommendation. Internal learning for Thames Water. |
| 71 (12 th) | TfL (Surface non rail) | Virtual severe weather desk worked well in coordinating contractor resources | | | No Partnership recommendation. Internal learning for Transport for London. |
| 72 (12 th) | TfL (Surface Rail - DLR) | Staff on site; clean up; checking equipment was fit for use, etc. | | | No Partnership recommendation. Internal learning for Transport for London. |
| 73 (12 th) | TfL (Surface non rail) | | Contractor resources in their own control centres at times struggled to cope with the number of events | | No Partnership recommendation. Internal learning for Transport for London. |

| No. | Partner raising | What went well | What didn't go well | Proposed recommendations / key considerations | Final recommendations |
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| 74 (12 th) | TfL (Surface non rail) | | | Agree a level of resource with our contractors for the forecasted alert status i.e. Green no action required, Yellow alert our contractors and confirm existing resources include pump station status. Amber consider instructing 1 no additional resource, Red consider instructing 2 no additional resources. | No Partnership recommendation. Internal learning for Transport for London. |
| 75 (25 th) | CoLP | | No internal on-call facilities manager available at weekends or nights. | Ability to contact a building manager to discuss appropriate response and knowledge of building. | No Partnership recommendation. Internal learning for Transport for London. |
| 76 (25 th) | LAS | | | That business continuity incidents should be exercised more often and including wider partners to explore whether processes are in place work. Often BC exercises are just managed internally but when they occur require external support. | No Partnership recommendation. Internal learning for London Ambulance Service. Transport for London. All organisations to note potential benefits of inviting external stakeholders to participate in internal Business Continuity exercises. |
| 77 (25 th) | NHS | NHS Integrated Care System (ICS) worked collaboratively and well | | | No Partnership recommendation. Internal learning for NHS. |
| 78 (25 th) | EA | | | It perhaps would've been beneficial if LFB had invited us to attend their tactical meetings (at the hospital) so we could feed in directly rather than having messages relayed through several people. | Operational / on-scene issue not covered within the remit of this debrief process. However, the LFB representative noted the Incident Commander on scene should invite the relevant partners to the on-scene Forward Command Post meetings. |
| Pumping | | | | | |
| 79 (12 th) | TfL Underground | | Unable to pump some water away as no appropriate areas to send contaminated water to. | | No Partnership recommendation. Internal learning for Transport for London. |

| No. | Partner raising | What went well | What didn't go well | Proposed recommendations / key considerations | Final recommendations |
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| 80 (12 th) | TfL (Surface Rail - London Overground) | | NR pumping train failure - issues with NR's rolling stock further delayed the reinstatement of the full service on Watford to Euston line. | | No Partnership recommendation. Internal learning for Transport for London. |
| 81 (12 th) | TfL (Surface - Overground) | | | As the infrastructure got completely overwhelmed (as opposed to dealing with a specific issue), there is no simple solution. The entire NR's infrastructure in London (including where LO operates) should be evaluated for the climate change adaptation (floods and heat) and recommendations taken from the resulting proposals. Ideally the infrastructure would see major changes to the existing drainage systems (and protection from the direct sunlight in case of extremely high temperatures). LO can only focus on service provision and operational safety of the passengers and staff during such events. LO also will engage NR on better preparedness for such events (pumps and Delivery Units staff availability) and also wider adaptation measures that would be taken to mitigate the impact. | No Partnership recommendation. Internal learning / long-term infrastructure planning / climate change adaptation issue for Transport for London. |
| 82 (25 th) | NHS | Excellent support from EA when requested to support with pumping equipment 36 hours into the incident | | | No Partnership recommendation. |
| Emergency shelter/accommodation | | | | | |
| 83 (12 th) | BRC | | RC location was sub-optimal. No disabled toilets, limited disabled access. | Recommend considering alternative suitable venues in the area for use as rest centre locations. | 28. Local authorities and British Red Cross to work together to establish suitable standards for Rest Centres including disabled access and accessible toilets. |

| No. | Partner raising | What went well | What didn't go well | Proposed recommendations / key considerations | Final recommendations |
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| Recovery | | | | | |
| 84 (12 th) | MHCLG | Good engagement with national tier on recovery / funding issues / challenges | | LRP colleagues and London Resilience Advisors should continue to engage on recovery issues. | 29. MHCLG and London Resilience Group to continue to engage on any further recovery issues. |
| Infrastructure/drainage | | | | | |
| 85 (12 th) | TfL (Surface Rail - Trams) | The infrastructure coped with the volume of water it had to disperse | | | No Partnership recommendation. |
| 86 (12 th) | TfL (Surface Rail - London Overground) | | The infrastructure got completely overwhelmed - a huge number of issues that NR had to deal with resulted in inability to reinstate the service the same evening or even the following day. | | No Partnership recommendation. Internal learning for Transport for London. |
| 87 (12 th) | TfL Underground | | | Need to work with Thames Water and the Environment Agency to understand whether areas previously identified to surface water flooding have changed following construction work in the vicinity of the railway network. This is already in hand. | No Partnership recommendation (reported as already in hand). |
| 88 (12 th) | TfL (Surface Rail - Trams) | | | We do not discuss the condition of London Brough of Croydon drainage in advance of these events. Possibly something to look into. | No Partnership recommendation. Internal learning for Transport for London. |
| 89 (12 th) | TfL (Surface Rail - Trams) | | | Longer term, enhance existing track and road drainage to mitigate impacts of climate change and increase in severe weather events. | No Partnership recommendation. Internal learning / long-term infrastructure planning / climate change adaptation issue for Transport for London. |
| Community Resilience | | | | | |

| No. | Partner raising | What went well | What didn't go well | Proposed recommendations / key considerations | Final recommendations |
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| 90 | Local Authorities | | | As per point re. public communications, the key to this is ensuring residents and businesses in 'at risk' locations (basements, low lying ground areas) are aware of the risk, informed of increased risk, and supported in advance to deal with water before flooding occurs. This will require funding and a commitment to ensure London is in the best possible state to deal with this. This links to the government emphasis on whole-society resilience. | See recommendations 24 and 25 above. |
| Other issues raised during the debrief meeting - water pumping stations | | | | | |
| 91 | Local Authorities | | | Thames Water have pumping stations in low lying locations. Local Authority representative asked if Thames Water would consider allowing LA competent staff to attend to rectify issues where required more quickly than can be the case when requesting a Thames Water response. | 30. Local Authorities and Thames Water to discuss the potential for Local Authority staff to attend Thames Water pumping stations in low lying locations to rectify issues where this would be faster than a Thames Water response. |

Annex C: Flooding related calls received by London Fire Brigade

The London Fire Brigade Business Intelligence team produced maps to show the distribution of the flooding calls received by LFB Control. For each event there is a 2km hexagon scatter grid of London. More detailed views of the areas with the highest concentrations of calls are also available.

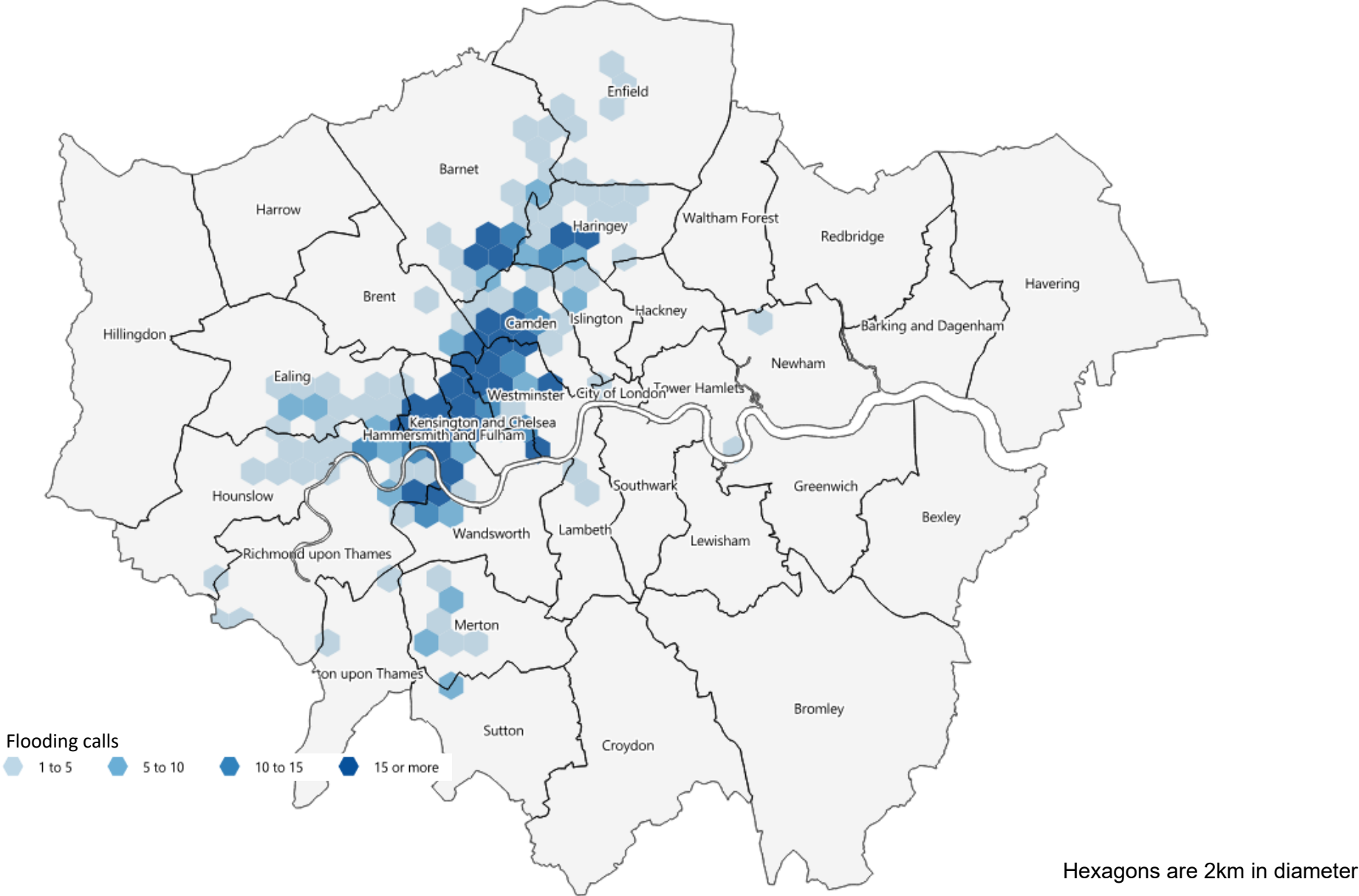
The maps represent calls to LFB Control, not LFB attendance to incidents. The data used is every individual call to 999 that went through to LFB Control during the times shown that included 'flood'. Therefore the terms 'flooding' or 'flooded' are also captured. This doesn't mean it was an actual incident or that LFB necessarily attended.

Mapping is based on the easting and northing attributed to the address given for the incident. Data was queried by looking for the term 'flooding' so e.g. a call could be a result of a call to a boiler flooding rather than as a result of the extreme rainfall event. Also, if multiple calls were received about the same location/flooding incident this would show up as multiple calls on the maps.

It is uncertain if this data includes all calls handled by other Fire & Rescue Services on behalf of LFB and then put through to LFB Control due to the way data is captured in relation to those calls.

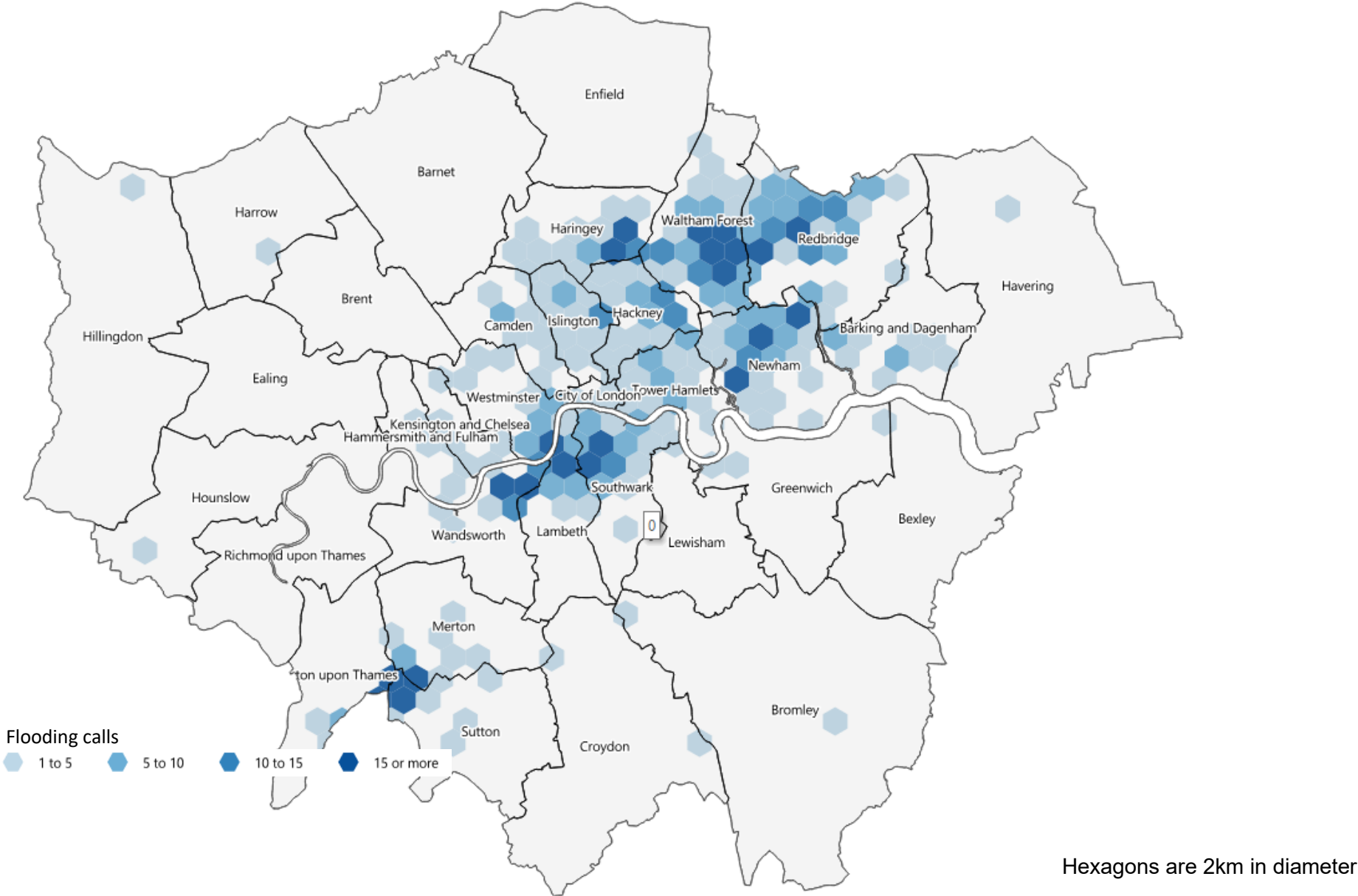
Due to the batch mobilising used during these incidents it is not possible to confirm all of the addresses that were attended or exactly what the incident was that crews responded to upon arrival.

Flooding calls received by LFB between 4pm on the 12th of July and 4pm on the 13th of July 2021



OFFICIAL

Flooding calls received by LFB between 10am on the 25th of July and 5:30am on the 26th of July 2021



OFFICIAL

For information, please contact:

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LONDON RESILIENCE GROUP

The London Resilience Group is jointly funded and governed by the Greater London Authority, London Local Authorities, and the London Fire Commissioner. We are hosted by the London Fire Brigade. Our work, and that of the London Resilience Partnership, is overseen by the London Resilience Forum.

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