LONDON RESILIENCE PARTNERSHIP

Water Supply Disruption Framework

Version 3.2

October 2022

London Resilience Partnership Water Supply Disruption Framework

Lead Agency for Review: Thames Water

Work-stream Lead: Beth Reeves, Thames Water

Lead Author: Beth Reeves, Thames Water

London Resilience Group capability coordinator: Sian Mullen

LONDON RESILIENCE GROUP

London Fire Brigade Headquarters

169 Union Street

London

SE1 0LL

LondonResilience@london-fire.gov.uk

www.london.gov.uk

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)**
2.8	June 2014	Sarah Burchard (Thames Water) – version signed off by London Resilience Forum
2.8	03 October 2017	Sarah Burchard (Thames Water) – first draft changes from reconvened group meeting. Summary of changes: • Administrative updates to terminology • Updated references to relevant London plans • Information about the Priority Services Register added • Communicating restoration period issues
2.9	05 October 2017	Susan Price (London Resilience) – Administrative changes to format
2.9.1	27 October 2017	Updates from the Working Group
2.9.2	02 November 2017	Updates from the Working Group
2.9.3 (designated as V2.0)	19 December 2017	Toby Gould (London Resilience Group) Review against London Strategic Coordination Protocol
3.0 (draft)	November 2021	Beth Reeves (Thames Water) – Updates from 2021 framework review, incorporating input from Water Supply Disruption Working Group, consideration of outstanding lessons, and administrative changes to the format.
3.1	January 2022	Sian Mullen (London Resilience Group) Amendment to activation procedure following feedback after submission and review at LRPB.
3.2	October 2022	Sian Mullen (London Resilience Group) Review and inclusion of guideline indicators and considerations to support consistent notifications in an incident. Other minor administrative updates throughout, including reference to the updated Security and Emergency Measures Direction (SEMD) 2022 (previously 1998).

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.

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 framework will be circulated to all members of the London Resilience Partnership.

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.

Contents

VERSION CONTROL **3**

Audit and Amendments 4
Publication and Distribution 4
Data Protection 4

1. DEFINITION **7**

1.1 Regulations 7
1.2 Aim and objectives 7
1.3 Scope 7
1.4 Interdependencies 8
1.5 Links to other Partnership Documents 8

2. ACTION CHECKLIST **9**

3. ACTIVATION PROCESS **10**

3.1 London Resilience Partnership Activation Diagram 10
3.2 Trigger for Activating a Pan-London Response 10
3.3 Notification of Partnership 11
3.4 Communications 12

4. STRUCTURE AND SUB-GROUPS **12**

4.1 Structure of the response 12
4.1.1 Reporting structure 12
4.1.2 Incidents affecting multiple London Boroughs 12
4.2 Escalation and De-escalation 12
4.3 Subgroups to be considered 13

5. SHORT, MEDIUM AND LONG-TERM CONSIDERATIONS **14**

6. RESOURCES AND SUPPORT AVAILABLE **16**

7. CONSIDERATIONS FOR STRATEGY **17**

7.1 Strategic Coordination 17
7.2 Funding considerations 17
7.3 Key Considerations for strategic multi-agency coordination 17
7.4 Tactical Considerations 18
7.5 Vulnerable People Considerations 19

8. RECOVERY AND CLOSEDOWN **20**

8.1 Stand-Down criteria 20
8.2 Stand-Down Notification 20
8.3 Recovery Considerations 21

PART 2 – CAPABILITY GUIDANCE **1**

9. BACKGROUND **1**

9.1 London Context 1
9.2 Description of Water Supply Disruption 1

10. PLANNING **2**

10.1 Roles and responsibilities for water supply in London 2
10.2 Risk Assessment 3
10.2.1 Risk Matrix 3
10.3 Risk Mitigation 4
10.3.1 Water Company Risk Mitigation Process 4
10.4 Sensitive site considerations 4
10.5 Planning Assumption ..... **Error! Bookmark not defined.**
10.6 Gaps ..... **Error! Bookmark not defined.**

11. DEPLOYMENT OF ALTERNATIVE WATER SUPPLIES 4

11.1 REGULATORY REQUIREMENTS 4
11.2 VULNERABLE AND SENSITIVE CUSTOMERS 5
11.3 ROLES AND RESPONSIBILITIES 5
11.4 SITE REQUIREMENTS 5

Part 1 – Capability Framework

This document highlights the key information from the Water Supply Disruption Framework. For further guidance please refer to Part 2 – Guidance and the Water Supply Disruption Hub Distribution Models: A Practical Guide for Emergency Planners.

1. Definition

1.1 Regulations

The Civil Contingencies Act (CCA) 2004 requires category one and two responders to have plans in place for the purpose of mitigating the effects of an emergency. In the context of this framework, this relates to an emergency resulting from a disruption to water supplies.

The Security and Emergency Measures Direction (SEMD) 2022 stipulates four main areas that water companies must comply with:

- **Planning** – companies must make, keep under review, test and revise plans to ensure the provision of essential water supply and/or sewerage services at all times, including during a civil emergency or any event threatening national security.
- **Resourcing** – companies must ensure they have the necessary capability, capacity and facilities to implement their plans.
- **Securing** – companies must identify and mitigate against any security risks to the provision of water supply and/or sewerage services. There are additional requirements for companies who have been notified by government they have Critical National Infrastructure designated sites.
- **Responding** – companies must react promptly to incidents, including providing an alternative supply of water (where required).

1.2 Aim and objectives

This document aims to provide a scalable plan for responding to a major water supply outage within London; and in doing so informs the London Resilience Partnership regarding the assessment of risk and management of associated impacts during a major water outage with a view to:

- Set out the circumstances under which a partnership response to a water supply outage may be triggered.
- Set out the process for activating a multi-agency response to a water supply outage.
- Outline the key considerations involved in providing a multi-agency response.
- Provide information to support the timely activation and delivery of a multi-agency response.

1.3 Scope

This framework sets out the multi-agency response plan for London which is designed to enable the London Resilience Forum to meet the requirements of the above legislation. The framework is intended to support the wider partnership response to the loss of water supply and is not designed to capture the response to the cause of that disruption, which is managed by the Water Companies.

It applies to any ‘major’ water supply outage within the London Resilience Forum area i.e., any water supply outage which requires or has the potential to require a multi-agency response, either due to scale, impact or duration of the incident.

Under the terms of the legislation no provision has been made for funding the response to a Major Incident that exceeds the numbers stipulated by the Defra guidance and it is recognised that this

issue will have to be addressed in such instances. In the event that the incident scale has or will exceed the capabilities of the water companies, there would be a request to Central Government to provide the additional support required.

The framework addresses issues relating to the supply of water to domestic customers and registered 'Sensitive' customers (e.g., hospitals, prisons, and nursing homes). It does not cover the provision of water to non-domestic users, or to domestic customers who under normal circumstances make use of private water supplies. These users are advised to contact their drinking water provider and invoke their business continuity plans.

This document does not cover issues relating to drought, which are covered by a separate framework: London Resilience Partnership Drought Response Framework.

1.4 Interdependencies

The operation of the water supply network is dependent upon the power supply network. Therefore, a power supply disruption incident may impact water supply.

A regular throughput of water is required to ensure the waste system flows properly. In an extended water supply outage, there is potential for knock-on impact to the waste network due to low flows.

1.5 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 website).

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

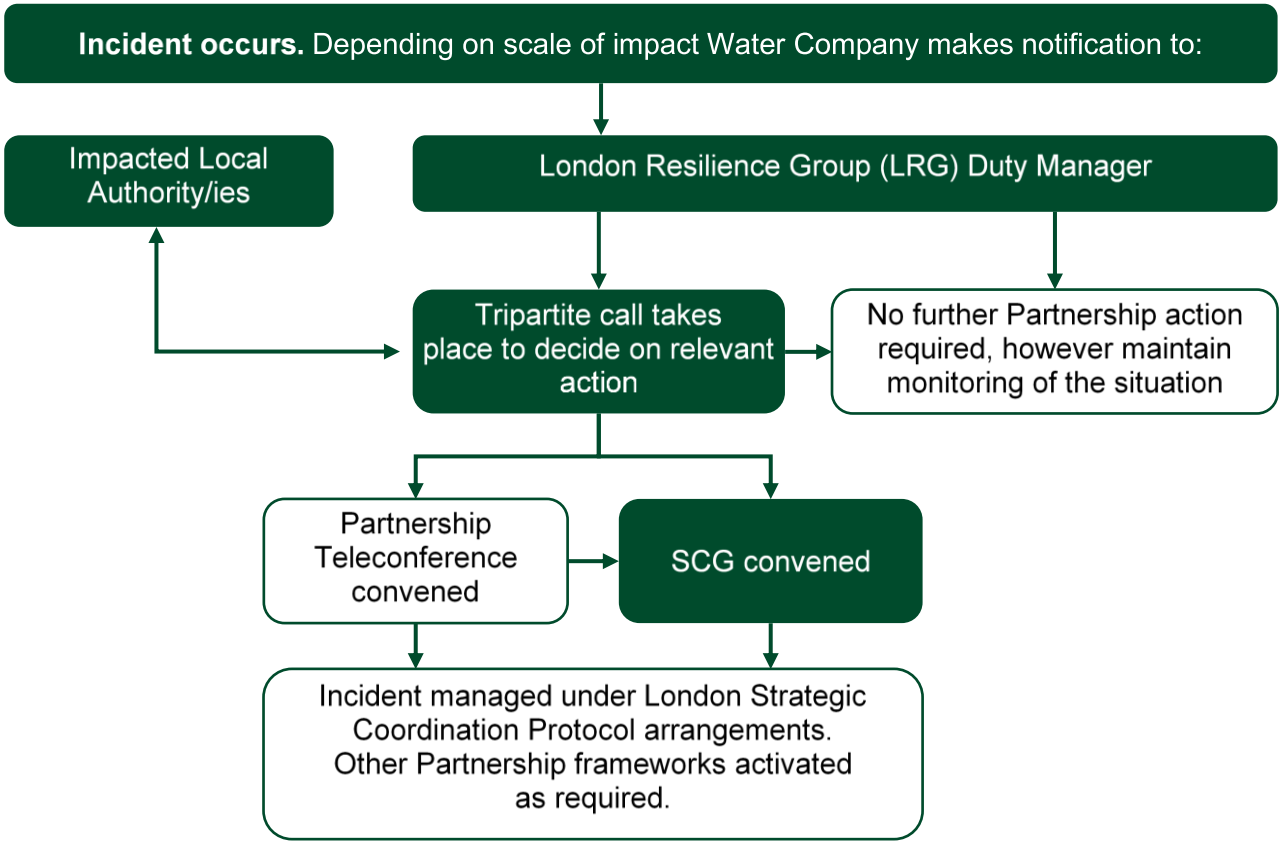
- Strategic Coordination Protocol
- Identification of the Vulnerable
- London Power Supply Disruption Framework
- London Resilience Communication Group Framework
- London Emergency Services Liaison Panel (LESLP) Major Incident Principles
- Drought Response Framework
- Cyber Incident Response Framework
- London Strategic Flood Response Framework
- London CBRN(e) Framework
- Severe Weather Framework
- London Recovery Coordination Protocol
- London Voluntary Sector Capabilities Document

2. Action Checklist

Complete	Action	Section
	Activate the framework	Section 3 – Activation Process
	Determine the structure of the response and which subgroups will be required.	Section 4 – Structure and sub groups
	Assess the immediate / short-term implications	Section 5 – Short, Medium and Longer Term considerations
	Assess the medium-term considerations	Section 5 – Short, Medium and Longer Term considerations
	Consider the longer-term implications	Section 5 – Short, Medium and Longer Term considerations
	Determine the resources and support available	Section 6 – Resources and Support Available
	Set strategy	Section 7 – Considerations for Strategy
	Refer to the guidance document for further information	Part 2 – Capability Guidance

3. Activation Process

3.1 London Resilience Partnership Activation Diagram



3.2 Trigger for Activating a Pan-London Response

A London-wide response will be activated in the event of a potential, or actual, water supply outage to a population larger than can be catered for by the water undertaker concerned, even with the assistance of mutual aid. There are many considerations that will factor in the activation decision, which include (but are not limited to):

- number of properties or persons impacted,
- number of key sites (i.e., hospitals) impacted,
- cause of disruption, or the expected duration of disruption,
- time of year and associated weather conditions.
- geographical impact area affects more than one London borough
- potential impacts to emergency response or multi-agency partners
- high levels of media interest
- concurrent issues (experienced by the impacted Water Company or neighbouring Water Companies) that stretch or exceed capacity to manage the incident.

The framework could also be triggered if there was a significant water supply disruption associated with a restriction of use incident. In this scenario, water would still be delivered via piped supply, but customers would be restricted in how they could use the water and may need to boil it before use. This would most likely be as a consequence of a contamination of the water supply, either malicious or accidental.

The decision to trigger the framework will depend on the capacity of the industry and prevailing conditions at the time of any incident (i.e., if any of the water companies concerned have, or are planning to, deploy all available assets to an incident outside London at the time of any event). This may mean that a situation could arise whereby two or more smaller scale incidents (that would not trigger a framework activation independently of each other) have a cumulative effect that meet the trigger level for activation of the framework. In such a case any decision with regard to the prioritisation of resources will be escalated via the London Strategic Coordinating Group (SCG) to Ministerial level.

The London Strategic Coordination Protocol sets out the assessment criteria to determine the level of strategic coordination required. For example, an SCG response may also be activated in the event that a water supply outage causes substantial media activity which is judged likely to have an adverse impact on the day-to-day activity and / or reputation of London.

When deciding whether to activate a pan-London response, consideration should be given to the availability or clarity of data relating to numbers impacted by an incident. High levels of uncertainty, or an incident which cuts across multiple boroughs and therefore requires a high level of collaboration could be a trigger for implementing a pan-London response.

3.3 Escalation and notification

A general rule of thumb for wider notification of an incident can be aligned with the levels at which a water company would consider the need to notify the regulatory body (DEFRA) of an incident. The SEMD legislation does not provide an exact numeric value to guide the trigger, escalation or wider notification in a water supply incident, so water companies will use their discretion in deciding when partners will be informed during any given incident.

It should also be remembered that supply issues can be mitigated by the water companies to a degree, and thus the impacted numbers can vary in quick time in an incident.

The water companies can at any point contact the London Resilience Duty Manager to request a tri-partite call, or to seek advice regarding the wider sharing of any given incident or potential incident. Wider Partnership notification will be supported by the London Resilience Group.

3.4 Notification of Partnership

The Water Company shall notify the London Resilience Partnership of a water supply disruption incident via the London Resilience Group Duty Manager as soon as reasonably practicable, but no later than 2 hours from identification that the incident is of sufficient scale. Each water company has its own internal procedures which govern their emergency response, but they would typically notify the London Resilience Partnership of any water supply disruption incident where a multiple agency response is required, when Defra has been informed of the incident, or where they deem the risks (population impact, timescale, complexity of repair etc.) associated with the situation are significant.

Water Companies should endeavour to follow up any initial notification of a water supply disruption incident with a telephone call to the London Resilience Duty Manager, in order that they can receive a full assessment of the situation to aid response considerations, and to inform any change to agreed outcome.

The London Resilience Duty Manager will then set up a tri-partite discussion between London Resilience, MPS and the water company affected, and potentially another Category One responder – this will be dependent on the incident but will most likely to be a representative of the Local Authority(ies) directly impacted or the London Fire Brigade. This discussion will be informed by the joint assessment criteria in the London Strategic Coordination Protocol.

The outcome will be either to maintain monitoring the situation or activation of a partnership response. Activation of a partnership response will be in line with the levels stipulated in the London Strategic Coordination Protocol. Invites to a Partnership teleconference or SCG will be sent to the core group that includes Category 1 responders, Met Office, Department for Levelling Up, Housing and Communities (DLUHC), the Military Joint Regional Liaison Officer (JRLO) and Transport for London (TfL). All Category 2 responders, other sectors and organisations will only be

invited to an initial partnership call if their input is specifically pertinent to the incident, but they should still be informed and can request to participate.

Information supplied to the Duty Manager should align where possible with the METHANE model (Annex 1 - Water Company guidance on the METHANE model for situational awareness).

3.5 Communications

Public communications will be led by the Water Company(ies) affected and supported by all other agencies involved. Details of the partnership communications strategy are in the London Resilience Communication Group Framework.

It should be noted that early communications are vital; they ensure the general public as well as any key stakeholders are aware of the situation and any role they could play in supporting the response (i.e. non-essential staff who live outside the affected area staying/ heading home).

Ongoing communications, including via social media, should be clear, concise and regularly updated. Informed residents can make informed choices. It has also been noted that in an information vacuum, people create their own narrative which may be detrimental to the progress of the incident. Sufficient resources should be provided by the Water Company to ensure effective communication, with each agency playing a supporting role in disseminating core information.

In a Restriction of Use scenario, early and detailed communications are vital in protecting public health. The Water Company has a statutory duty to deliver a physical Restriction of Use notice to each household, and an all-clear notice once the situation has been resolved. Wider communications are essential in this scenario to ensure widespread awareness of the actions required, to provide information to maintain the confidence of the impacted population, and to provide answers to any questions the public may have. The support of the wider resilience group in sharing messages is essential, particularly for more vulnerable sectors.

4. Structure and Sub-Groups

4.1 Structure of the response

Any major water disruption incident will be managed under the London Strategic Coordination Protocol arrangements, working with all sectors of the London Resilience Partnership to coordinate and share information.

4.1.1 Reporting structure

In line with the London Strategic Coordination Protocol arrangements, the lead organisation - in this instance, the Water Company(ies), must ensure a METHANE report has been shared with relevant partners, including LRG, upon notification of an incident.

The report should be shared via email and/or using the London Situational Awareness System (LSAS) as soon as possible and always prior to any Strategic Coordinating Group (SCG). LRG will utilise LSAS for all confirmed Major Incidents, or large-scale incidents requiring multi-agency coordination, to collate partner updates and support shared situational awareness.

4.1.2 Incidents affecting multiple London Boroughs

It is likely that a major water disruption incident could impact more than a single borough. In such circumstances, the Water Company(ies) will liaise directly with LRG, who will subsequently coordinate liaison with the impacted boroughs. Depending on the nature of the incident, this cross-border collaboration may already be in place.

4.2 Escalation and De-escalation

Any significant Water Supply Disruption will result in public awareness and scrutiny of the co-ordinated response. Water Companies have statutory obligations under the Water Act to provide a piped supply of wholesome water, with regulators including the Drinking Water Inspectorate (DWI) and Defra being notified formally when a water supply interruption meets specific triggers. Water

Company's responsibilities to provide alternative water are set out within the Security and Emergency Measures Direction (SEMD).

Water Companies are expected to plan for a significant outage within their Business as Usual (BAU) incident response plans and will also utilise their Mutual Aid agreements to call on support from other Water Companies if required. Simplistically, they will escalate and invoke this framework when:

- An incident is of such a scale that the support to that response exceeds, or has the potential to exceed, their BAU incident response.
- An incident impacts or has the potential to impact a number of partner organisations.

De-escalation will occur when the risk of a large-scale outage has been significantly reduced or the situation has been mitigated to such an extent that the Water Company is able to manage under its BAU processes. This will involve standing down the response under this framework, but may not mean that all actions are completed, and work by the water company may continue until a permanent resolution of the situation has been completed. In this instance, an agreement should be made relating to the frequency of updates that will continue to be provided to the Partnership until completion of the permanent resolution is achieved.

4.3 Subgroups to be considered

A SCG will need to activate relevant subgroups to support the response. Below is a list (not necessarily extensive) of the subgroups an SCG might need in place to respond to a significant water supply disruption incident. The SCG may choose to set up additional ad-hoc subgroups / task and finish groups dependent on specific actions as required by the incident.

Sub-Group	Purpose	Lead
Tactical Coordination Group (TCG)	Translate strategy into tactics and operations	Lead Responder
London Resilience Communication Group	Ensure appropriate and consistent communications	London Councils (with input from the water company and impacted Local Authorities)
Scientific and Technical Advice Cell (STAC)	Provide timely and coordinated advice on the scientific, technical, environmental, and public health consequences of a water supply disruption incident	UK Health Security Agency (UKHSA)
Recovery Management Group	Plan for and influence wider longer-term outcomes	Local Authorities

5. Short, Medium and Long-Term Considerations

Phase	Needs of people	Tactical Responders	Strategic Responders
Impact / immediate post impact: up to 6 hours	• Information about the disruption, impacts and duration • Advice for limiting the impact of the disruption if possible • Priority customers / vulnerable persons contacted with specific instructions / actions / reassurance for this group • Means to report secondary impacts (e.g., flooding from a burst water main) and advice for dealing with safety and wellbeing concerns	• Safety considerations for secondary impacts (e.g., flooding from a burst water main) • Identification of priority customers / vulnerable persons and management of this list as new vulnerable persons identified by supporting agencies • Communicate messaging in line with strategic aims • Identification / review of potential locations for alternative water sites	• Cause of outage (i.e., burst main, issue at Treatment works, contamination), duration of impacts and technical fix(es) • Identification of priority customers / vulnerable persons, and specific instructions appropriate for this group • Consistent messaging considering behavioural impacts to the public • Coordination of response to all related elements of the incident (including the water supply disruption and any secondary impacts) • Provisions for location of potential alternative water sites and personnel to support the distribution of alternative water
Following hours (up to 24 hours)	• Advice on provision of alternative water supply (locations / timings / accessibility) • Updates on the progress of the situation (expected resolution / limited use) • Instructions if there are restrictions of use in place • Increasing concerns regarding sanitation and waste (if applicable)	• Continued dissemination of public messaging • Provision of alternative water to persons and especially the vulnerable • Other support to vulnerable persons • Public order, especially at water distribution sites • Provision of alternative water to livestock • Staffing considerations for management of alternative water sites	• Continued provision of public messaging in line with the specifics of the incident • Risks to health from provision of ‘unfit’ water (if applicable) i.e., need to issue advisory ‘boil/restriction of use’ notices • Provision of alternative water to persons and especially the vulnerable • Provision of alternative water to livestock

Medium term (after 24 hours)	• Growing concern regarding the continued provision of alternative water supplies • Sanitation requirements and waste management alternatives • Need for updates and reassurance that incident is under control – what has happened, is happening, will happen • Uncertainty about ability to undertake day-to-day activities – work / school / health appointments / shopping / pre-planned events or activities	• Ongoing communications and reassurance • Continued provision of water supplies to people and livestock • Implementation of sanitation and waste management alternatives • Recycling of plastic water bottles / other waste	• Ongoing communications and reassurance • Continued provision of water supplies to people and livestock • Sanitation requirements and waste management alternatives • Business impacts from reduced / no water supply • Business / community impacts resulting from location of alternative water sites • Logistical planning for continued provision of water for all
Longer term (after 48 hours)	• As above, but concerns and needs increasing as time passes by • Reluctance to pay water bills / demands for refunds or compensation	• As above • Longer term staffing plans for alternative water supply sites • Collection of logs / data relating to the incident	• As above • Management of public expectations • Reputational considerations for London / Water Companies • Issues relating to insurance / compensation • Issues relating to potential long-term impacts to water supply (and sewerage service) if applicable • Consideration on longer term impact to health and wellbeing of individuals

6. Resources and Support Available

Resource / Support	Description	Provider(s)
Hub Distribution Models	Guide for Local Authority Emergency Planners to support provision of alternative water distribution sites in the local area	Local Authorities
Emergency Responders	Personnel and other resources to support with any life-threatening situations	Fire Brigade
Emergency Responders	Personnel and other resources to support other agencies in the event of crime or public disorder situations at alternative water supply locations	Police
Responders	Personnel and other resources to support with any impacted people (particularly the vulnerable), especially if Emergency Centre(s) have been opened	Local Authority
Logistical Resources	Resources to support with any logistical needs i.e., movement of alternative water or staffing of alternative water locations	Military (subject to MACA request approval – this support cannot be guaranteed)
Guidance on Flooding	Specialist knowledge and support	Environment Agency
Public Health Guidance	Specialist knowledge and support, especially if the incident has a water quality consideration	UK Health Security Agency (UKHSA)

7. Considerations for Strategy

7.1 Strategic Coordination

The London Resilience Partnership Strategic Coordination Protocol sets out the arrangements to manage the partnership response to a water supply disruption incident.

The priority of the multi-agency coordination structure will be to lead an effective multi agency response in order to minimise adverse impacts to the population affected and facilitate a timely restoration of 'normality'. Depending on the scale of the response, this coordination may take the form of a Partnership Call or the establishment of a Strategic Coordinating Group (SCG).

7.2 Funding considerations

This framework recognises that under the terms of the legislation, issues relating to the funding of a multi-agency response have not been addressed. It is therefore proposed that the risks and issues are included in the remit of the SCG or Partnership call; and that wherever possible resources should reflect identified cause(s). The SCG / Partnership will also seek to identify the cause of the water supply disruption to establish the appropriate mechanism to recover the costs of assisting the response. It may be that some costs can be charged back to the water company, but this will be dealt with on a case-by-case basis, and no expenditure should be made on the expectation of reimbursement; explicit agreement should be obtained if required.

7.3 Key Considerations for strategic multi-agency coordination

There are a broad range of issues for consideration by the Partnership or Strategic Coordination Group. Section 5 includes a number of prompts, and some of them may or may not be relevant to any individual incident depending on the time, season, weather, cause, duration, location etc.

Military resources could be considered but not guaranteed. Any requests for support would be through MACA (Military Aid to the Civil Authorities) protocol in liaison with the Joint Regional Liaison Officer (JRLO).

The considerations below should also be reviewed for applicability or prioritisation as required, but are not restricted by timings and may present as a high priority at any point during the incident:

Consideration	Lead Agency (if known)
Risks to health from provision of 'unfit' water (if applicable) i.e., need to issue advisory 'boil/restriction of use' notices	Water company with support / input from DWI
The impacts of a restriction of use notification (e.g. Increase in scalding incidents when people boil tap water in pans, risk of fires because of boiling pans left unattended, heath issues from ingesting contaminated water, food premises potentially continuing to use the water, etc).	Water company with support from all
Identification of 'vulnerable' individuals and institutions including hospitals, care homes and prisons (to include both those already registered with one or more responding agency, and those who may not appear on any register)	All
Identification of 'vulnerable' individuals disproportionately impacted through financial hardship and who are not on the Priority Services Register (i.e. those with limited ability to comply with 'boil/restriction of use' notices)	All
Disruption to community support services e.g., doctor surgeries, dentists, schools	NHS England Local Authorities School Leaders

Consideration	Lead Agency (if known)
Public health issues arising from the limited availability of water for bathing, flushing lavatories and laundry purposes.	UKHSA/STAC and Local Authority Environmental Health and Public Health
Impact on emergency response capabilities, for example: • firefighting, particularly for large fires or critical sites • impact on health services and hospitals • rerouting of ambulances to areas not impacted by water disruption	All emergency responders
Consideration of potential impact on gas supplies if burst main incident occurs in proximity of gas main, and water enters that main	Water Company/ Gas Company
Consideration of the use of adiabatic cooling which requires mains water for data centres, switch sites and critical equipment for the delivery of voice, broadband, mobile and many other services	BT

7.4 Tactical Considerations

If required, the Tri-partite group (LRG, MPS, Water Company) or SCG will activate a Tactical Coordinating Group (TCG) to support the strategic decision-making process by developing tactical plans and co-ordinating activities and assets.

Pan-London TCG issues	Lead Agency (if known)
Define requirements for water bulk deployment and local distribution centres	Water company
Identification of locations that meet these requirements (in advance and refresh at time of incident) (refer to: Water Supply Disruption Hub Distribution Models: A Practical Guide for Emergency Planners – see para 5.5, p14)	Local Authority. Note: water delivery is usually via HGV and so site requirements are complex. Early consideration of suitable locations is advised. The Water Company are responsible for site management, and have a duty of care for the site and anyone working on it
Information and advice on safe usage at point of water collection: • Potable water will be provided in most instances • Although 'alternative' water supplies will be potable at the point of supply, if the containers used for the collection and transportation of water are provided by the public themselves, they will not be disinfected and therefore the public will be advised to boil their water before use	Water company

7.5 Vulnerable People Considerations

Only vulnerable people will receive deliveries of bottled water; this will be co-ordinated by the water company, who will initially use their Priority Services Register (PSR) to identify those individuals. The water company will engage with impacted Boroughs to identify further vulnerable individuals, who the water company will add to their priority list. In an extended water supply disruption incident, the volume of this list can become large and complex to manage, and sufficient focus needs to be placed on ensuring that individuals or groups of individuals do not fall through the gaps. The Partnership or SCG may wish to consider how tactical issues, including identifying and managing the response to vulnerable people will be addressed. It should be noted that where the water supply disruption is associated with a power supply disruption, the ability to access and share data on vulnerable customers will be complicated and harder to achieve.

This section should be read in conjunction with the London Identification of the Vulnerable Guidance.

Pre-identified vulnerable groups and organisations with responsibility to maintain lists

Potentially vulnerable individual / group	Target through the following organisations / agencies	Comments
Blind / partially sighted*	Water companies / Local Authorities	
Deaf / hard of hearing*	Water companies / Local Authorities	
Dialysis patients*	Water companies / Local Authorities	
Hospitals / nursing/ care homes	Water companies / Local Authorities	Water provision will primarily be via tanker for a hospital if the site is capable of receiving water. Nursing/ Care homes will either be supplied by tanker/ static tank or by prioritised doorstep delivery of bottled water
Prisons	Water companies	
Educational settings	Water companies	Some Local Authorities may assist with lists for some educational settings
Wheelchair users* / immobile*	Water companies / Local Authorities	
Non- native speakers	Water companies / Local Authorities	Ensure communications includes pictographic images
Children under 12 months	UKHSA/NHS England	Should not consume mineral water
Medically vulnerable (e.g., cancer patients on chemotherapy)	NHS England	
Homeless	Councils/ Voluntary Sector	Rough sleepers can access via water distribution sites
Mentally ill and learning disabled	NHS England and Local Authority	Via existing services/contact

Potentially vulnerable individual / group	Target through the following organisations / agencies	Comments
Elderly	Water companies / Local Authorities	Via communications to the community (and to voluntary sector via LA). Some people may appear on more than one list if they have complex needs.
Tourists	Business continuity for hotels and other tourist services	Tourists in hotels are not covered under the provision of the SEMD.
Other		Dynamic assessment during incident

*These customers are required to 'self-register' on the water company's Priority Services Register. This means that these lists should be regarded as reliable but not necessarily comprehensive.

8. Recovery and Closedown

8.1 Stand-Down criteria

The cause, scale, duration, time, and timing of the incident will all impact on the time required for recovery and closedown. Consideration should be paid to the London Recovery Coordination Framework.

The strategic issues to be considered before standing down include:

- Has water supply been restored to all affected areas?
- If areas are still affected by water outage, are these impacting upon the critical service delivery of London responders?
- Has the cause of the disruption been contained or fixed and has the vulnerability to further faults been minimised or mitigated in full?
- Are Partnership organisations reporting a return to business as usual, or at least the delivery of all critical services?
- Does a risk to public health remain? This may require ongoing information from DWI, or from health colleagues.
- Does the Government still require information and reporting on the incident and its ongoing consequences?

8.2 Stand-Down Notification

It is the responsibility of the relevant Water Company to communicate the formal stand-down and a notification of this should be circulated to all partners on conclusion of an incident.

The relevant Water Company will provide advice on issues such as:

- The need for a staged restoration of piped water supplies and associated management of public expectations
- Water quality sampling and analysis
- Timelines for testing solutions against demand peaks
- Removal of any advised restrictions on use

- Management of adverse impacts (if any) on the wastewater service

The decision to stand-down the incident is not indicative of a complete or permanent resolution to the cause of the issue, and consideration should be given to any continued work being undertaken by the Water Company until a permanent resolution of the situation has been completed. In accordance with the de-escalation process covered in Section 4.2 agreement should be made relating to the frequency of updates that will continue to be provided to the public, the Partnership, and the Government until completion of the permanent resolution is achieved. The frequency of these updates should be communicated out as part of the stand-down notification.

8.3 Recovery Considerations

Other issues for consideration for the stand-down or recovery phase include:

- The restoration of piped water supplies may, in some cases, be intermittent in order to facilitate the 'fix' and / or due to the presence of air locks in the water supply network.
- Management of public expectations
- Recycling of plastic water bottles / other waste
- Issues relating to insurance / compensation
- Collection of logs / data relating to the incident
- Multi-agency debrief process
- Review of event
- Identification and implementation of lessons from exercise and incidents

Part 2 – Capability Guidance

This section offers guidance relating to a water supply disruption incident. It is intended to complement the preceding capability framework (part 1).

This guidance should be considered alongside the following resources as appropriate:

Level	Capabilities
Regional Frameworks and Guidance	• London Strategic Coordination Protocol • LESLP Major Incident Principles • London Power Supply Disruption Framework • London Cyber Incident Framework • London Recovery Coordination Framework • London Fuel Disruption Protocol • London Strategic Flood Response Framework • London Resilience Communication Group Framework • London CBRN(e) Framework • Identification of the Vulnerable • London Voluntary Sector Capabilities Document • Drought Response Framework
National Documentation	• JESIP Joint Doctrine: The Interoperability Framework
Local or Organisational Plans	• Agency specific plans and procedures

9. Background

9.1 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 the 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 has a number of Water Suppliers responsible for the provision of water (as detailed in section 10.1); their obligations to provide a wholesome supply of water are set down within the terms of their licences and in the Security and Emergency Measures Direction (1998) and associated guidance.

9.2 Description of Water Supply Disruption

Water is used for a variety of purposes, from drinking water, to washing and bathing uses, for food preparation and for the removal of waste and by-products. As one of life's essential services, customers are used to receiving a high-quality piped supply, and even short periods without water can cause stress and anxiety. For some individuals, there is a water dependency, which means that they are more significantly impacted by a water supply disruption, and the needs of these individuals must be prioritised.

A water supply disruption can occur for several reasons; this framework is predominantly concerned with large scale interruptions that would most likely be as a consequence of a burst water main, significant issue at a water treatment works, or from a problem within the raw water supply (reservoir/ borehole etc). Each incident will be judged on its significance based on the unique interplay of factors including, but not limited to, time of year, temperature, number of people impacted, location of incident, impact to critical services (i.e., hospitals).

The timescales for the water supply disruption will vary, with impacts increasing as time goes by. A short-term interruption (less than 6 hours) may not trigger this framework in full, but LRG may have been notified of the issue being managed by the Water Company, and information relating to the incident could be shared with the Partnership in the interests of information sharing and situational awareness.

Elements of the framework could be used in any event to assist with planning for and mitigating against potential water supply disruption, or as a guide to manage smaller scale disruptions that would not invoke the full response of the wider Partnership. As it is impossible to set definitive numerical trigger for activation of the framework, Water Companies should continually be aware of and make reference to the framework when dealing with a water supply disruption incident and apply the principles of early information sharing to support any potential Partnership support that may be required, recognising that Partner responses will require a period of time to be established.

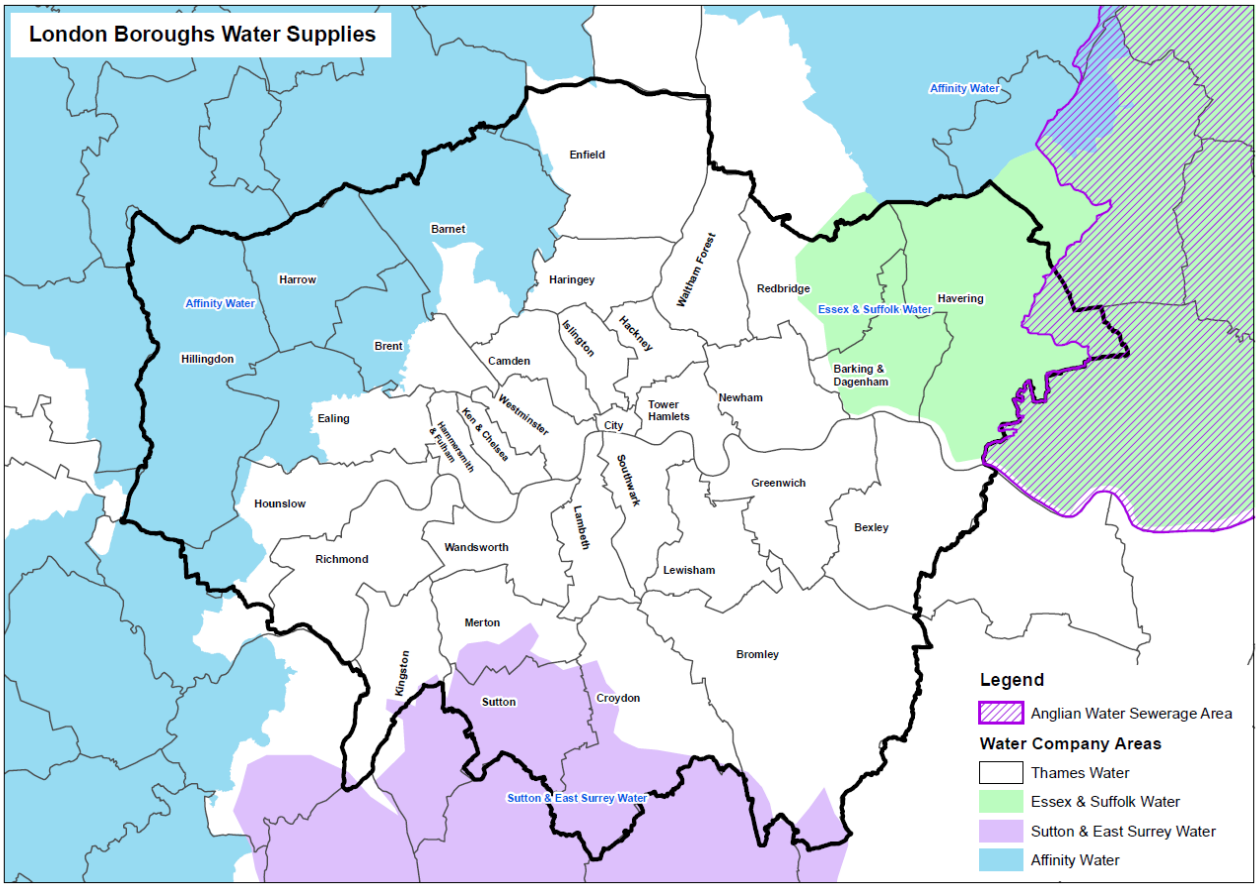
10. Planning

10.1 Roles and responsibilities for water supply in London

Water companies are ultimately responsible for planning for and managing water supplies to meet the needs of customers. Within the London LRF area there are four water companies -

- Thames Water (drinking water and wastewater services)
- Affinity Water (drinking water only)
- Essex and Suffolk Water (drinking water only)
- SES Water, formerly Sutton and East Surrey Water (drinking water only)

The map below shows the boundaries of these organisations in relation to the Greater London Authority. The areas outside of this boundary should also be considered in relation to the total geographical areas that are serviced by the Water Companies:



10.2 Risk Assessment

Risk is inherent in any situation or activity and the risk of a major disruption to the piped water supply scores highly on both the risk registers that inform this framework. The London Risk Register shows a Water Supply Disruption incident as low likelihood of medium impacts. There are risks that need to be considered as a result of the interdependency with the power supply network too.

Sources of risk to the provision of a piped water supply include:

- Natural hazards: landslides, subsidence, earth tremor and extreme weather including flooding and drought – any of which may, or may not, become more frequent or severe as a result of climate change
- Man-made hazards: terrorism, plane crashes, theft and accidental damage
- Other: loss of power or other key resource as a result of either natural or man-made activity, such as a cyber-attack

These may result in:

- Contamination of raw water sources
- Contamination of the potable water supply
- Failure of any part of the water supply system (water treatments works, raw water or potable water storage reservoirs and / or the network of distribution and supply pipes)

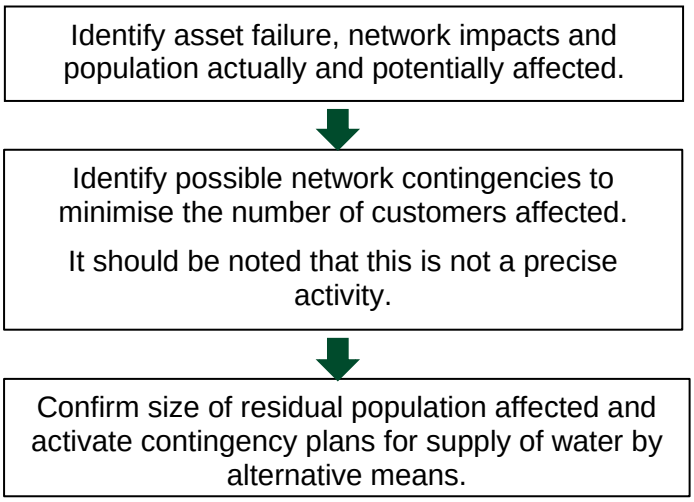
These risks may manifest themselves as either ‘rising tide’ or sudden impact events.

10.3 Risk Mitigation

The likelihood of a major disruption to London's piped water supply is mitigated by (amongst other things) the resilience inherent in London's distribution network which offers the opportunity for water to be provided through a number of different supply routes.

In the event of a failure, however, water companies will follow the same generic process with a view to minimising the population affected.

10.3.1 Water Company Risk Mitigation Process



Resilience partners may be contacted at any stage during this process depending on the time, location, cause and scale of the incident, population affected, and other known risk factors.

10.4 Sensitive site considerations

The SEMD provides guidance on the identification of Sensitive customers and requires that water companies prioritise their needs. Sensitive Customers include households with water dependent residents, hospitals, prisons, care/nursing homes, educational establishments, and farms/ abattoirs with commercial livestock. In any water supply disruption incident, the needs of this group are paramount, and multi-agency working will be required to ensure that all such groups are identified.

11. Deployment of Alternative Water Supplies

11.1 Regulatory requirements

The SEMD stipulates domestic users should be provided with a minimum of 10 litres of potable water per person per day after 24 hours without water, rising to 20 litres per person per day after five days. In addition, water companies must prioritise provision of alternative supplies to 'Sensitive' customers such as schools, hospitals, prisons, and nursing/ care homes.

The number of individuals requiring the provision of water by alternative means will depend on the nature of the incident. For example, if there is a total disruption of supplies all domestic customers will need this provision. If the incident is due to a reduction in water quality leading to an advised restriction of use (e.g., Boil notice) then deployment of alternative supplies may be restricted to those who are vulnerable during this type of event. Restoration of mains water supplies are dependent upon the availability of the power supply. If there is a power outage which requires an intermittent restoration, the mains water supply may also be restored intermittently.

There is no provision for commercial / business users.

11.2 Vulnerable and sensitive customers

It is likely that alternative water supplies to vulnerable people will be provided in the form of bottled water, whilst water to the general public will be provided via static tanks although these arrangements may vary depending on the availability of supplies, availability of resources and the location and distribution of the population affected.

Sensitive customers may be supplied with water via tankers, static tanks and / or bottles depending on need and availability of resources. They should pre-register for this service with their water supplier (i.e., the organisation to which they pay their bills).

11.3 Roles and responsibilities

During an interruption to water supply, the Water Company(ies) will assess the need for alternative water supply depending on the duration of the incident. Where the decision is taken to deploy alternative water, the aim is to use locations which are suitably located to the impacted area. Water is distributed in the form of packs of bottles from pallets for customers to collect on foot or by car, or in safe containers from a static tank. The stations are manned by trained employees of the Water Company(ies) and its partners.

Local authorities are the lead agency in the identification of water distribution points (whether in advance of or during an incident). Local authorities should consider developing local plans for water disruptions through pre-determined Hub Distribution Models.

Additional considerations for the setting up and running of alternative water distribution sites that will be the responsibility of the Water Company(ies) may include:

- Welfare facilities
- Gazebo for shelter
- Temporary lighting
- Branded signage
- Traffic flow management within site
- Site security arrangements

11.4 Site Requirements

Alternative water supplies distribution set up will depend on the location and nature of the incident and the size of the population impacted, but generically three types of sites will be required. Below is a summary of the different site types.

The responsibility for identification of appropriate sites that are designated for public collection rests with the Water Company, with the support of the Local Authority. Water delivery is usually via HGV and so site requirements are complex. Early consideration of suitable locations is advised.

More detail to be found in – Water Supply Disruption Hub Distribution Models: A Practical Guide for Emergency Planners.

Type of Site	Use	Management / Access	Key Logistical Requirements
Bulk deployment centres	24hr logistics site for reception, storage and redeployment of water tankers, bottled water and equipment	Managed by the Water Company / logistics lead No public access	Must have road access for large vehicles (tankers and flat-bed lorries) and be close to major route network

Type of Site	Use	Management / Access	Key Logistical Requirements
Large public water collection sites	Public water collection sites with facility for safe vehicle and pedestrian access	Managed by the Water Company Must have access for smaller water tankers and delivery vehicles	Close proximity to affected area. Access for HGVs Must have sufficient space to separate vehicles and pedestrian access (or be used solely for one or the other)
Pedestrian access water collection sites	'Local' sites from which the public can safely collect water.	Managed by the Water Company These sites may be as simple as a single static tank situated at the side of the road in an area which is cordoned off from / not accessible by traffic Must have access for small water tankers to replenish supplies	Close proximity to affected area with safe access for pedestrians when travelling to and from and collecting water. Access for HGVs Narrow roads and cul-de-sacs should be avoided

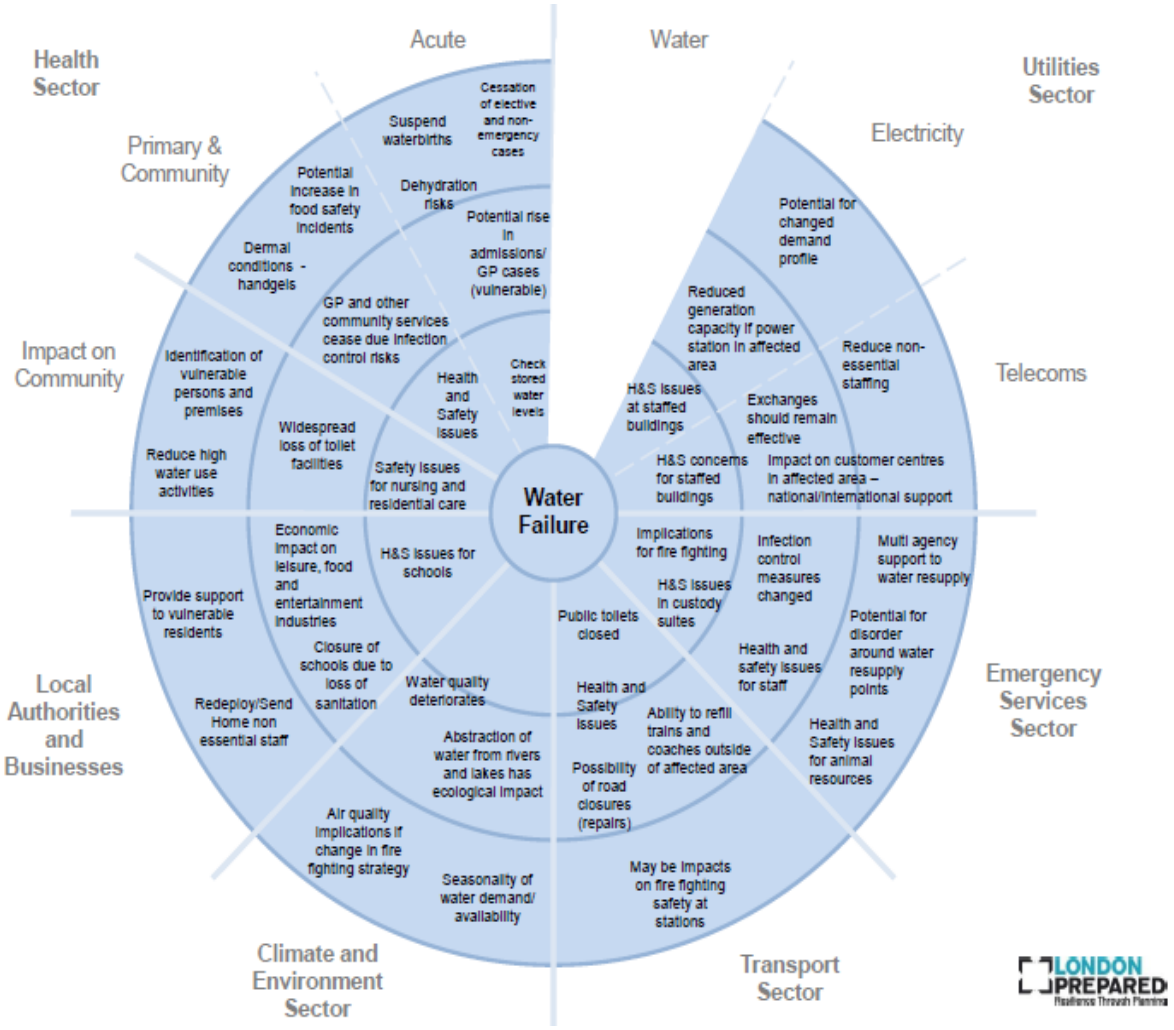
Annex 1 - Water Company guidance on the METHANE model for situational awareness

M	Has a Major Incident been declared? • command structure - Strategic Liaison Officer name and contact details • strategy - initial water company response and recovery strategy • Partnership Call / SCG - suggested time for first meeting and chair confirmation • notification of incident to impacted / potentially impacted local authorities • is assistance from other responders required?
E	Exact Location or geographic area of the incident • exact location of asset failure or network impact • cause of the outage, if known (e.g. burst main / pump failure / power supply issue)
T	Type of incident Scale (current and potential future scale) • the geographical extent and potential duration • the number of properties and persons affected* • sensitive sites affected, if known (e.g. hospitals, schools, nursing homes, GP surgeries) • stability of the situation and potential scale of impacts if it gets worse • level of response being activated (ranging from Level 1 - Monitoring the situation and sharing information to Level 3 - Strategic Coordinating Group) Duration • anticipated duration of the outage • estimated restoration time or if in stages, for each restoration stage • key milestones or checkpoint times and demand peaks
H	Hazards – present, potential or suspected • other risk factors (e.g. adverse weather / unavailability of resources) • contamination issues • flooding
A	Access – routes that are safe to use • areas / routes affected • road closures as a result of incident / impacting access for responders
N	Numbers impacted (estimated or confirmed) • of properties and persons affected* • sensitive sites affected, if known (e.g. hospitals, schools, nursing homes, GP surgeries)
E	Emergency services and responders • those currently present / notified and those required to be • those that may be impacted as a result

*Water companies work on the basis of estimating 2.2 people for every property. It is important to distinguish if the numbers affected relates to properties, or people.

Annex 2 – London Resilience Partnership Anytown Utilities Interdependencies Project

London Resilience Partnership Anytown Utilities Interdependencies Project
Water Failure Ripple Diagram – illustrating the impacts of a water supply disruption incident.



For information, please contact:

LONDON RESILIENCE GROUP

London Fire Brigade Headquarters

169 Union Street

London

SE1 0LL

LondonResilience@london-fire.gov.uk

www.london.gov.uk

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.