



# Data Challenges of July 2021 London Flooding

UDG Annual Conference 2023



# Agenda

- 1 Summary of Event
- 2 Summary of Data Issues
- 3 Blockers
- 4 Recommendations
- 5 Reflections

# Summary of Events





# Summary of Events

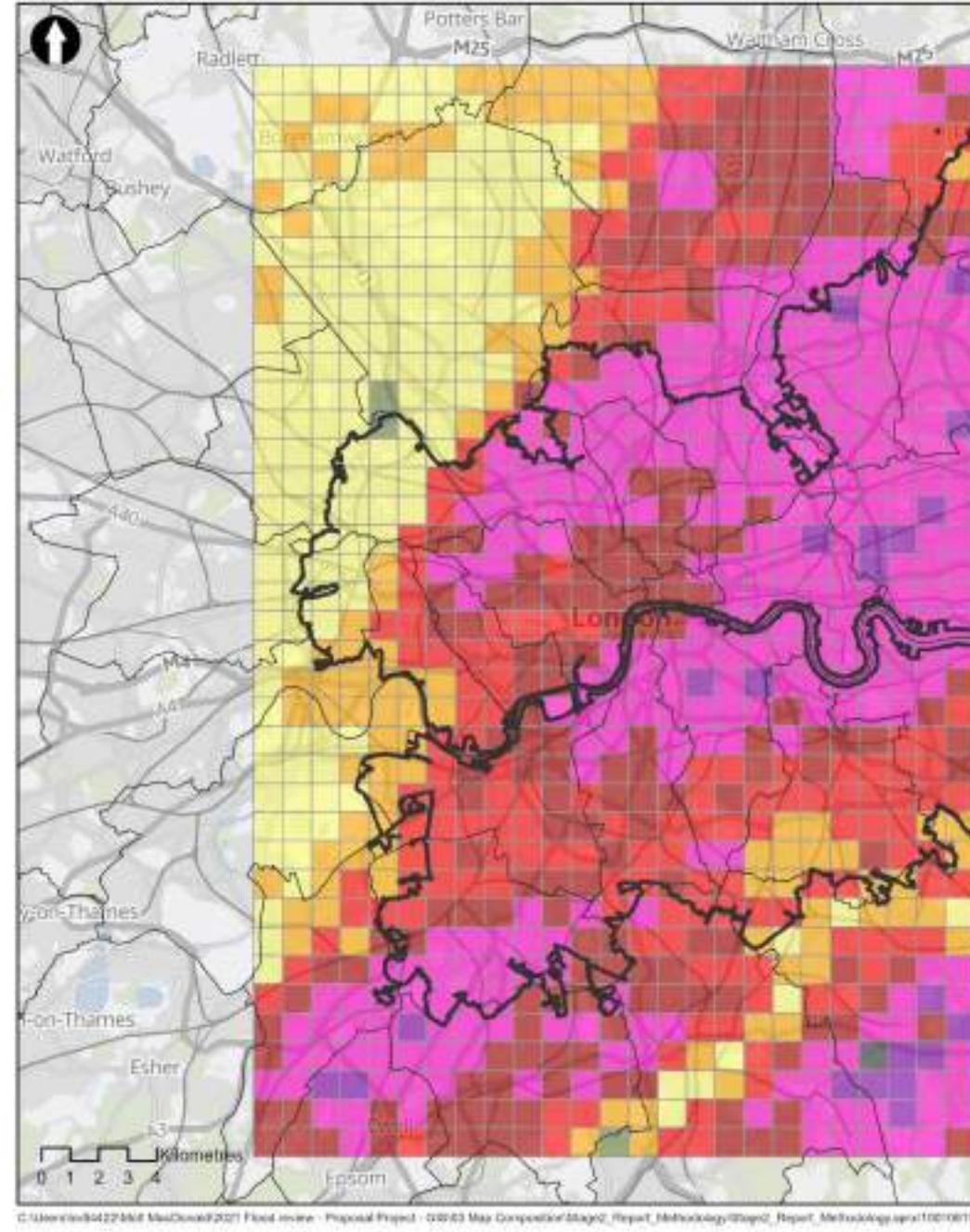
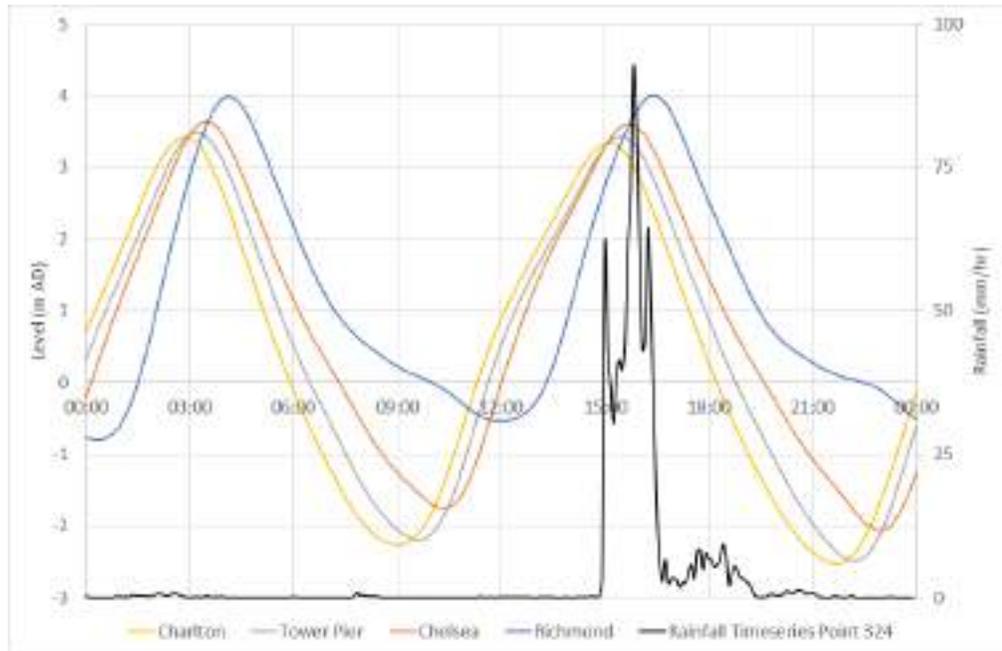
12<sup>th</sup> July

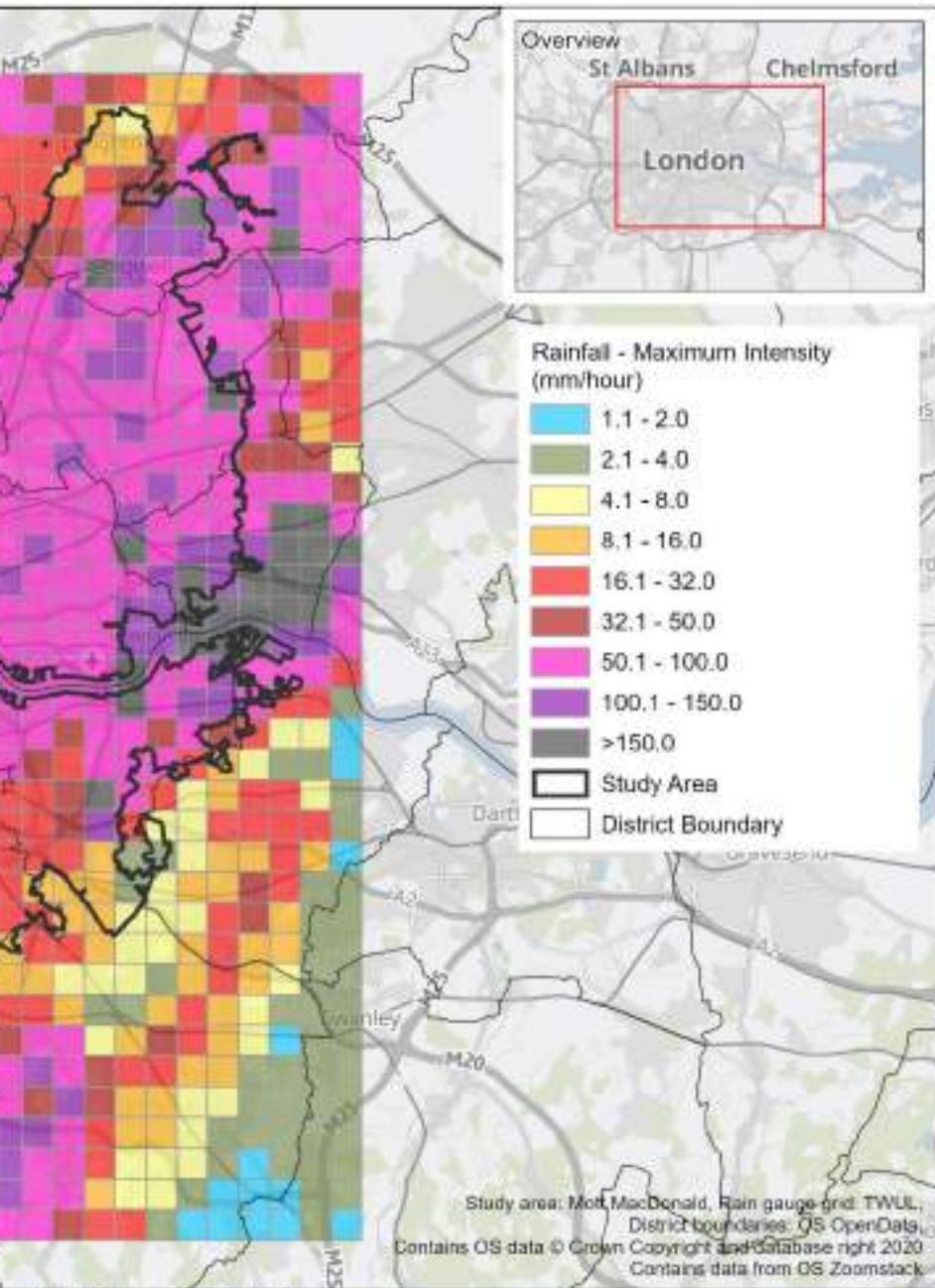
- 2 months of rain fell in 2 hours.
- Rainfall exceeded 90 mm/hr, > 1 in 400 year event.
- Rainfall coincided with high tide
- The floods affecting over 1,500 properties, as well as infrastructure such as hospitals and Underground stations.
- London Boroughs of Camden, Hammersmith and Fulham, City of Westminster and Royal Borough of Kensington and Chelsea

# Summary of Events

25<sup>th</sup> July

- 2 months of rain fell in 2 hours.
- Rainfall exceeded 50 mm/hr
- Greater geographical area affected - Bayswater
- Rainfall coincided with high tide.
- Major hospitals, infrastructure and tube stations





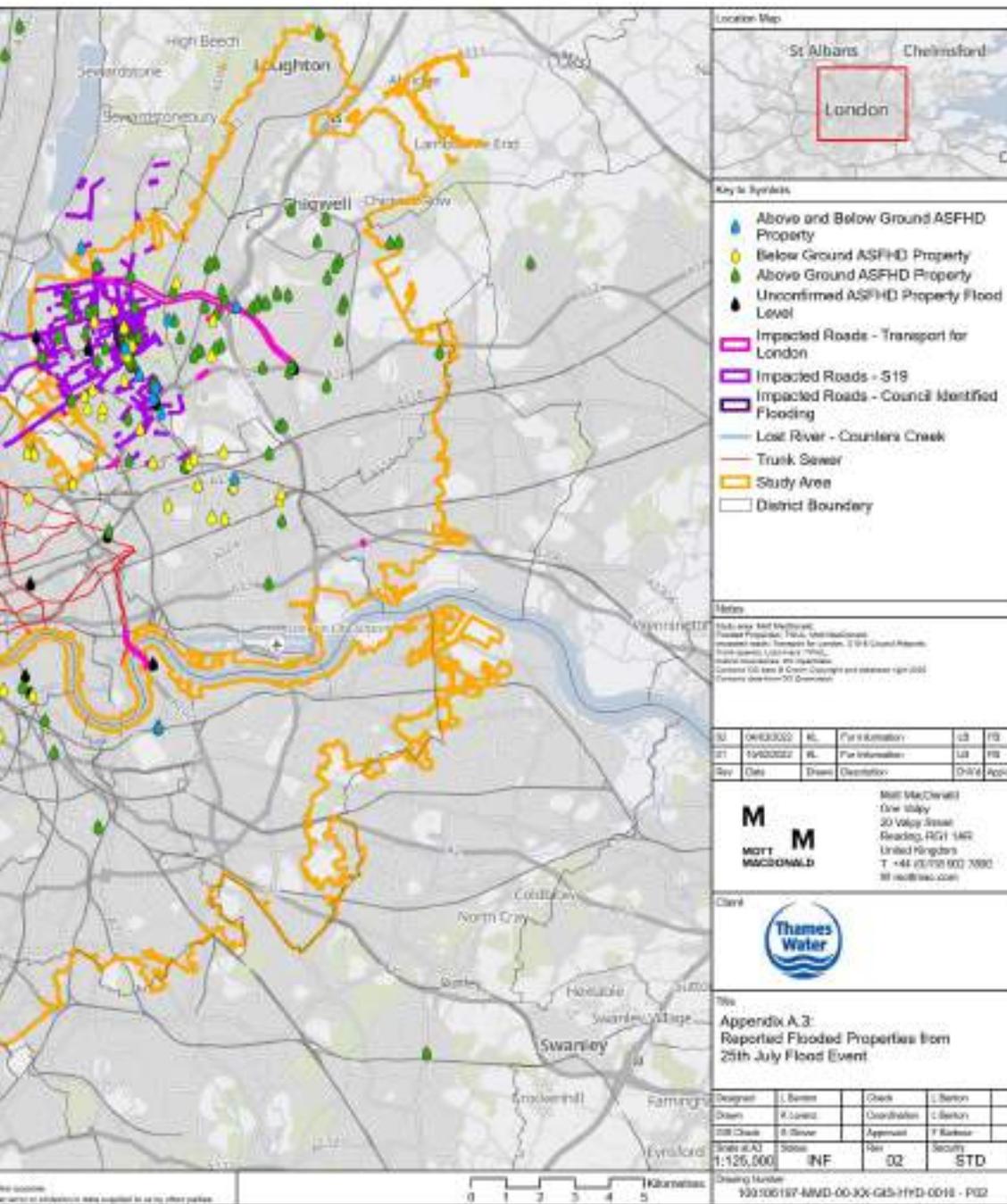
# Complications

## Both Events

- Huge area affected
- Amber warnings did not need mobilisation
- No idea where it will hit
- Events happened outside working day
- More than one responsible party
- Interconnectivity
- Perceived pump station failing
- Questions about change in scheme approach
- **Needed a review!**

# Summary of Data Issues





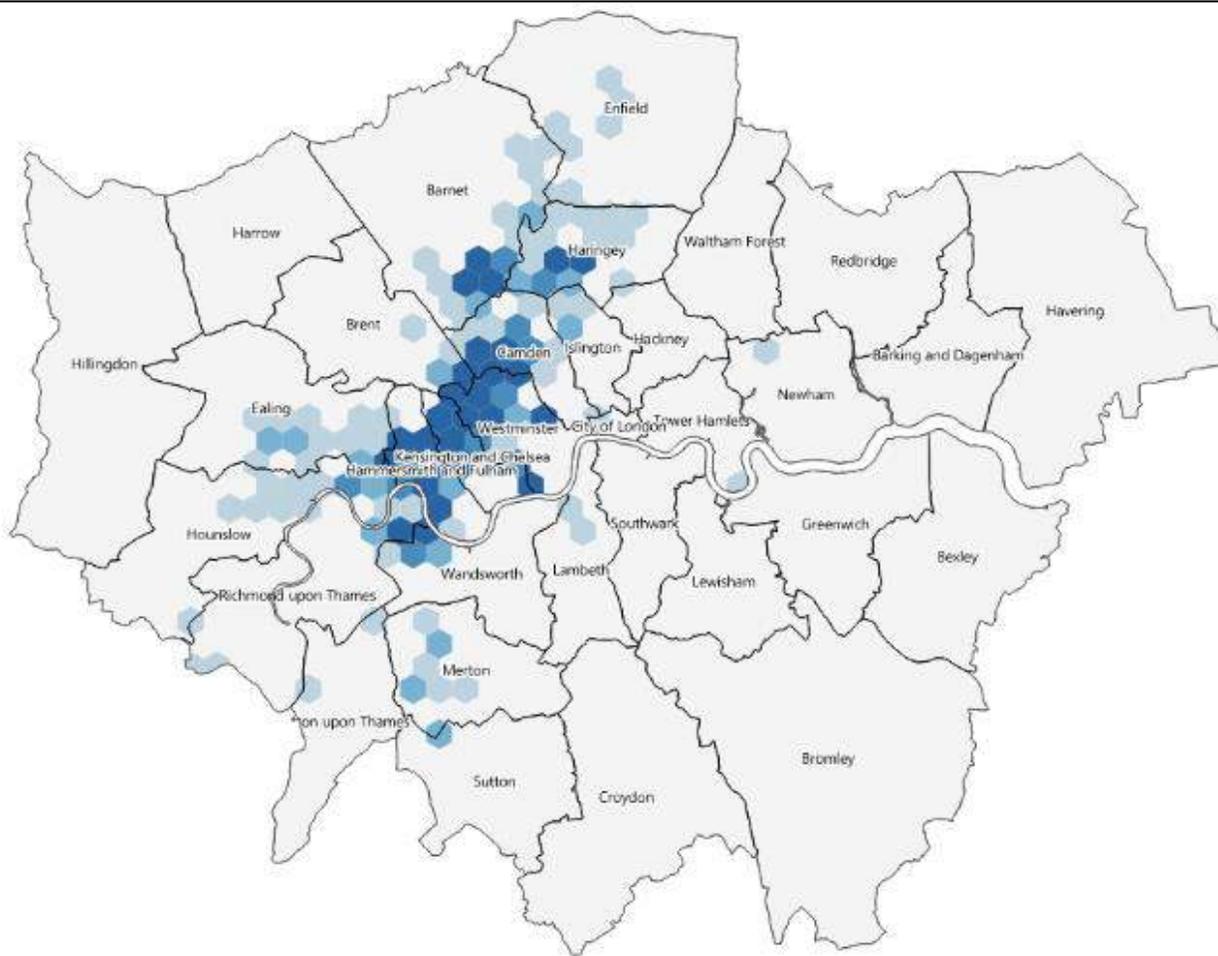
# Understanding what happened

During the event

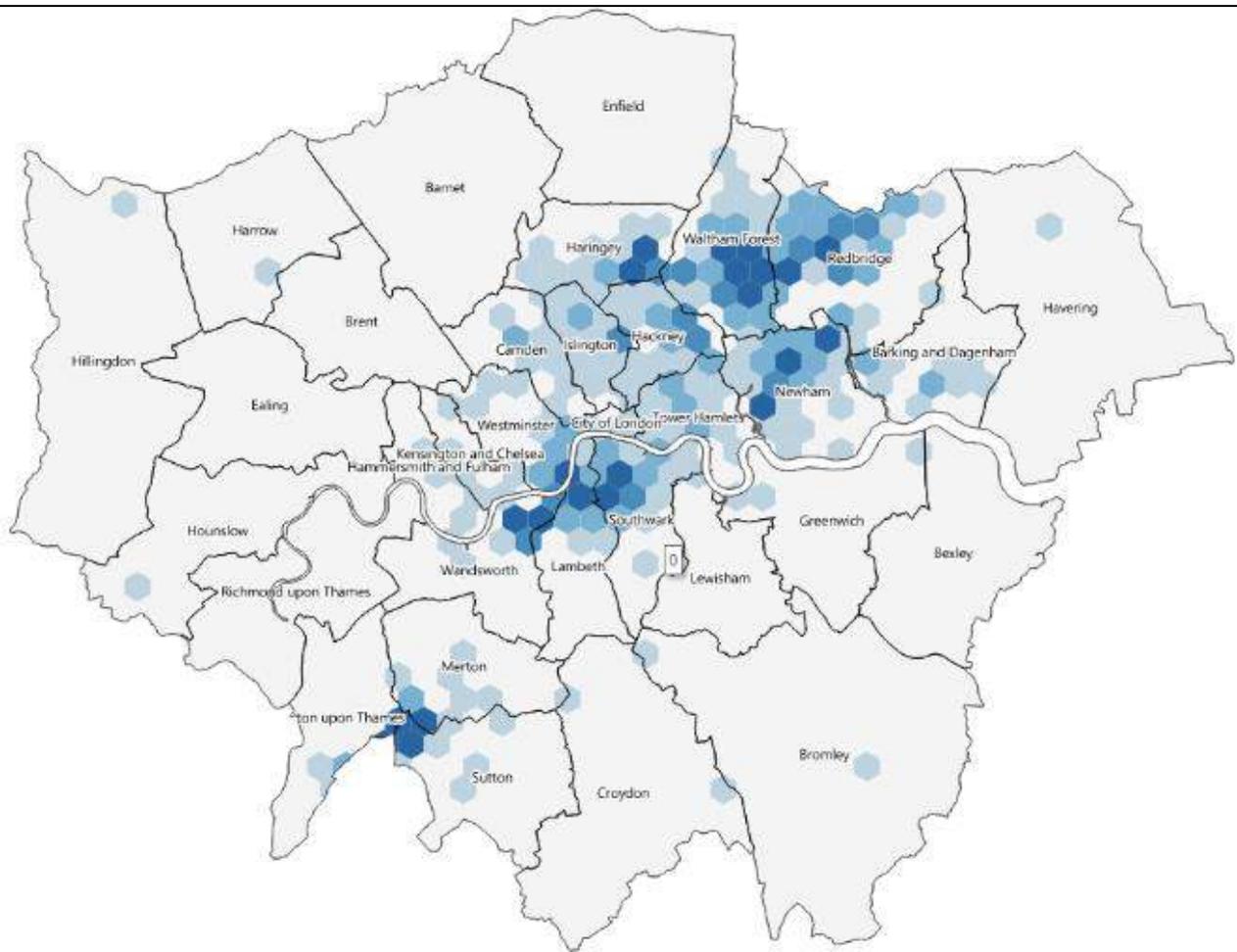
- Water rising suddenly
- Calls coming into Fire brigade, Local Authority and Thames Water
- Thames Water call centre overwhelmed
- Manual switch on of Lots Road Pump Station
- Lifting of manhole covers drained water
- Blocked gullies
- Misreporting cause

# London Fire Brigade Calls

12<sup>th</sup> July



25<sup>th</sup> July



Examples of feedback to the Review related to flooding

“Once the manhole cover was lifted, all the water drained away in seconds, it must have been blocked on the surface”

Resident, Walthamstow

“The survey crew told us we would be fitted with...” Example of typical feedback related to discrepancy of official communications and individual survey/clean up crews

“Once the pumps were turned on at Lots Road, the flood water disappeared”

Resident, Holland Park

“I was told I wouldn’t flood again because I was fitted with a Flooding Local Improvement Project (FLIP) but I did”

Resident, RBKC

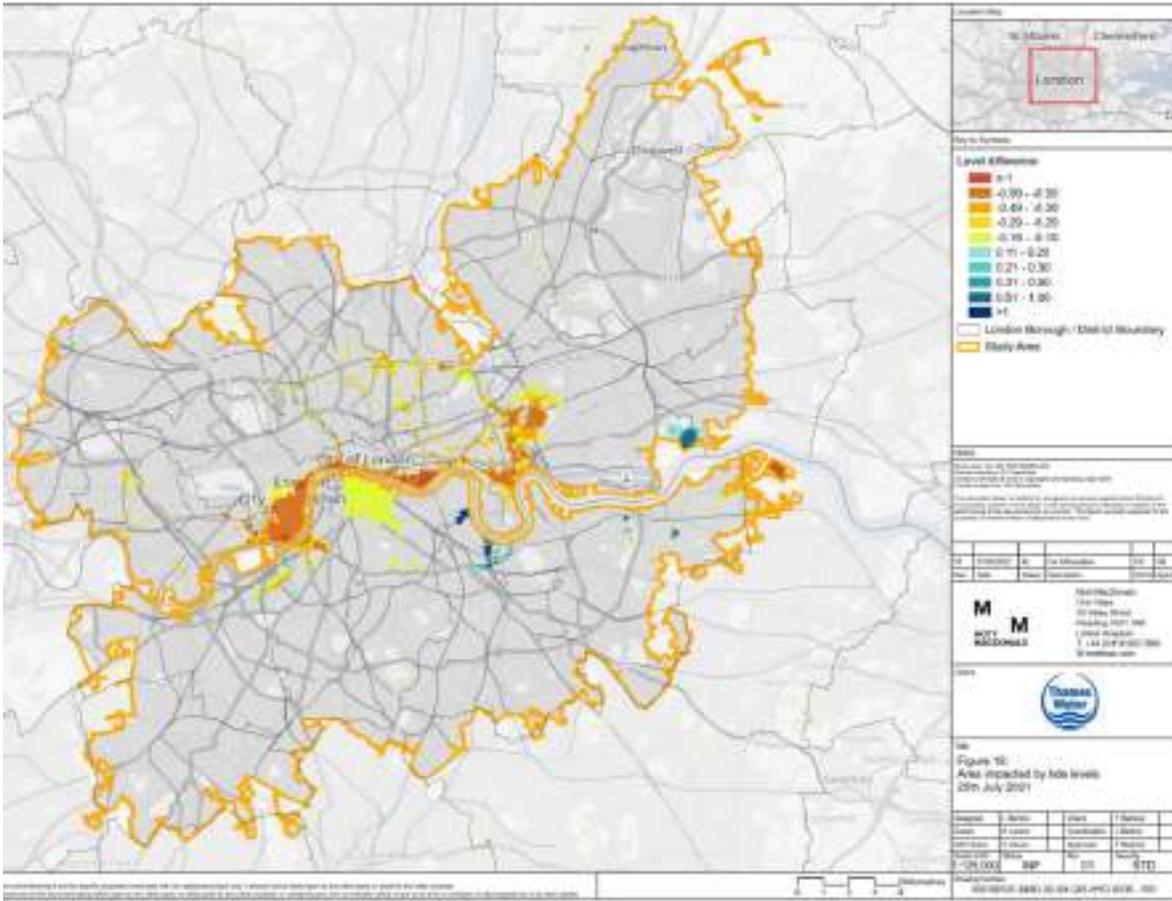
## Understanding what happened

After the event

- Consultation
  - Local Authorities
  - Thames Water
  - Residents
- Hard to identify sewer verses surface water flooding

# Understanding what happened

After the event



- Analysis
  - Tidal Impact
  - Pump Stations
  - Counter Creek
  - Blocked Gullies
  - Pipe blockages
  - 30% rainfall
- All concluded still significant event without

# Blockers



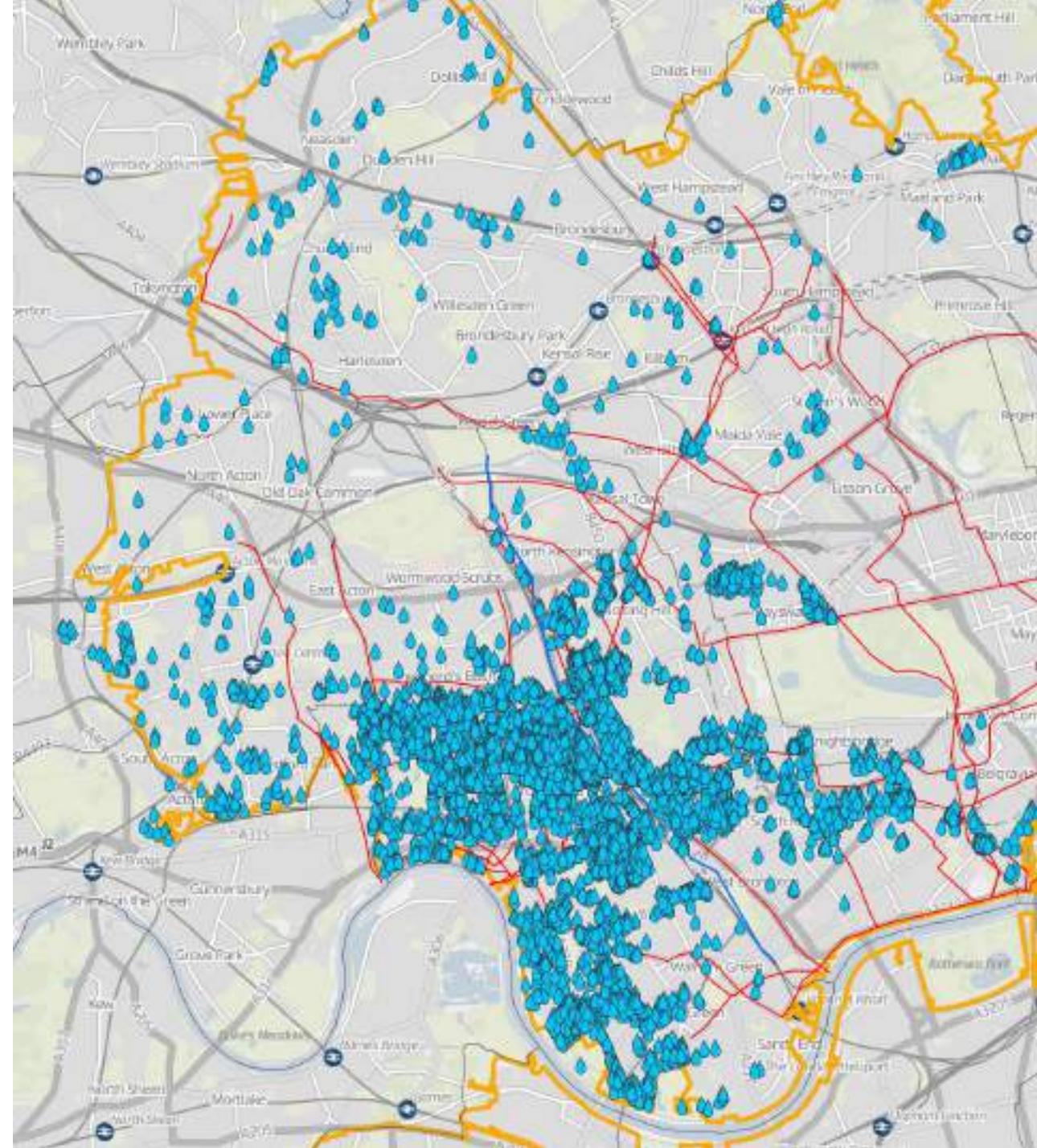


## Sharing data post event

- GDPR restrictions
- Different formats
- Confirming timezone of telemetry
- Model storage
  - TW ID model
  - 2D for scheme design
  - LA find models from SWMP

# Input Data for analysis

- Basements Hammersmith and Fulham and Kensington and Chelsea
- TW base data - hard to gather
- Hard to keep up – planning
- 44,000
- 14,000 model predicts flooded 12<sup>th</sup> July
- 1400 reported



# Recommendations





## Review Recommendations (Jul 2022)

- Strategic Surface Water Management Group to assess criticality of strategic assets and assign required standard of protection
- Improve forecasting.
- Ensure that a common model environment is used so that shared risks between LLFAs and TW are well understood.
- Monitoring critical assets share live data to all.
- Establish a suitable data platform to host a single flooding history data for all.
- Establish a data sharing agreement between all which sets out what and how data is shared.

# Reflections





## Reflections

What has happened since

- The London Surface Water Strategic Group (LSWSG)
- Ensure that a common model environment is used so that shared risks between LLFAs and TW are well understood (P).
- Develop realtime information sharing (N)
- Develop a centralised store of asset information (P)
- Review Surface Water flood opportunity mapping and modelling coverage, agree priorities. (P)
- Establish a data sharing agreement (P)
- Flooding Local Improvement Projects (FLIPS) (P)

# Challenge

- Systems thinking
- Standard industry asset database
- Standard industry flood records
  
- 15 years since Pitt Review – have we moved forward?
- If not us then who?
- Ambitious enough?



# Thank You



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