

Drought Response Framework

London Resilience Partnership Drought Response Framework

Version 2.0

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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.

Version Control			
Version	Date	Change (owner)	
0.1	Oct 2014	First draft prepared by Thames Water and EA	Sarah Burchard
0.2	Dec 2014	Comments from EA	Sarah Burchard
0.3	Feb 2015	Comments from London Resilience Partnership Drought Response Group and formatting	Sarah Burchard
1.0	Feb 2015	Comments from Thames Water	Sarah Burchard
1.0	Apr 2015	Comments from London Local Authorities, and changes to London Resilience Team contact details	Susan Price, London Resilience Team,
1.0	27 April 2015	Comments from London Fire Brigade	Susan Price
1.0	21 Aug 2015	Comments from EA	Susan Price
1.0	11 Sept 2015	Comments from LRG on behalf of London Resilience Gold Comms Group	Susan Price
2.0	April 2019	Updated format to new LRG template	Hannah Jones
2.0	April	Updates to content including:	Sarah Burchard

Critical Information

Who is the national lead?	Defra
Who is the London co-ordination lead?	London Resilience Group (LRG)
Who initiates the London Drought Response Framework?	Activated following discussion between EA, Water Companies and LRG
Who notifies London partners of a developing drought or a drought?	London Resilience Group (LRG)
What communication methods will be used?	Weekly London Resilience partnership teleconference and London Common Operating Picture (COP)
When will the London Drought Response Framework be reviewed?	Standard review timescale: Every three years Next review no later than 2022
Key Partner responsibilities	<p>EA:</p> <ul style="list-style-type: none"> • Manages natural water resources in England • Monitors the water situation • Produces drought plans • Issue abstraction licences to Water Companies <p>Water Companies:</p> <ul style="list-style-type: none"> • Abstract water under license from the EA to provide drinking water • Required to prepare drought plans <p>Defra:</p> <ul style="list-style-type: none"> • Approves statutory Water Company drought plans • Considers applications from the EA and Water Companies for drought management measures
Who will coordinate the media response?	Water Companies (in liaison with EA)
Delivery of regional measures	LRG will share information with the London Resilience Partnership and coordinate the appropriate response

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1.1 Aim and objectives

This document informs the London Resilience Partnership with regard to the assessment of risk and management of associated impacts during a drought event with a view to:

- Improving understanding of the risks associated with drought, and the need to plan for it.
- As drought emerges, promoting the need for reducing / optimising the use of water resources and therefore strengthening resilience to drought.
- Identifying and, where possible, minimising potential adverse impacts to individuals, groups and organisations.
- Ensuring a co-ordinated and joined-up approach to drought related communications

1.2 Scope

This framework is designed for use in a situation where a prolonged period of below average precipitation is such that there is a high likelihood that progressive drought management measures will be introduced anywhere within the London LRF area.

It should be read in conjunction with the specific drought response plans which are published by the water companies concerned, and which are available on each of the company's websites.

This document does not cover issues relating to interruptions to the public water supply during 'normal' operating conditions.

1.3 Plan Ownership, Authorisation and Administration

The Drought Framework is owned by the London Resilience Forum and is produced and maintained by Thames Water on behalf of the Partnership.

1.4 Audit and Amendments

This framework is subject to review in line with the Partnership work plan, reflecting the alterations made to any Partnership plans as well as the creation of any new plans. All amendments to this document have been cleared by the London Resilience Programme Board on behalf of the London Resilience Forum.

1.5 Publication and Distribution

This framework will be published on [Resilience Direct](#) and the [London Prepared](#) website and is available to all. In addition, copies of the plan will be circulated to all members of the London Resilience Partnership.

1.6 Data Protection

Any requests relating to this document under the Freedom of Information Act should be directed to the Public Liaison Unit at the Greater London Authority.

1.7 Links to other Partnership Documents

This Framework should be used in conjunction with the suite of LRF documents (Available on [Resilience Direct](#) and the [London Prepared](#)).

- Strategic Coordination Protocol
- London Media Emergency Plan
- Strategic Coordination Protocol
- Severe Weather Framework
- Identification of the Vulnerable
- Communications Plan

This document indicates, wherever possible, where these other plans are relevant.

2. Background

2.1 London Context

The residential population of London is around 8.78 million and increasing. This population is augmented by a daily inflow of commuters, tourists and other visitors, the number of which fluctuates according to day, week, season and even year. Official water consumption statistics show that the population of London uses around 161 litres of water per person per day.

London's water supply is derived mainly through surface water abstraction (supported by a series of large bunded storage reservoirs) which makes up around 80% of the overall supply. The remaining 20% is drawn from groundwater. Abstraction from both rivers and groundwater is licensed by the Environment Agency (EA) who seek to balance the human demand for water against the needs of the natural environment.

Overall, the volume of water available for human consumption is a factor of the global water-cycle, which in recent years appears to have become more extreme and less predictable. Indeed, studies have shown that Southeast England has less water available per head than Ethiopia, Syria or Somalia and it is predicted that over the next few decades climate change, population growth and the need for environmental protection could increase the pressure on this resource still further, and in doing so increase the likelihood of a drought event occurring in London.

2.2 Description of Drought

There is no absolute definition of drought. Drought is a situation which occurs within a defined geographical area (catchment) when a prolonged period of below average precipitation leads to low groundwater and soil moisture levels and reduced river flow. The combination of these causes both environmental stress and a significant reduction in the amount of water available for human consumption.

Drought evolves over a period of time – usually months, if not years – during which time there are clear indicators of increasing risk.

Droughts may differ in duration and intensity and these factors will influence the options available for response. The table below sets out the LRFs four main levels of drought which are based on impact. It should be noted that there is no 'accepted' definition of these levels of drought, and that currently the Environment Agency (EA) recognises 'severe' as opposed to 'extreme' drought.

Drought level	Description	Customer impact
0	BaU	None
1	Prolonged dry weather	Water supply as 'normal' but customers are encouraged to voluntarily reduce their water usage.
2	Drought	Water supply as 'normal' but some restrictions on discretionary water using activities.
3	Severe drought	Water supply as 'normal' but with restrictions on some recreational and commercial activities.
4	Extreme drought	Impacts to the 'normal' water supply, including potentially significant reductions in water pressure and/or water quality.
2	Recovering from drought	Water supply as 'normal' but some restrictions on water using activities.
0	BaU	Water supply as 'normal'.

Water supply normal = meeting or exceeding water quality, supply pressure standards with no restrictions on use

2.3 Weather forecasting

Currently the Met Office is only able to provide detailed and accurate weather forecasts for periods of up to five days. It is likely that in the short-term new computer systems and other technological advances will be able to extend this accurate forecasting ability to 10 days but even these timescales are not sufficient to help with accurate drought forecasting because droughts emerge and recede over a period of months or years.

The Met Office also provides 3 month weather predictions to help water companies and the Environment Agency to model ground and surface water levels against a range of possible weather patterns. This in turn helps to manage expectations and guide forward planning. However such long term weather forecasts cannot be relied upon and drought planning requires the assessment of how much rain has fallen in a month on month basis, and monitoring of the situation in line with the reasonable worst case scenario.

2.4 Drought Response Summary

As a potential drought emerges, the EA and water companies will work with national and local government agencies in order to identify risks and possible mitigation, and roll out the introduction of progressive drought management measures. These include:

- Programme of increased public awareness combined with an appeal to reduce water use.
- Temporary Use (i.e. hosepipe) Ban - introduced by individual water companies.
- Drought Permit - granted to water companies by the EA this licenses abstraction from new sources, or modifies existing abstraction licences.
- Ordinary Drought Order (ODO) - granted by the Secretary of State for a period of up to 6 months (extendable) to either the EA or water companies. This allows for changes to the way in which water is held, treated, supplied, used and / or discharged.
- Emergency Drought Order (EDO) - granted to the EA or water companies for a period of up to 3 months (extendable) by Defra. As ODO (above) plus allows water companies to prohibit or limit the use of water or to reduce the pressure at which the piped water is supplied.

2.5 Activation

In the event of a Prolonged Dry Weather situation which is likely to impact on London, this plan will be activated following a joint multi-agency discussion between the EA, the water company (ies) involved and the LRG using the process outlined in the Strategic Coordination Framework.

3. Planning

3.1.1 Roles and responsibilities for water resource management and drought planning

Multi-agency planning for drought takes place on a national, regional and local level with national and regional planning led by the Environment Agency and local planning led by the water company and / or Local Resilience Forum concerned.

National Drought Planning

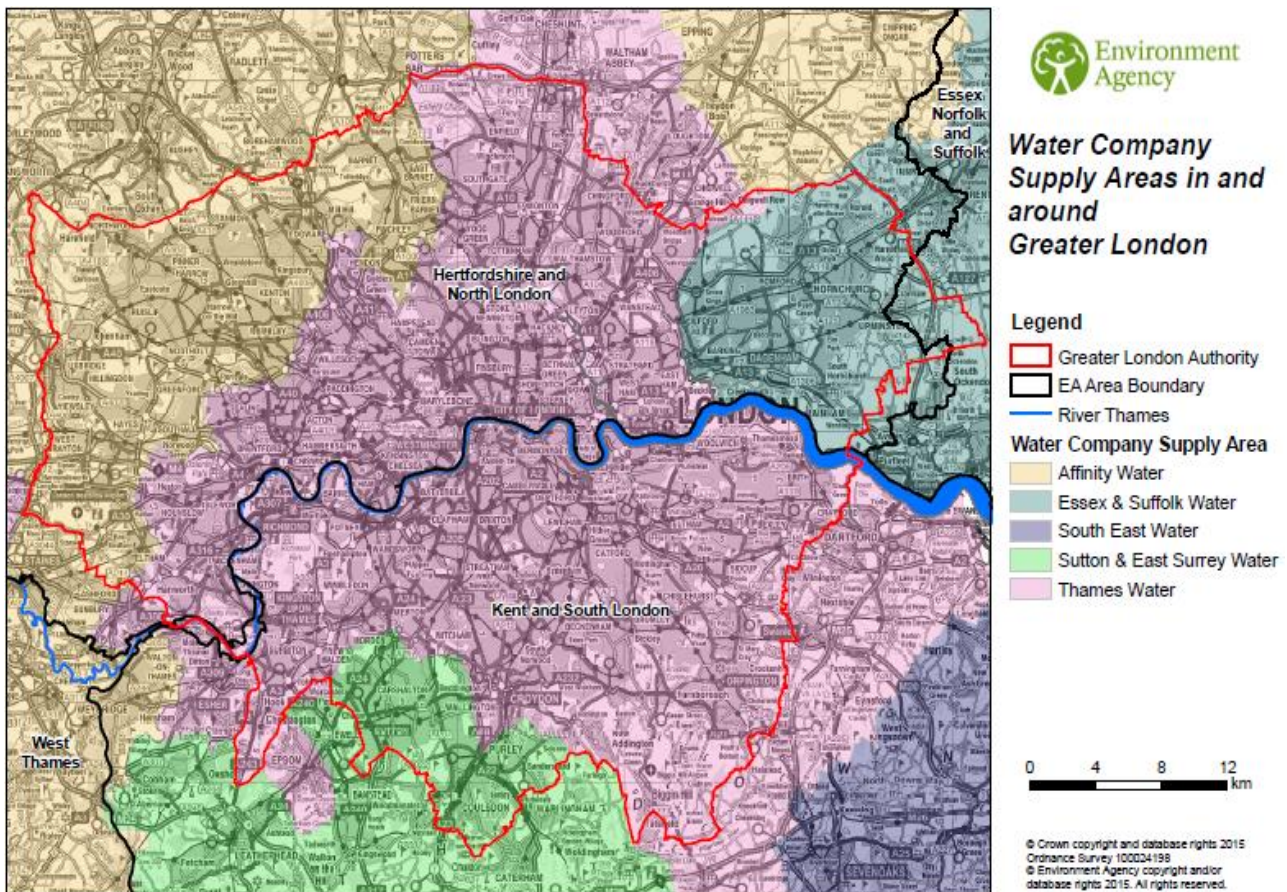
The National Drought Group (NDG) will usually start meeting in the early stages of a drought, i.e. prolonged dry weather level for anywhere in the country. The NDG is responsible for producing a cross-sector view of national drought issues. They will coordinate the delivery of drought management activities, communications and risk mitigation. The group will also address contingency planning and action in relation to water conservation issues, resource sharing and scenario planning for escalation. The group will commission specific working groups to address any issues as necessary.

The NDG will identify issues for decision; for example by Defra on policy matters, Environment Agency on regulatory issues and NDG on communications and contingency planning. The group is chaired by the Chief Executive of the Environment Agency who will report to the Secretary of State. The NDG will include senior decision makers from the principal stakeholders. Members include central government departments, Water Companies, Water UK and other groups such as National Farmers' Union and the Association of Drainage Authorities. If the drought escalates regulators such as Ofwat and Drinking Water Inspectorate will also be included.

If a drought major incident is declared SCGs in the affected region will start to meet and nationally COBR may convene. In this case the NDG will form an advisory body to COBR. SCGs across a specific region in relation to drought may wish to convene a ResCG in which the SCGs work together across boundaries. Locally SCGs will report directly up to COBR if convened for drought, as per normal structures. For further information see Drought Response: our framework for England.

3.1.2 Regional Drought Planning

Within the London LRF area there are two Environment Agency Areas (Hertfordshire & North London area and Kent & South London area) and four water companies - Affinity Water; Essex and Suffolk Water; SES Water and Thames Water. The map below shows the boundaries of these organisations in relation to the Greater London Authority.



3.1.3 The Environment Agency

The EA has a duty to manage natural water resources in England including rivers and aquifers. In order to do this the EA routinely measures, monitors and reports on the water situation and the prospect of shortages. This information is updated monthly and published online at the below link.

The EA works with water companies and others to manage the impacts on people, business and the environment. As part of these duties drought plans are produced which sets out how the EA manages its response to drought.

3.1.4 Water Companies

Water companies are ultimately responsible for planning for and managing water supplies to meet the needs of customers. In order to do this they remove water from the natural environment under license from the EA in order to provide public water supply. They are legally obliged to produce a plan every 5 years to show how they will:

- Manage the needs of future populations.
- Deal with climate change.
- Develop – where needed – new water supply resources.

In addition water companies are required to prepare and maintain drought plans. The Greater London Authority (GLA) is one of the statutory drought plan consultees. Non-statutory consultees include local interest groups, conservation groups, industry representatives, charities and other water companies.

The Water Industry Act 1991 defines a drought plan as ‘a plan for how the water undertaker will continue, during a period of drought, to discharge its duties to supply adequate quantities of wholesome water with as little recourse as reasonably possible to drought order or drought permits’ i.e. these are plans to show how water companies will maximise the efficiency of their resources and their water supply service in order to avoid restrictions during times of low rainfall.

They do not address the issue of how water could / would be provided during periods of Severe or Extreme drought.

Drought plans are approved by Defra. However, in view of the risks posed by climate change, the challenges of population growth in London and the need to promote a sustainable city, the London LRF has chosen to look at the risks and impacts associated with more severe levels of drought.

3.1.5 The Local Resilience Forum

Under the Civil Contingencies Act 2004 Local Resilience Forums have a duty to assess risks and make plans to respond to emergencies within their geographical area.

Guidance on the type and severity of risk planned for is provided by National Government via the National Risk Register however, in view of the risks posed by climate change, the challenges of population growth in London and the need to promote a sustainable city, the London LRF has chosen to look at the risks and impacts associated with more severe levels of drought than the current national guidance which plans to 'drought'.

3.1.6 Partners

Partner organisations should use the information contained in this plan to produce a water efficiency plan that enables them to reduce consumption during Prolonged Dry Weather and to maintain services in the event that drought restrictions are introduced.

3.2 Risk Mitigation

Under 'normal' conditions, water companies, the EA, national, regional and local government and regulators are required to work together to increase the security and sustainability of water supplies for London.

Strategies include:

- Reducing leakage
- Optimising water resource management and regional coordination.
- Reducing demand: all water companies within the London LRF are required to promote water efficiency measures as part of their day to day activities. These include investment in the development and supply of water efficient goods and the installation of smart water meters.

In addition to these measures water companies work together to:

- Increase the options for sharing supplies via bulk transfer and abstraction license trading within catchments.
- Develop new technologies to facilitate the sustainable use of water resources both during 'normal' supply conditions and times of drought.

In addition to drought planning on a water company level the water companies in the South East of England, which are subject to common climatic conditions, are working together on a regional drought plan. This work seeks to identify short, medium and long-term measures which can be put in place in order to reduce the risk of and mitigate the effects of Severe and Extreme drought by actions such as sharing water between different water companies and even regionally. At the time of writing this plan this work is in its infancy but updates will be included in later versions.

LRF partners may also choose to promote the sustainable use of water, for example through the planning process.

4. Activation of partnership response

4.1 Activation

It is recognised by the London LRF partnership that the optimum time to take action to mitigate the potential impacts of drought is during the Prolonged Dry Weather stage. However, it has been difficult to assess the frequency and commitment that this would involve as the category is a fairly recent development and there is insufficient data available for full evaluation. In addition there is the issue that a prolonged dry weather would not necessarily lead to the emergence of a full drought – conditions may instead return to ‘normal’.

Therefore it is agreed that:

- On identification of Prolonged Dry Weather by the EA in conjunction with the water company (ies) concerned, either fully or partially within the London LRF area, the EA will inform the London LRF.
- The LRF will add ‘Drought’ as an agenda item to the London LRF weekly partnership teleconference call in order to facilitate a discussion on risks and associated impacts.
- Partner organisations will use this information to trigger consideration of their own water use and conservation options.
- Partners will refresh their knowledge of appropriate water company drought plans.

This will enable the partnership to track the potential development –or not- of a drought and to respond accordingly.

In the event of the situation changing from ‘Prolonged Dry Weather’ to ‘Drought’, the information will be communicated to the London LRF who will convene a meeting of the EA, the water company (ies) affected, local authority representatives and emergency services.

If drought plan measures are implemented, all agencies should review their business continuity plans to ensure that they are able to maintain their core business activities.

4.2 Communications

Drought communications will be led by the Water Company(ies) working with the EA to ensure that they are consistent and coordinated. They should be supported by the partnership in line with the London LRF Communications Plan.

5. Partnership Drought Response Measures

The following table highlights the activities relating to each level of drought response.

Drought level	Customer impact	EA / Water company activities	London LRF partnership activities
L0: no drought	None	Routine activities to increase security and sustainability of water supplies.	Business as Usual
L1: Prolonged Dry Weather	Water supply as 'normal' but customers are encouraged to voluntarily reduce their water usage.	Enhanced water efficiency campaign. Enhanced Leakage reduction programme. Consideration of risks and mitigation associated with introduction of Temporary Use Bans (TUBs).	Add 'Drought' as an item for discussion to the LRF weekly conference call (see Appendix III for guidance on specific issues to include) Consider own and public water resource use and need to trigger partner water conservation plans. AS POSSIBILITY OF PROGRESSING TO 'DROUGHT' BECOMES LIKELY: EA to consider use of joint messaging and liaise with London Resilience Communications Group to establish role of the group Refresh familiarity with London and where applicable, regional drought plans Review / activate business continuity arrangements for core activities
L2: Drought	Water supply as 'normal' but some restrictions on discretionary water using activities.	As above plus actions as set out in the relevant water company's drought plan including but not limited to: Increase in public communications to promote the water conservation message Implementation of a Temporary Use Ban (TUB) Preparation for the application of an Ordinary Drought Order (should it be needed)	Convene multi-agency meeting for consideration of strategic risks and impact mitigation in order to deliver the partnership strategic objectives: <ul style="list-style-type: none"> • Protect life • Protect health, safety and welfare • Promote public confidence through communication and engagement • Minimise risk of adverse effects to London's infrastructure, people and businesses • Consider the potential for community tension London Resilience Communications Group to activate, to ensure coordinated communication in support of EA and

water company
Establish a Recovery Group

L3: Severe Drought	Water supply as 'normal' but with restrictions on some recreational and commercial activities.	Application for Ordinary Drought Order (ODO) - granted by the Secretary of State for a period of up to 6 months (extendable) to either the EA or water companies. This allows for changes to the way in which water is held, treated, supplied, used and / or discharged. Extensive working with LRFs and other organisations to identify and mitigate potential risks associated with introduction of ODOs, and EDOs in the event that they are required.	Implementation of risk mitigation strategies in line with objectives set out for L2 (above).
L4: Extreme Drought	Impacts to the 'normal' water supply, including potentially significant reductions in water pressure and/or water quality.	Emergency Drought Order (EDO). Granted to the Environment Agency or water companies for a period of up to 3 months (extendable) by Defra. As ODA (above) plus allows water companies to prohibit or limit the use of water and to reduce the pressure at which the piped water is supplied. Working with LRFs and other organisations to mitigate impacts particularly to 'vulnerable' people.	As Above It should be noted that response to a severe drought is likely to be COBR led with a requirement for regular reporting to the cabinet office via Defra.
L2: recovering from drought		Cautious relaxation of water restrictions in line with drought plans / risks Implementation of actions to facilitate a return to service as normal	Transfer from 'response' to 'recovery' in line with reduction of risks. Identification and documentation of multi-agency learning.

	Identification and documentation of learning	
L0: no drought	Implementation of learning.	Implementation of learning.
	Update of drought plans as appropriate.	

Water supply normal = meeting or exceeding water quality, supply pressure standards with no restrictions on use

6. Risks and Issues

Risks and issues arising from a drought will depend largely on the severity and duration, the actions taken by the water supply company (ies) to maintain services and the population affected. The table below sets out some of the key risks and impacts but is by no means exhaustive. Risks should be assessed in context at the time of any drought.

A more detailed list of possible direct and indirect impacts of drought by sector can be found in Appendix 4

Risk	Lead agency (if known)
Loss of public confidence with regard to water resource management and / or the safety of the public water supply	Water companies
Loss of piped water supplies due to reductions in pressure, rota cuts or emergency breach of mains	Water companies
Requirement to provide water by alternative means and / or issue of boil notices	Water companies
Loss of water / wastewater assets due to land movement	Water companies
Impacts on wastewater services due to reduction in flow / volume / concentration	Water companies
Civil unrest caused by restricted access to water supply	Police
Increase / change to individual or institutional vulnerability arising directly or indirectly from drought or drought management measures e.g. individuals who require large volumes of water for medical reasons	NHS and local authority
Anxiety / stress caused by direct and indirect impacts	NHS and local authority
Impacts on businesses / industry (who, what, why?)	Greater London Authority
Negative impacts on fire-fighting and emergency response caused by lack of water	LFB
Loss of private water supplies:	Local authorities
Impact on environment including plants, animals (especially wild animals) and soil	EA
Tourism and leisure	Local authorities
Impacts on agriculture, farming and livestock	Defra
Impacts on community facilities / garden projects	Local authorities / charities
Damage to infrastructure (e.g. roads, tunnels, rail transport, public and private buildings including housing stock) arising from land movement	All
Increase in short term food prices depending on size of area impacted and duration of event	Defra
Impact on shipping due to low water levels in rivers	Ports Authority, LRG and EA
Increase risk of wild fires etc	LFB

7. Recovering from Drought

Issues relating to recovery from drought will be a function of the timing, location and nature (depth, scale and duration) of the event and are likely to be both temporary and permanent in nature.

Details of the recovery process are contained in the [London Recovery Management Protocol](#).

8. Exercising and Review

All responders should have a clear understanding of their role and responsibility throughout any incident where the procedures outlined in this document have been invoked. This should be achieved through training and exercising at all levels. Training should take place prior to exercising the plan. The experience from exercises and incidents should contribute to reviews of the document.

The London Resilience Team maintains a list of lessons identified through exercises and incidents on behalf of the wider partnership. These are identified, recorded and implemented in accordance with the partnership's lessons learned policy. The status of these lessons is reported to London Resilience Programme Board, and the London Resilience Forum.

8.1 Responsibilities for Training and Exercising

8.1.1 Agency specific

Agencies are responsible for ensuring that they are able to carry out the roles and duties described in this document. It is expected that this will include role specific training and an appropriate level of knowledge of multi-agency procedures.

8.1.2 Partnership wide

The following will support a consistent approach to multi-agency cooperation approach across the London Resilience Partnership:

- A Capability Awareness Package accompanies the document. This is prepared by the Lead Agency responsible for developing the capability. The package provides basic information about the capability for all responders.
- The LRF Training and Exercising Group will coordinate:
 - Briefing and workshops hosted by the London Resilience Team.
 - Partnership wide exercises at the sub-regional and pan-London level.

8.1.3 Record keeping

Agencies are to maintain records of their training programmes as evidence. The LRF will, from time to time, carry out an audit of multi-agency training across the partnership to ensure a consistent approach. The Lead Agency for each Partnership work stream is to document the development of the capability through the record of exercises, testing and activation attached to this document.

**APPENDICES HAVE BEEN REMOVED FROM THE PUBLIC FACING
VERSION OF THIS PLAN.**

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