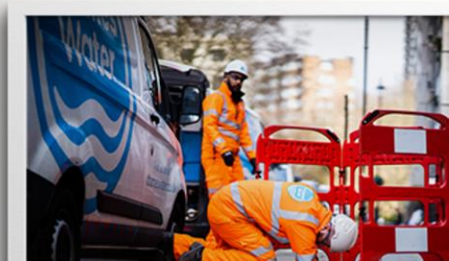
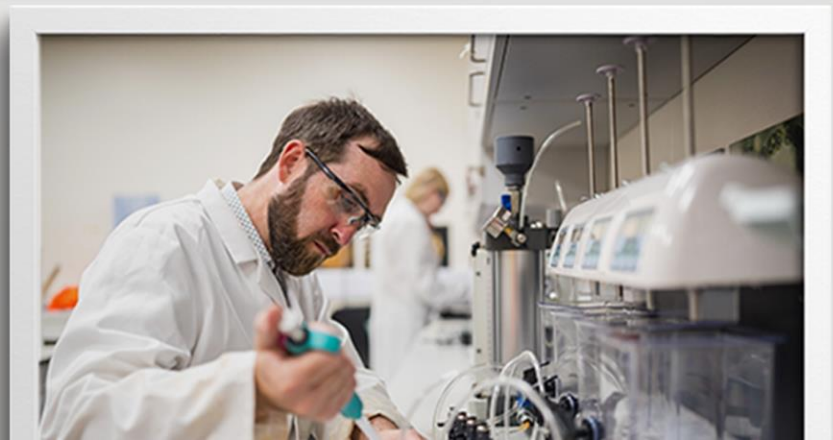
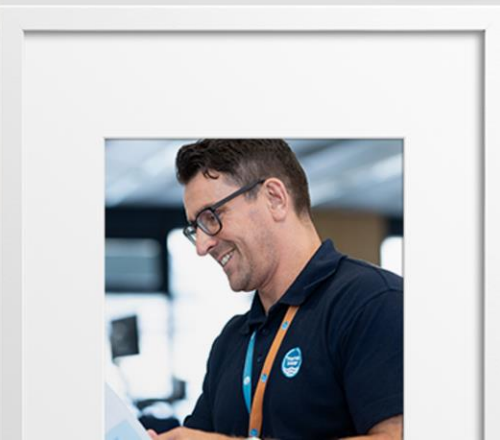
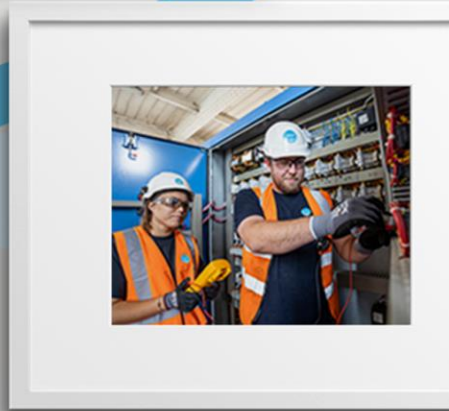
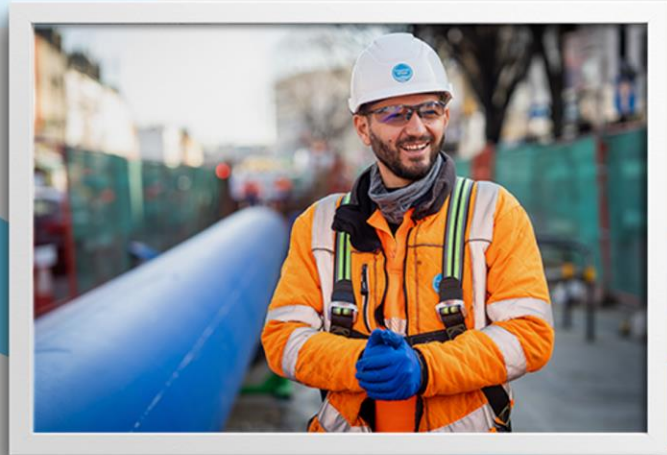
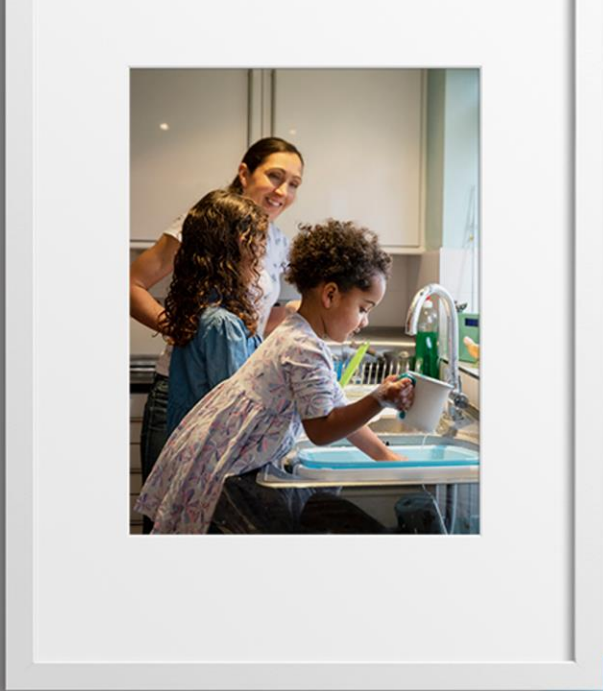
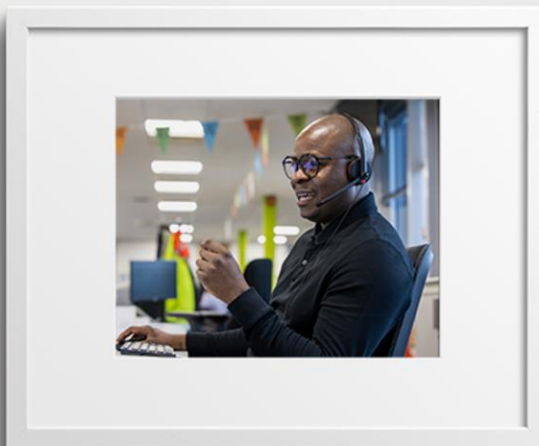


Mogden Catchment

Mogden Residents Meeting
25th January 2024



Agenda

Item	Description
1	Welcome and Introductions (Ashley Book)
2	Action Review (Lena Wallin / All)
3	Site Operational Updates including Environmental Update (Josh Callaway)
4	Nuisance Updates (Lena Wallin / Chantelle Dixon)
5	Major Projects Update (Eugene Cottrell)
6	AOB & Close (Ashley Book / All)
7	Teddington DRA Update (Conor Loughney/Gareth Bennett)



Welcome & Introductions

Action Review

Action Review

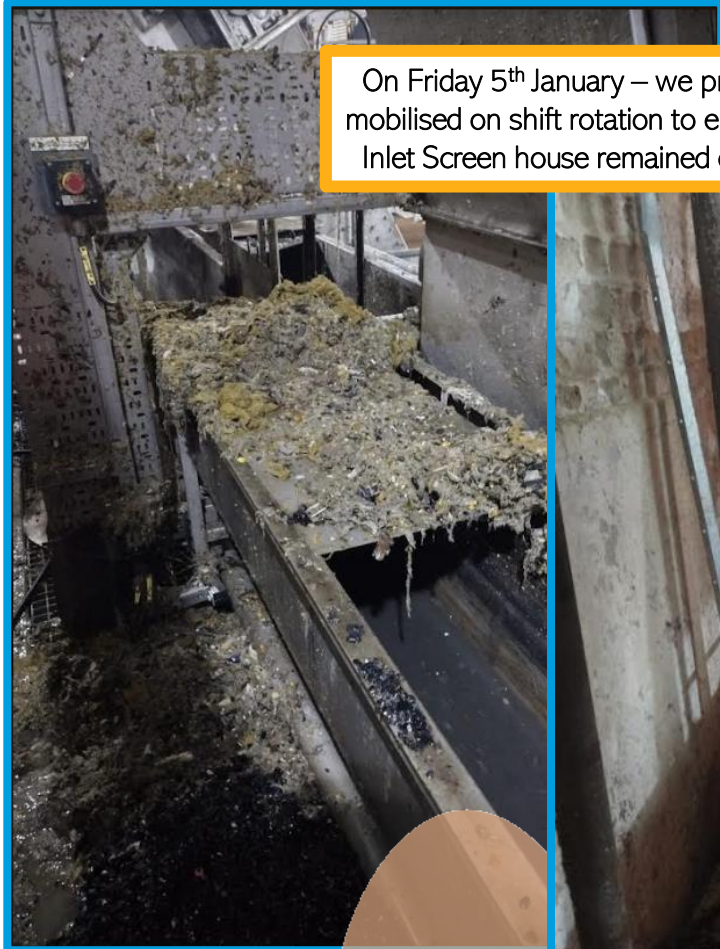
Mogden Residents Meeting Actions: October 2023

Raised by	Action Detail	Due Date	Action Owner	Update	Closed?
Ruth Cadbury MP	Share full assesment on impact to the Duke of Northumberland river from the upgrade works on D Battery to air cooled systems.	Jan-24	David Bradshaw	Upgrade works not necessitated to submit Environmental Impact Assessment. TW and Kier hydraulic investigations highlight water abstracted is immensely small	Y
Ruth Cadbury MP	Re-circulate findings, learnings and improvements from the Duke of Northumberland flooding which occurred in February 2021 for discussion at next meeting	Jan-24	Lena Wallin	These were re-circulated on the following dates 3rd January 2024 & 30th October 2023 (printed a few copies for meeting) To answer and discuss any questions as part of this.	
Barry Edwards	EHO Reports on the odour control unit readings why are the action levels different to 0.015PPM and what happens when the breach the action levels why are some of the readings unknown.	Nov-24	Lena Wallin	Email sent to explain this. These readings are from the odour control unit exhaust, when the OCUs are installed the action levels for these are set on what the PPM would be at site boundary with air dispersal. As the readings are directly from the OCU the action levels are higher as no air dispersal has happened. The unkown readings are on the INLET and thats as we only base it on the OUTLET where all readings are provided for all OCUs that are in service.	
ALL	To be kept up to dates with developments on the Teddington DRA consultations	Jan-24	Lena Wallin	30/10 - Community information events shared with group at meeting and then sent across with notes and slides. Have put in a 30 min Q&A session for this group at this meeting.	
ALL	Terms of reference for Mogden residents meeting	Jan-24	Lena Wallin	Re-circulated with meeting notes and slides on the 30th October and 3rd January.	Y
Heather Flint	Key for acronyms used in presentations	Jan-24	Lena Wallin	We have provided a small acronym / jargon buster and reduced jargon on slides	Y

Operational update – ‘Storm Henk’ Response at Mogden STW



Zero incidents
Zero harm
Zero compromise
Keeping you healthy and safe, every day at work.



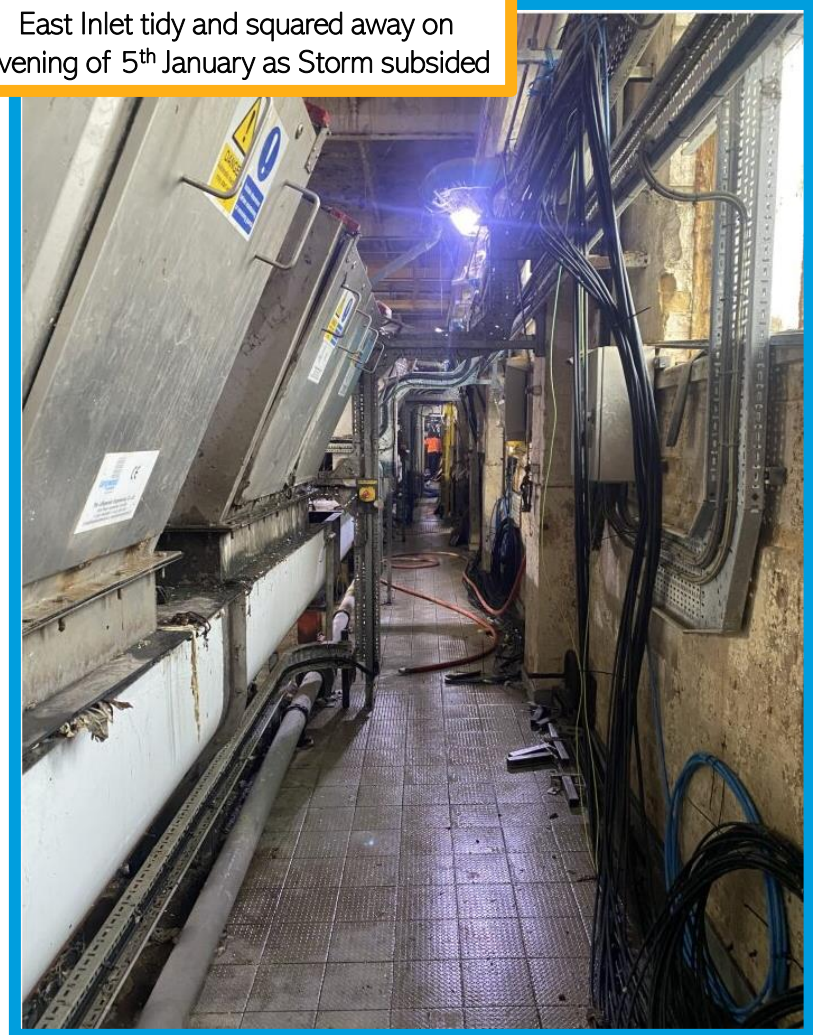
On Friday 5th January – we proactively mobilised on shift rotation to ensure East Inlet Screen house remained operable.



We removed an estimated 10 tons in road aggregate and asphalt from our screens, and an additional 20 tons of ‘unflushables’



East Inlet tidy and squared away on evening of 5th January as Storm subsided



Site Operational Update

Operational update – Glossary and Jargon Buster



Zero incidents
Zero harm
Zero compromise
 Keeping you healthy and safe, every day at work.

Acronym	Full Title	Explanation
STW	Sewage Treatment Works	The entire area and process of a Treatment Facility, for example Mogden STW.
FtFT	Flow to Full Treatment	The maximum flow that Mogden STW can process, it is measured at 1,064,000,000 litres per day
PST	Primary Settlement Tanks	Tanks that sewage is retained in to allow Raw Sludge to 'settle' in, to be taken away for processing.
ASP	Activated Sludge Process	The bubbling, fermentation part of the Treatment process which removes Ammonia and Phosphorus
OCU	Odour Control Unit	A chemical or biological scrubbing machine designed to reduce the presence of odorous gases (Hydrogen Sulphide) from sewage gas.
OMAC	Odour Management Assessment Check	Pre-emptive checks undertaken at Mogden STW by our team to assess the odour impact of any critical works.
CPAC	Compliance Process Assessment Check	Pre-emptive checks undertaken at Mogden STW by our team to assess the environmental compliance impact of any critical works.
FST	Final Settlement Tank	Also known as a 'Clarifier', these characteristic circular tanks provide a final polish by removing residual organics after Aeration.
PAS	Pasteurisation Plant	An industrial process which heats sludge (organic matter taken from the PSTs and FSTs) to kill off any pathogens prior to Digestion.
---	Biogas	The calorific byproduct of digesting Sewage Sludge. At Mogden STW, we use this in engines and recently in our Gas-to-Grid facility

Acronym	Full Title	Explanation
G2G	Gas-to-Grid	A new facility, commissioned in December 2023, which 'uprates' our BioGas into Natural Gas to be exported directly into the Gas Grid
MCC	Motor Control Cabinet	Automation machines that convert electrical power into controllable electricity for the site
COMAH	Control of Major Accident Hazards	Safety Legislation which governs how we mitigate Dangerous Substances at Mogden, and how we prepare for potential emergency
CHP	Combined Heat and Power Engine	Combustion Engines that are fed with BioGas to produce electricity. We have 3 at Mogden that created the equivalent to 15,000 homes' worth of power in 2023!
-	Consented Discharge	A legally-permitted discharge of sewage to river that occurs in high rainfall and when the Works has reached its FtFT
-	Storm Effluent	The sewage that is discharged into the River Thames during a Consented Discharge – please see photo below



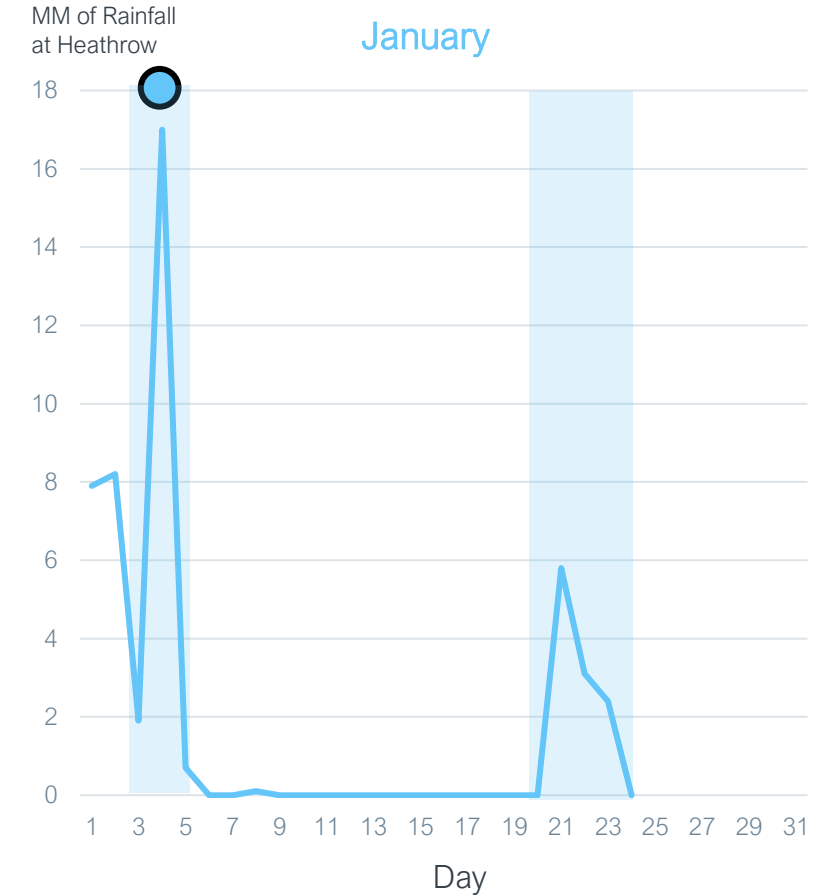
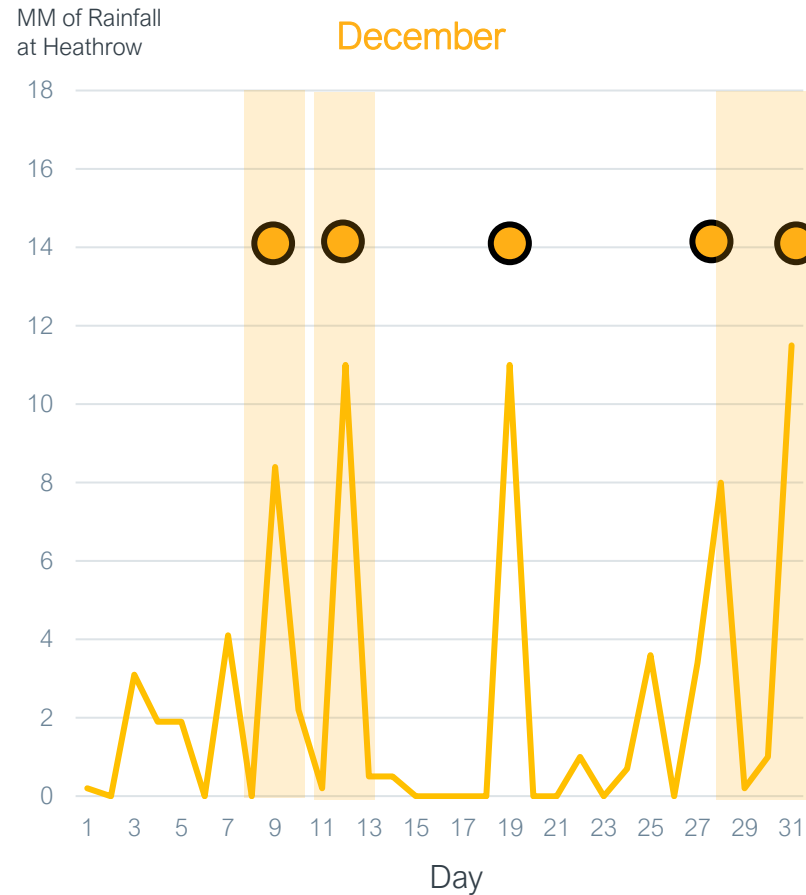
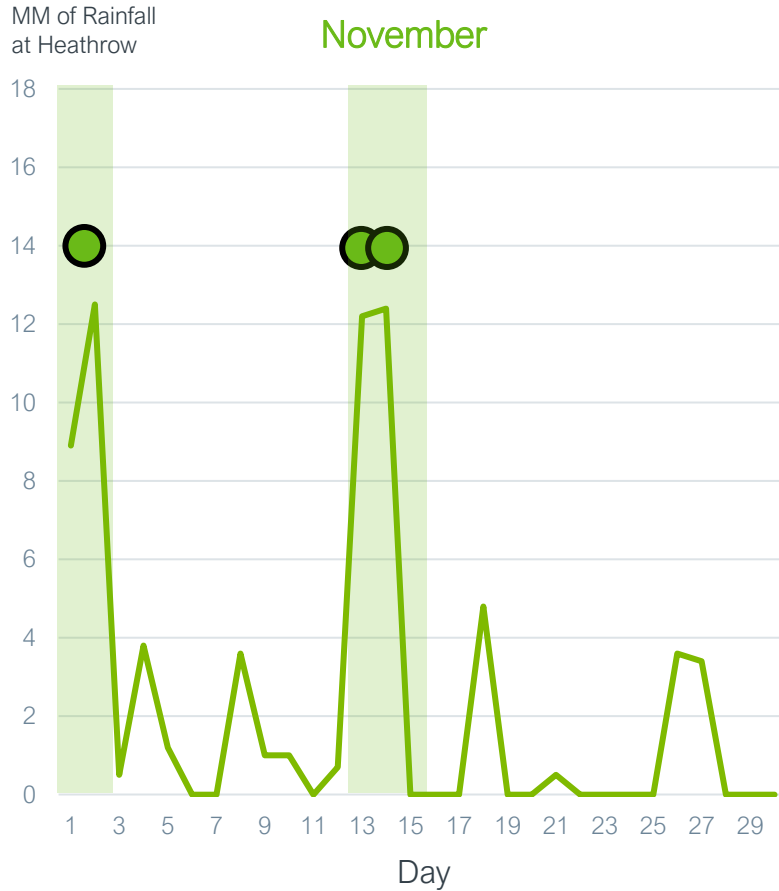
'Storm Effluent' sampled during a 'Consented Discharge' on 20th September 2023




Note that this 'sewage' has been heavily diluted by significant rainfall.

Operational update – Consented Discharge Vs. Rainfall Data



Zero incidents
Zero harm
Zero compromise
Keeping you healthy and safe, every day at work.






 } Consented Discharge to River Thames with STW at Flow to Full Treatment

Named Storms since November 2023

 = Storm Ciaran (1-2 November)


 = Storm Debi (13 November)

 = Storm Elin (9 December)

 = Storm Fergus (10 December)

 = Storm Gerrit (27-28 December)

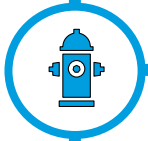
 = Storm Henk (2 January)

 = Storm Isha (19-22 January)

Headline – To ensure that Mogden has adequate preparation for, and robust plans to, potential emergency process and safety scenarios



Collaboration with London Fire Brigade for use of Mogden STW's restricted and confined spaces for training.



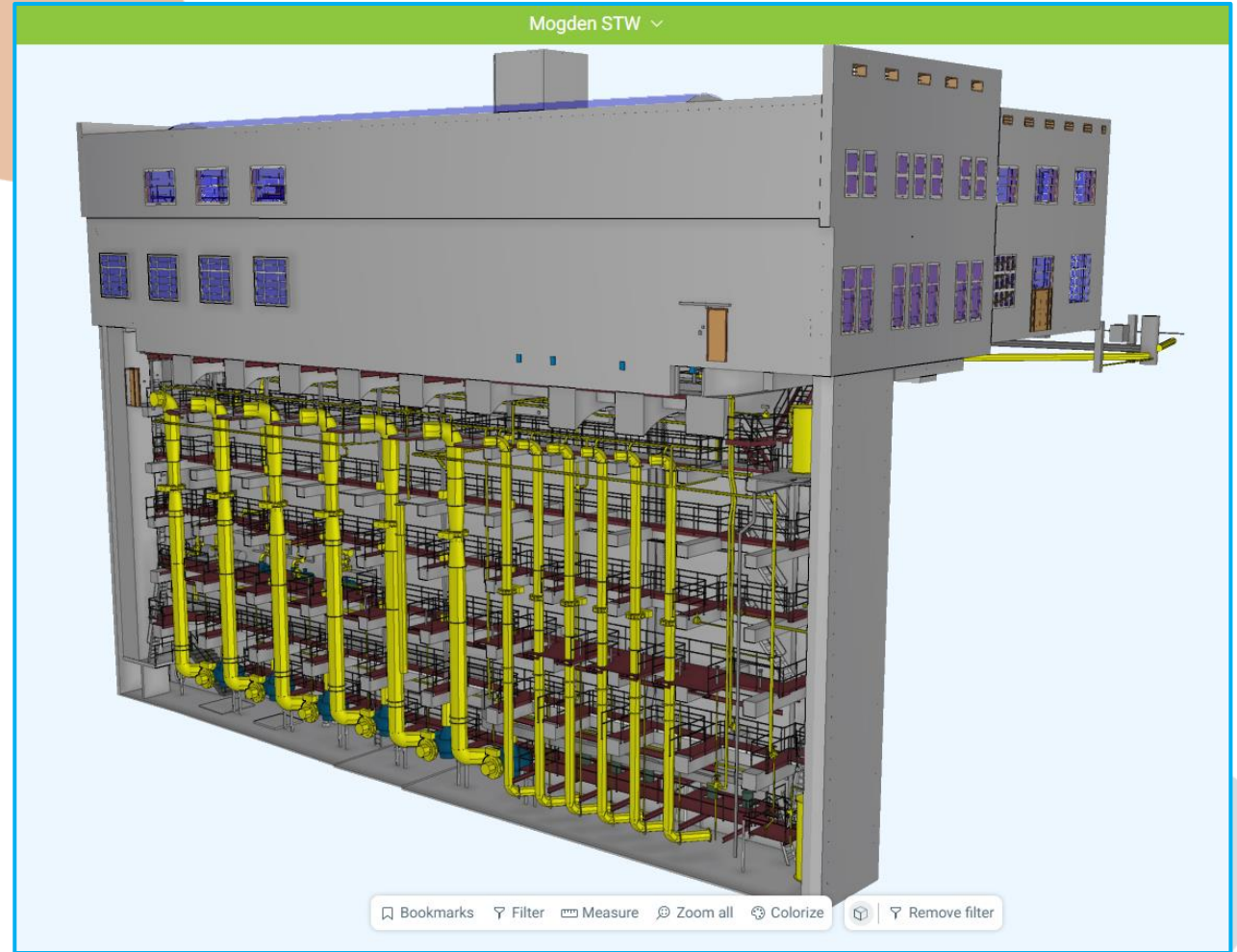
Proactive review of our process and safety management plans alongside LFB – *e.g. attending site in February for RAS Gallery cleanout.*



'Wargaming' of response scenarios with emergency services. *Police Drone Flight on 25th January for Terrorism response*



SHE6J emergency exercises undertaken monthly now led by ex-Military Services manager



Operational update – Site Pride and Operational Impact Liaison (OIL) Progress



Zero incidents
Zero harm
Zero compromise
Keeping you healthy and safe, every day at work.

Summary of the OIL – Created in September 2023, the Operational Impact Liaison (OIL) role is designed to proactively lead on nuisance issues and to further develop key local stakeholder relationships.

Works since Appointment

- Fly/Mosquito Report actions reduced from 40+ down to 2 outstanding (new EX units in PSTs and Digesters etc...)
- Biffa Skips more closely managed and all mapped out. Skip management significantly improved.
- Establishment of Customer Response Task Force.
- Ongoing review on Odour Management Plant

Upcoming

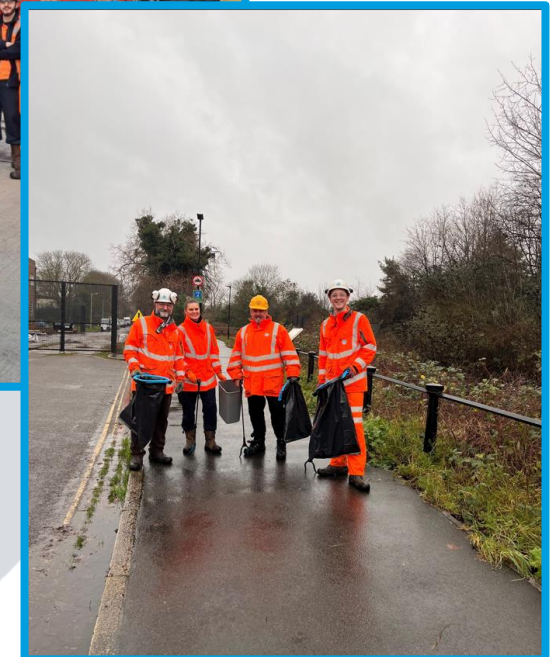
- Development of Summer Strategy and 'Schedule of Works'
- Implementation of Odour Management Assessment Checks (OMAC).

Duke of Northumberland River Clean



West Inlet 'Site Sweep'

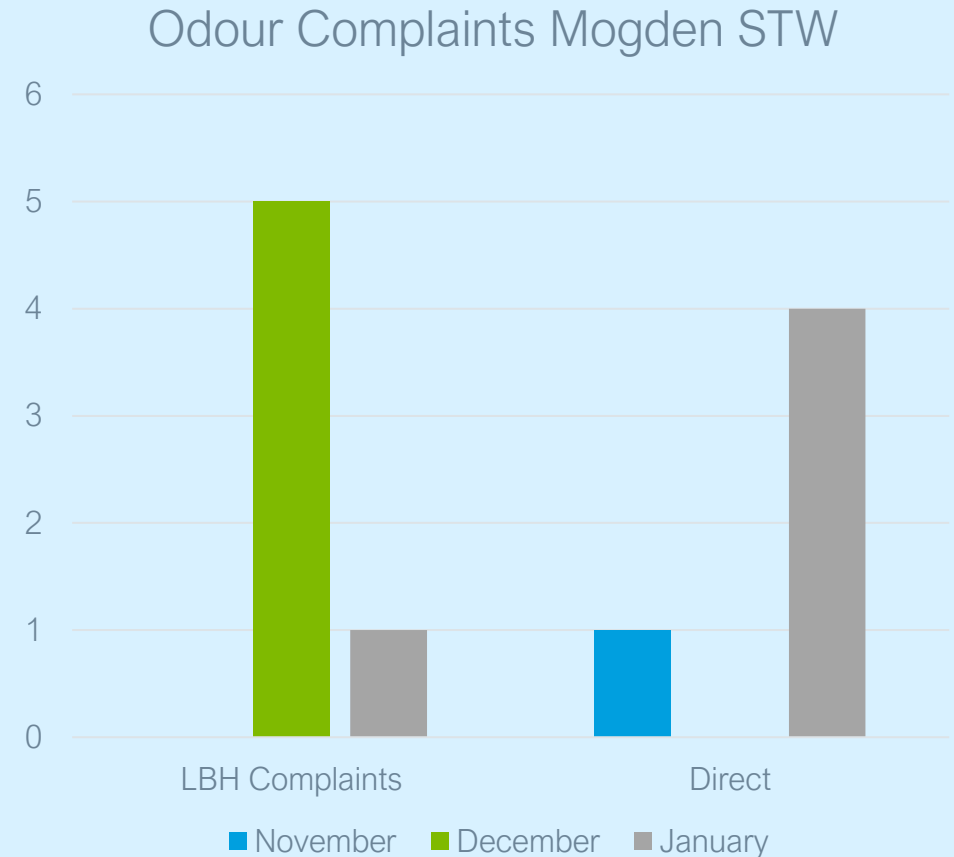
New Year's Day litter pick on footpath and Weaver's Close



Nuisance Update

Odour Complaints

- Recent odour complaints are coming from the Twickenham side of the STW.
- We have mitigation in place such as air dispersal units
- Issue with a vent from one of the sewers on site which we have instructed contractors to fix.
- Operational Impact Liaison now in place.
- Continuously looking at odour monitors for peaks and investigating pro-actively.



Fly & Mosquito Update

Schultmay
continue
operate on site
and are
currently on the
winter schedule
(Bi-Weekly)

There have
been no
customer
complaints
relating to
fly/mosquito in
Mogden in
2023.

We will continue
to pro-actively
monitor and
treat fly and
mosquitos
going into
2024.

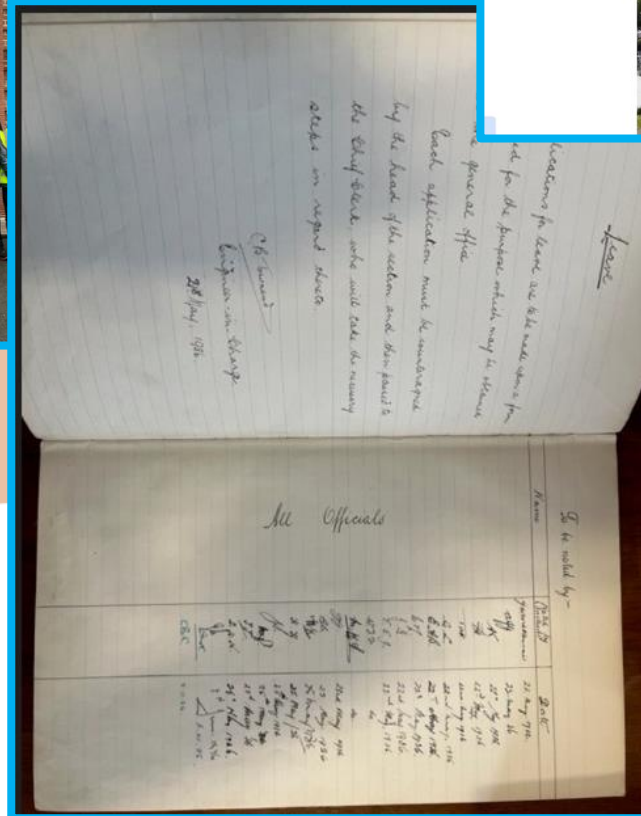
General and Stakeholder



Facilitation of Work Experience with Cranfield University

Upcoming Visits

- 'T Level' Engineering and Science Placements.
- The Isleworth Society
- The Kew Society

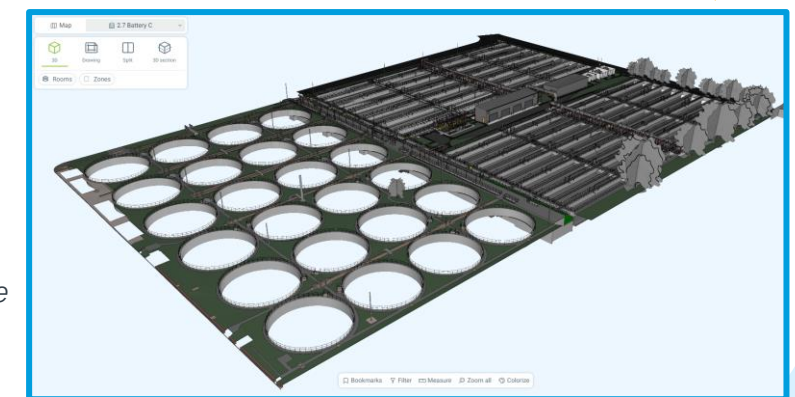


Mogden Gas-to-Grid went **LIVE** on 12th December 2023.

Ongoing modelling works for **flooding projection, emergency response and intelligent operation.**

Ongoing works to review, categorise, digitise and make public our engineering archives.

This document from 1936 details 'preparations on the expected use of Gas Masks'



Major Projects



Mogden Residents Association Meeting

Gas to Grid Project Update

25 January 2024

Mogden Gas to Grid

- Cadent approval of G2G plant granted – December 23
- 1 x week of commissioning
- 28-day reliability testing to start early February



The project objective is to convert excess biogas originating from the site into biomethane (**900m³/hr**) that can be used to provide the gas needs for **4,000 houses** in the local area. This substantially reduces carbon emissions and contributes to Thames Water achieving its Net Zero carbon target by 2030.

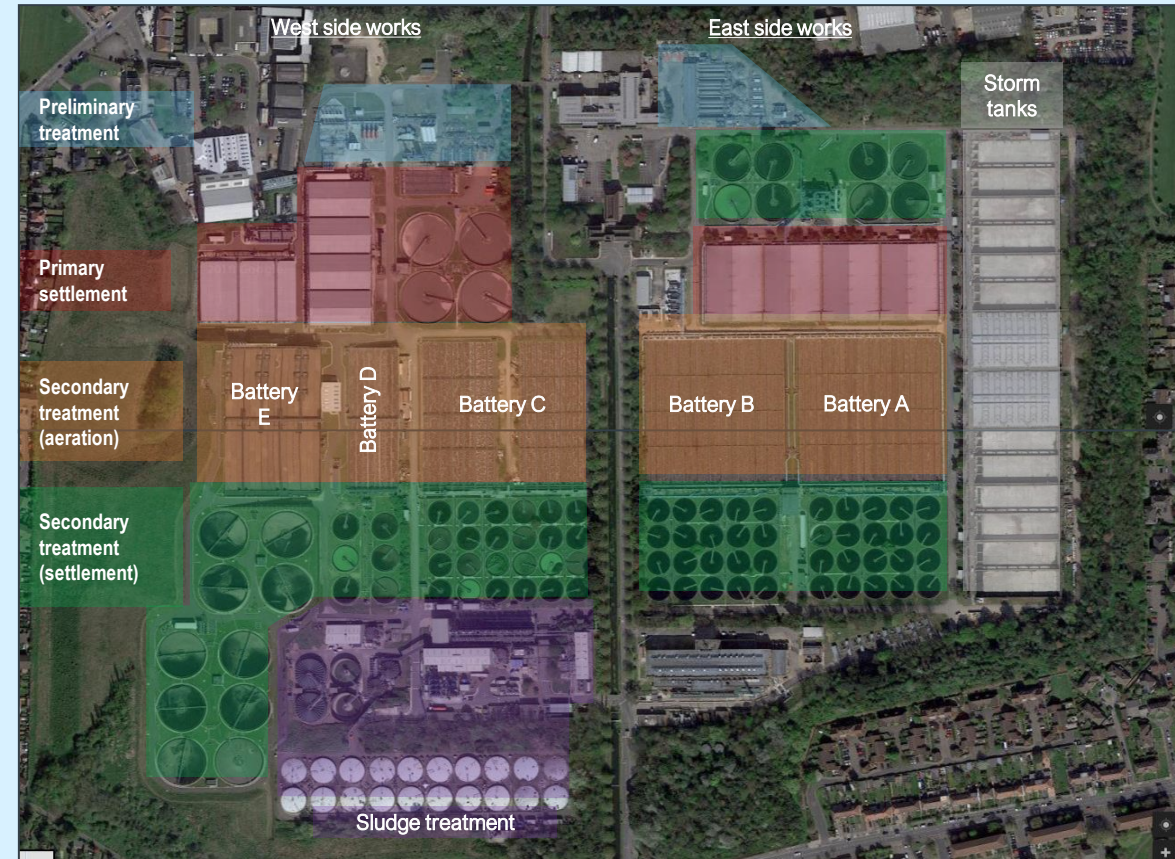


Mogden Residents Association Meeting Mogden AMP7 Resilience Project Update

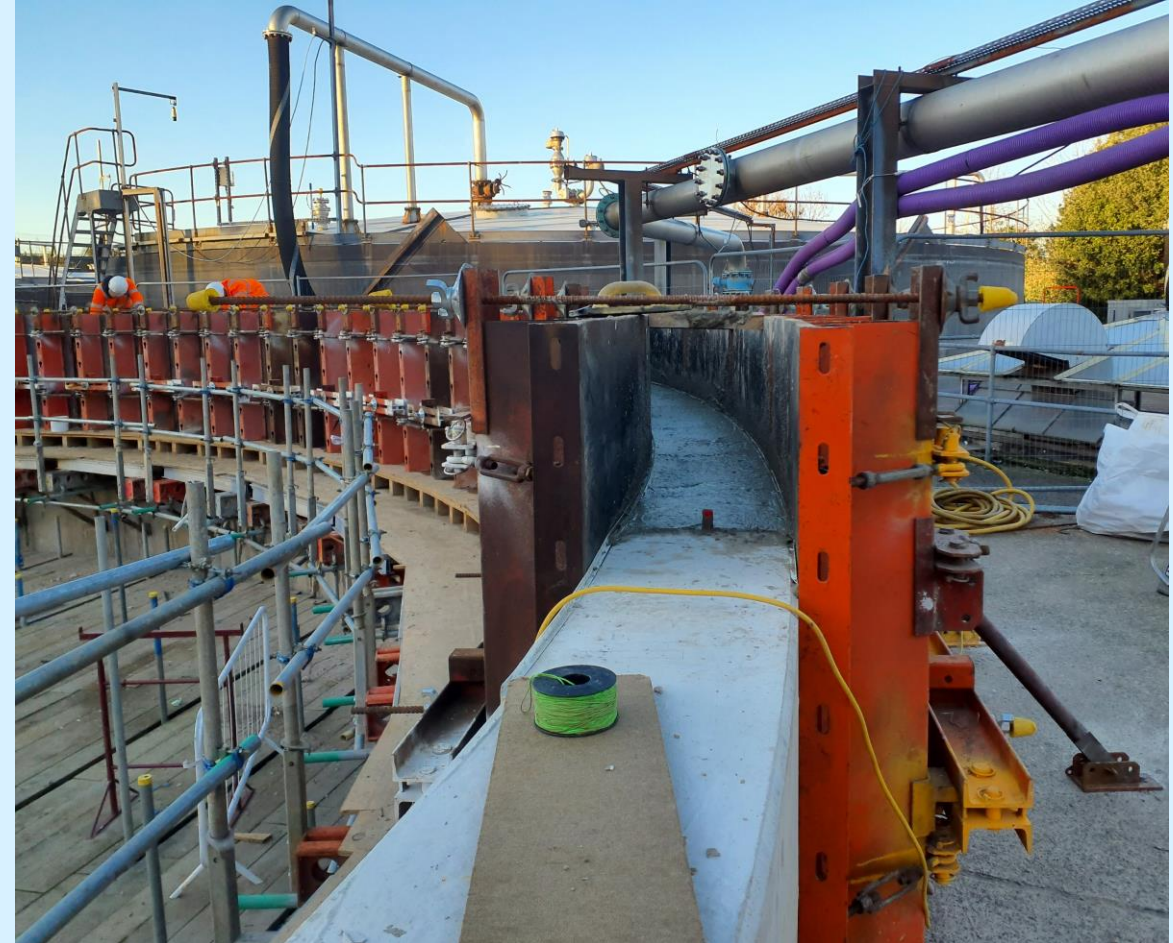
26 October 2023

AMP7 Resilience Works – Progress Update

- **Process Control Network (PCN)** – to be commissioned March 2024.
- **Site SCADA** – Servers built, will be installed on completion of the PCN work (April 2024).
- **Battery C & D** – new air supply infrastructure progressing, commissioning due in July 2024.
- **Digesters** – Wall extension on Dig. 16 completed, work started on Dig. 14 wall extension. Work to start on sludge pipes and pump stations.
- **Biogas upgrades** – T-piece installed for future biogas connection. Base slab cast for new gas boosters, new waste gas burner being manufactured.
- **Sludge area** – new Odour Control Unit (OCU) base slab complete, new OCU due on site from mid-Feb 2024, new Thickened Sludge Blending Tank being manufactured.
- **Power Management System** – equipment on site and being installed, commissioning due mid 2024.
- **BNG** – installing bird boxes made by Teddington based girl guide group with support from Kier



Project Photos – Digester 16 Wall Extension



Project Photos – Battery C



Top Left – Air main install

Bottom Left – new air main

Top Middle – ASP lane 13 baffle wall

Above – new MCC

Project Photos – Battery D

Blower building air header



New LV Blowers



New Transformers





It's everyone's water

Thank you

AOB / Close

Teddington DRA

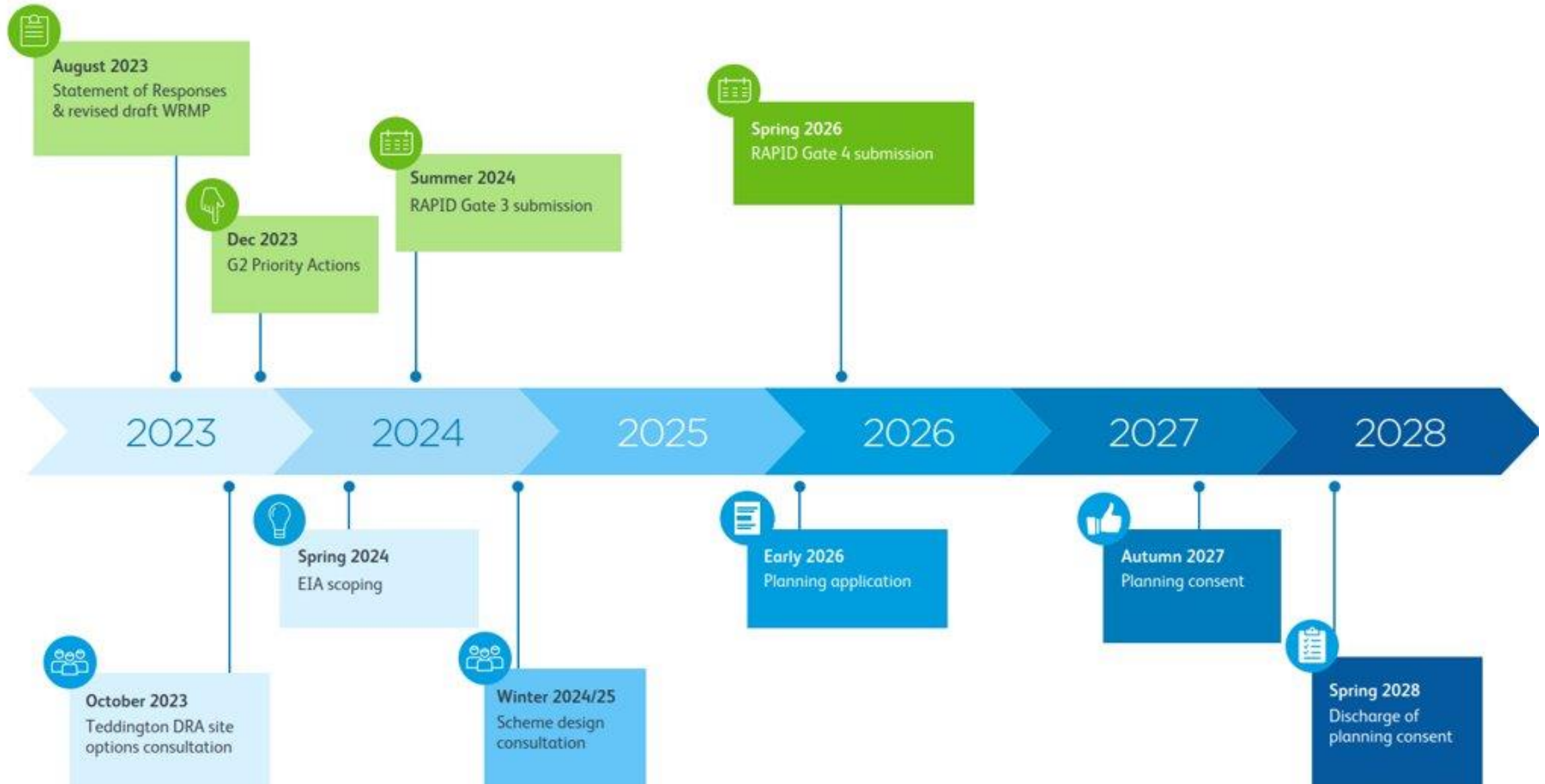
Teddington Direct River Abstraction
Mogden Residents Meeting
25th January 2024

Overview

- Project programme and timelines
- Its purpose and significance at this present time
- Share the most up-to-date information we have on the shaft locations within this area
- An overview of the engagement we've carried out to date
- A chance to answer questions

1. Project Programme

Main Project Planning Timelines



Project Purpose

- TDRA is a **water transfer project**:
 - Transferring raw water (up to 75ML/D) from the River Thames at Teddington to the Lee Valley Reservoirs in times of drought
 - Balancing the abstracted flow via the discharge of up to 75ML/D of recycled water sourced from Mogden STW through a new outfall close to the point of abstraction
- To help ensure that water supply in London is able to meet the **challenges of climate change** and the increasing occurrence of drier weather conditions;
- To ensure that a sufficiently drought-resilient water supply exists to **support London's population growth and to facilitate new development**, including housing growth;
- To enable London to adapt to the forthcoming changes to water supply associated with the **reduction in abstracted groundwater supply**;
- To help to **safeguard against economic loss and societal disruption** that would arise through the under-supply of water resources in London in drought conditions.

Project Significance

The Project is of national significance:

- as recognised by the WRSE Revised Draft Regional Plan and TW's revised draft WRMP24;
- by virtue of its scale of development and realised benefit;
- by virtue of its interface with its receiving environment and its contribution to the UK's environmental objectives, and
- by virtue of the social and economic consequences of not proceeding with the Project.

The Project:

- requires consenting by many organisations and across a number of different forms of consent that will best be secured through a single DCO, and
- requires temporary and permanent rights over and acquisition of land under the control of others that will best be secured through a single DCO

Planning and consenting process

Application via Section 35 of the Planning Act 2008 submitted to SoS (Defra) in November 2023

Project Directed by SoS (Defra) (December 2023) to be a Nationally Significant Project for which a Development Consent Order must be applied for.

All documentation relating to the process can be found here: <https://www.gov.uk/government/publications/thames-water-teddington-direct-river-abstraction-section-35-direction-planning-act-2008> .

Process is undertaken solely by the SoS as advised by their respective department i.e. Defra for water projects. No requirement for other departments of stakeholders to be engaged.

DCO will provide consent across all 3 London Borough administrative areas and, if progressed, will incorporate the Marine Management Licensing provisions associated with any potential water freight development (construction phase only) within the Tidal River Thames

DCO can wrap up wider consents, licenses and permits – type to be determined

DCO will also bring together into the same Order all land interests, from temporary acquisition of rights through to permanent acquisition of land and rights across potentially ~15 separate land interests identified during Gate 3.

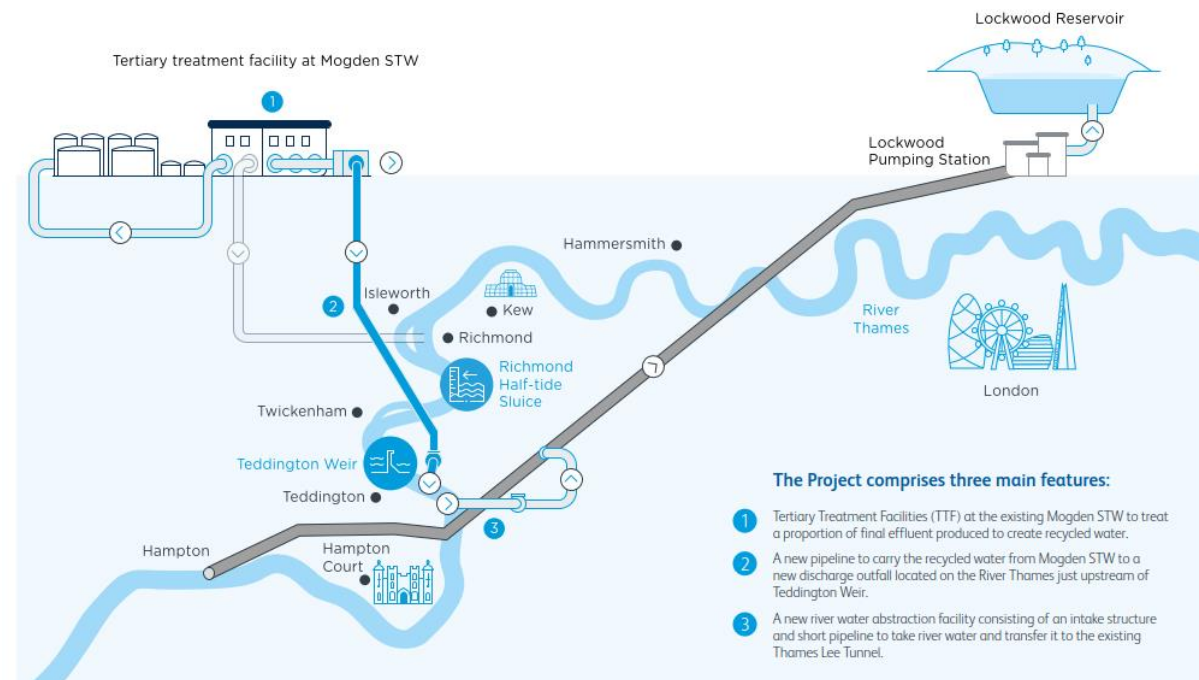
Scheme operation will be consented by the Environmental Agency via an abstraction and discharge permit which is currently expected to be sought either in parallel to or as part of the Development Consent Order.

Teddington DRA – Scheme Overview

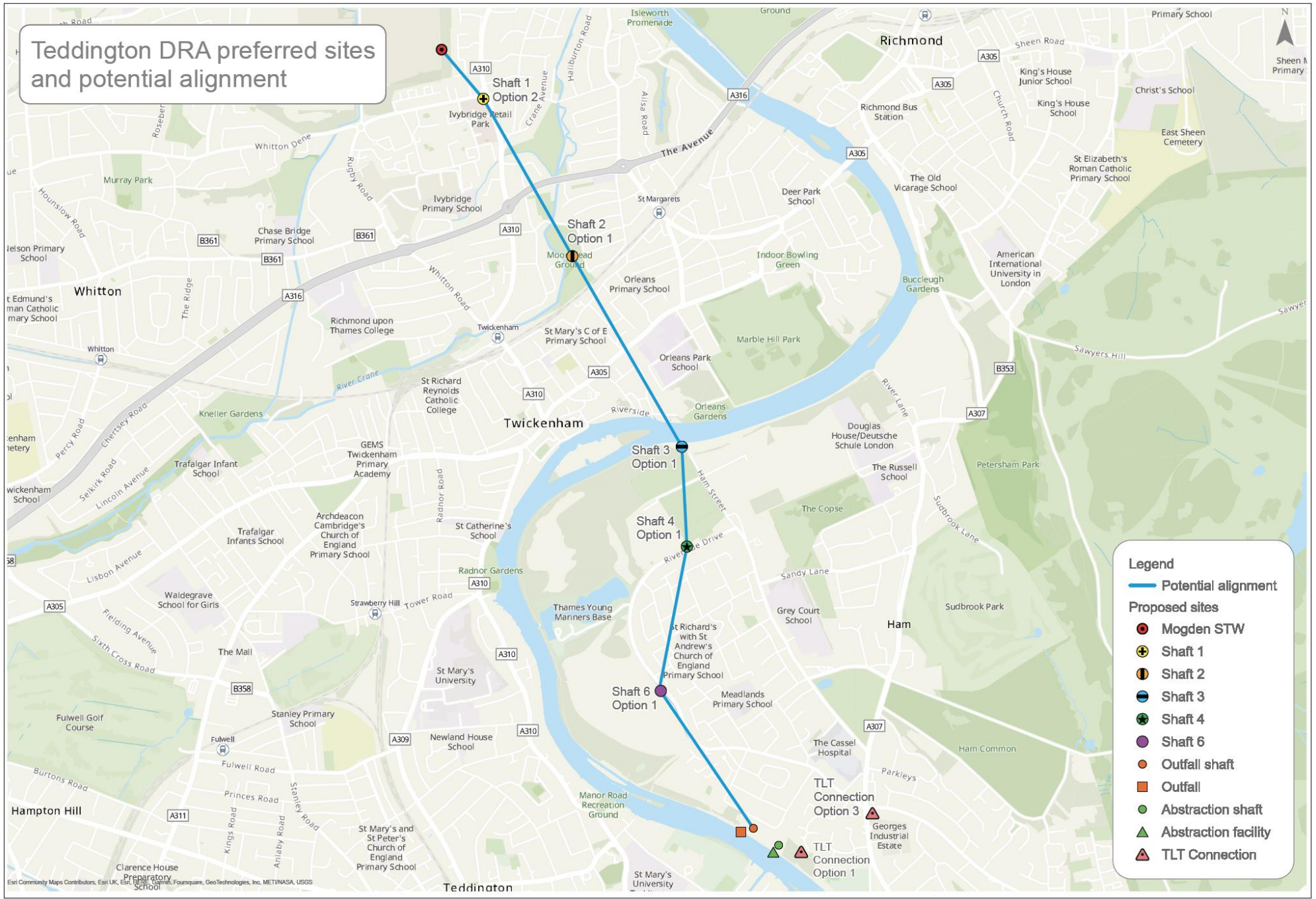
- Drought resilience scheme, that could provide up to 75MI/d
- Intermittent operation, typically every other year - August to October
- Scheme triggers will be based on flows in the River Thames and storage levels in the Lee Valley reservoirs.
- The scheme will be licenced by the EA and operate in accordance with the Lower Thames Operating Agreement under the Water Resource Act
- The scheme will abstract raw river water and replace with recycled water from Mogden STW, ensuring there is no change in river levels and flows over Teddington weir
- During operation, less final effluent will be released into the Tideway and a higher degree of treatment will be introduced over Teddington Weir resulting in water quality improvements in general
- A continuous maintenance flow will be required and this will also provide an overall improvement to the status of the water quality leaving Mogden.

Our vision

- Protect the environment
- Minimise disruption and impacts on local communities
- Protect water users
- Provide enhancement to the local area



Teddington DRA preferred sites and potential alignment

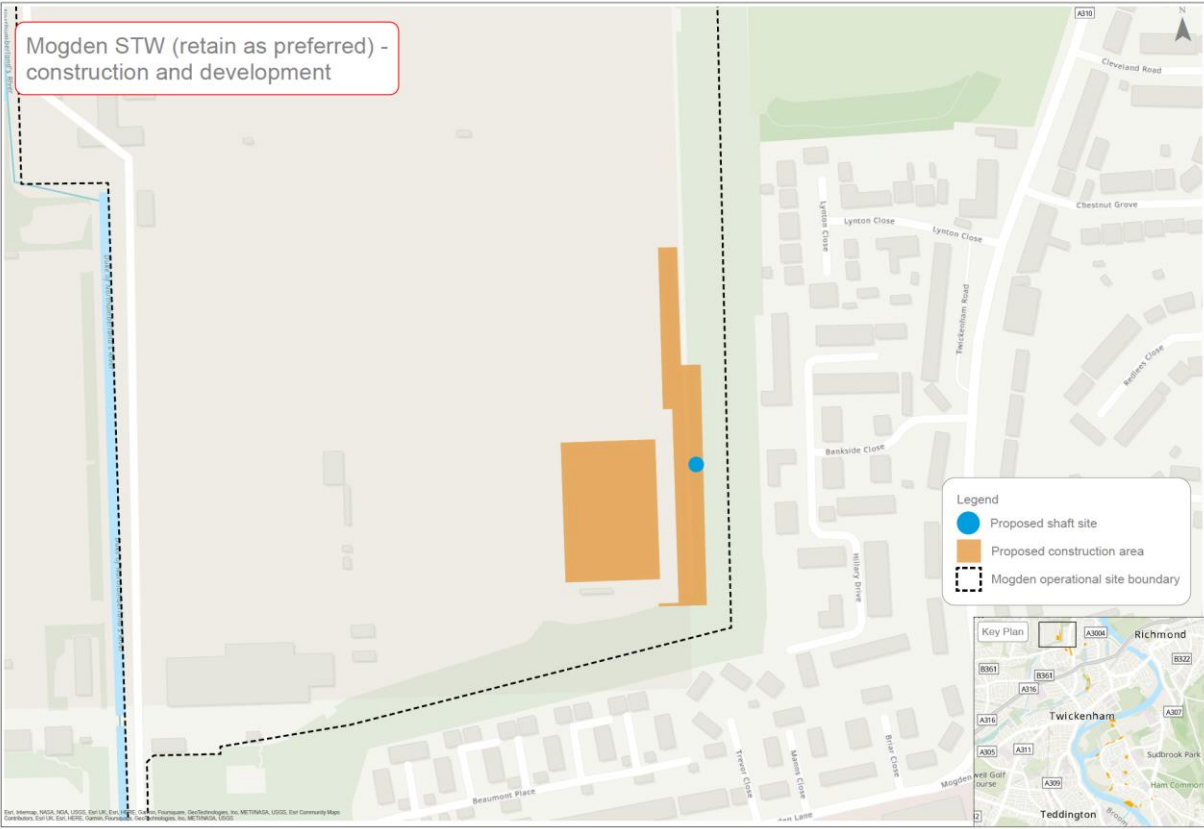


Proposed TDRA Development (January 2024) – Preferred Sites & Potential Alignment

Proposed TDRA Development (January 2024)– Key Components

- New tertiary treatment facility (TTF) at Mogden Sewage Treatment Works (LBH) applying tertiary treatment to up to 75MI/d of final effluent diverted from the Mogden STW final effluent channel [produces recycled water]
- 4.5 km pipeline from the Mogden STW TTF (LBH) to a new submerged discharge point upstream of Teddington Weir (LBR)
- New discharge outfall upstream of Teddington Weir within open space south of Burnell Avenue and submerged below river level and installed below ground, with surface level deck flush to ground (LBR)
- New raw water abstraction intake structure and fish screens set into river bank and channel, supporting mechanical and electrical infrastructure (e.g. kiosks), and connection shaft for pipeline to Thames Lee Tunnel within open space south of Burnell Avenue (RBK)
- Connection pipeline (depth circa 20 – 30m but TBD) between Intake and Thames Lee Tunnel connection shaft either at land south of Northweald Lane or land at Tudor Drive (TBD) (RBK)
- Intermediate Shaft sites to support pipeline construction, currently 5 assumed:
 - Ivybridge Retail Park Car Park north, LBH
 - Moormead & Bandy Recreation Ground central, LBR
 - Ham Street Car Park, LBR
 - Land to the west of Riverside Drive Playground, LBR
 - Ham Lands, west of Riverside Drive, LBR

Proposed TDRA Development (January 2024) – Mogden STW TTF



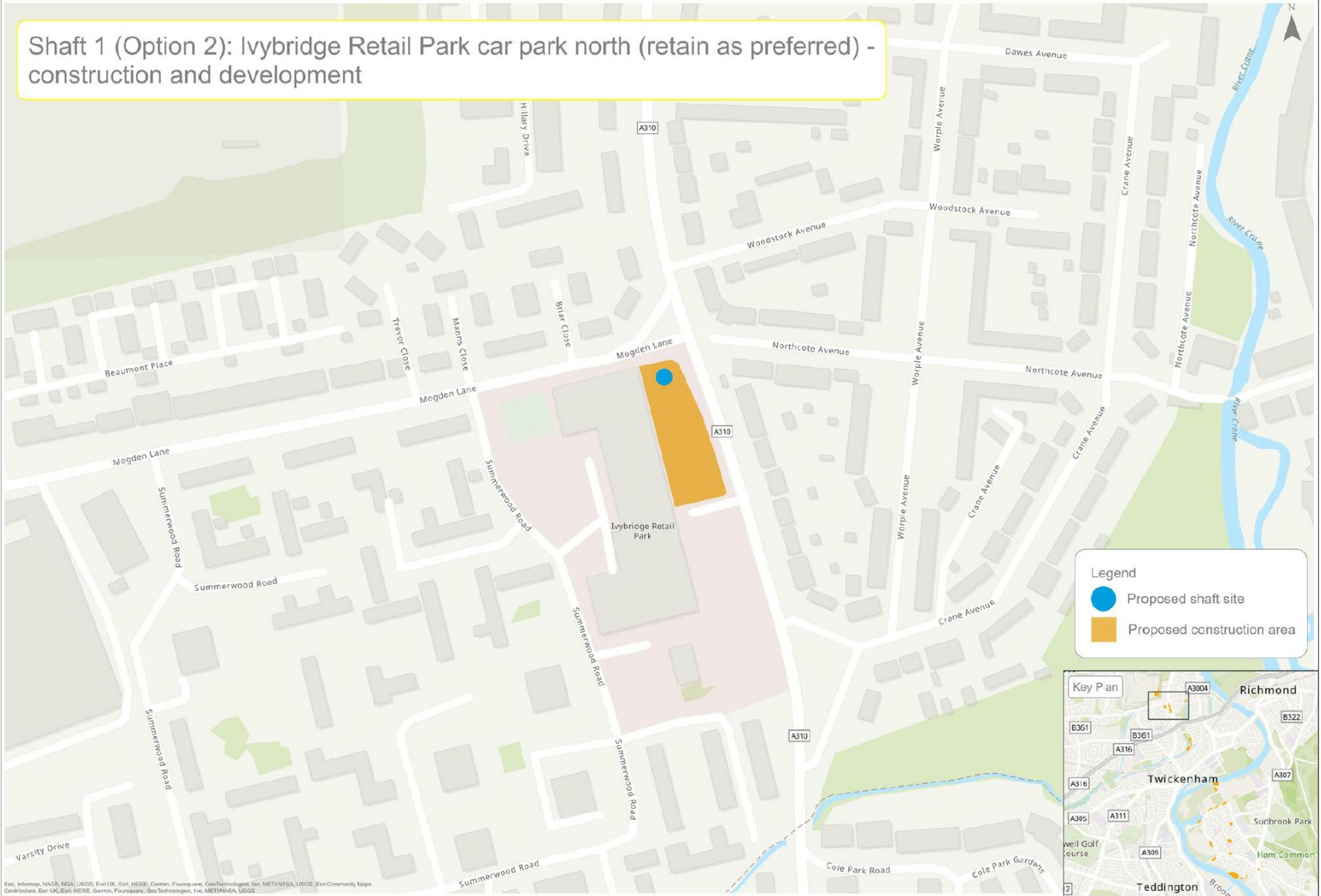
Proposed TDRA Development (January 2024)– What will you see during operation?

- TTF plant height below tree line and embankments at Mogden
- Construction compounds removed and land reinstated.
- Access shafts marked by large man-hole covers $\sim 4\text{m}^2$
- Intake and outfall infrastructure largest at ground level or above ground assets; opportunities to design structures, screening and landscaping with LPA and local community input



Proposed TDRA Development (January 2024) – Preferred Intermediate Shaft 1

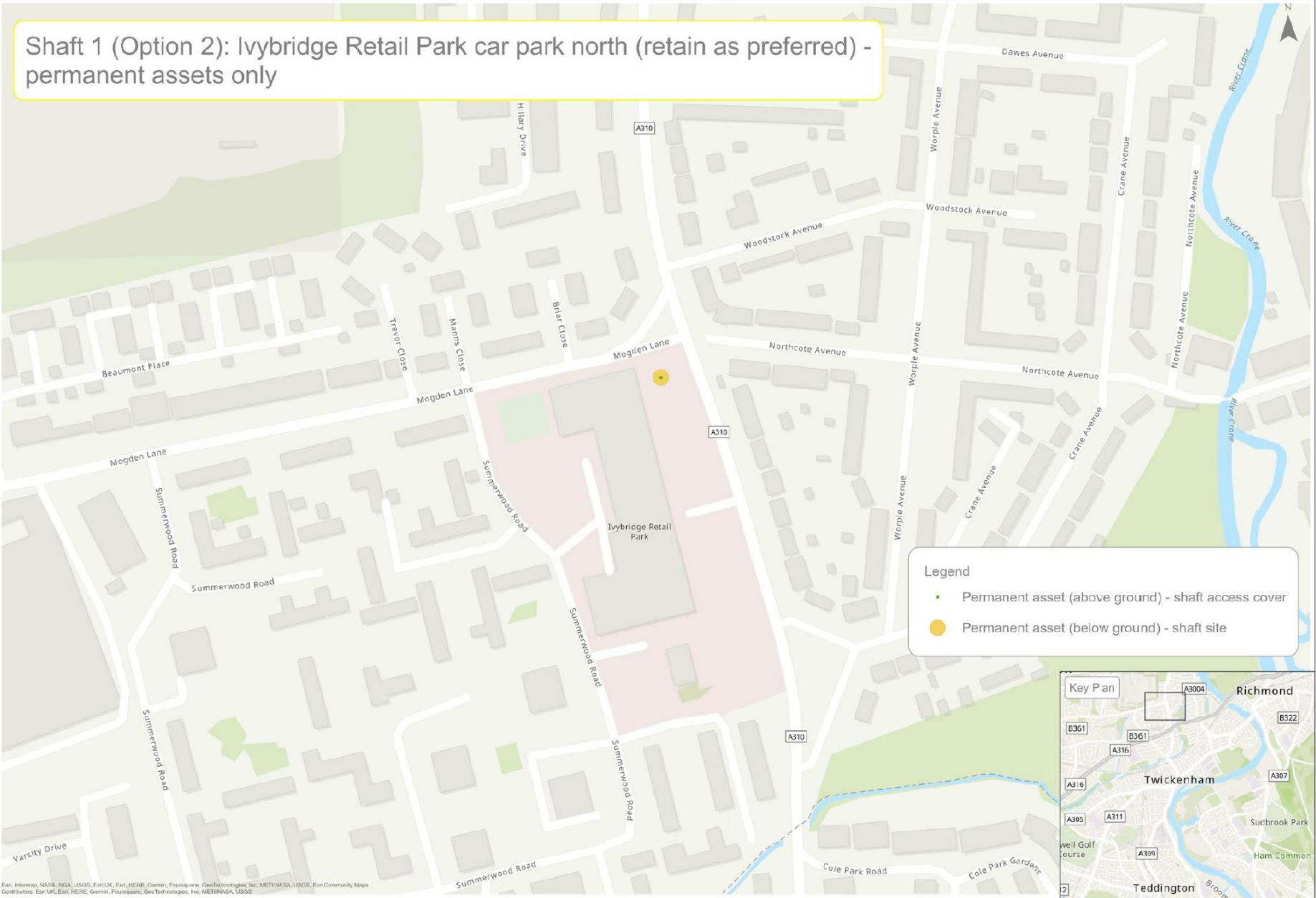
Shaft 1 (Option 2): Ivybridge Retail Park car park north (retain as preferred) - construction and development



Esri, Intermap, NASA, NOAA, USGS, Esri UK, Esri, HERE, Garmin, FourSquare, GeoTechnologies, Inc, MET/NASA, USGS, Esri Community Maps
Contributors: Esri UK, Esri, HERE, Garmin, FourSquare, GeoTechnologies, Inc, MET/NASA, USGS

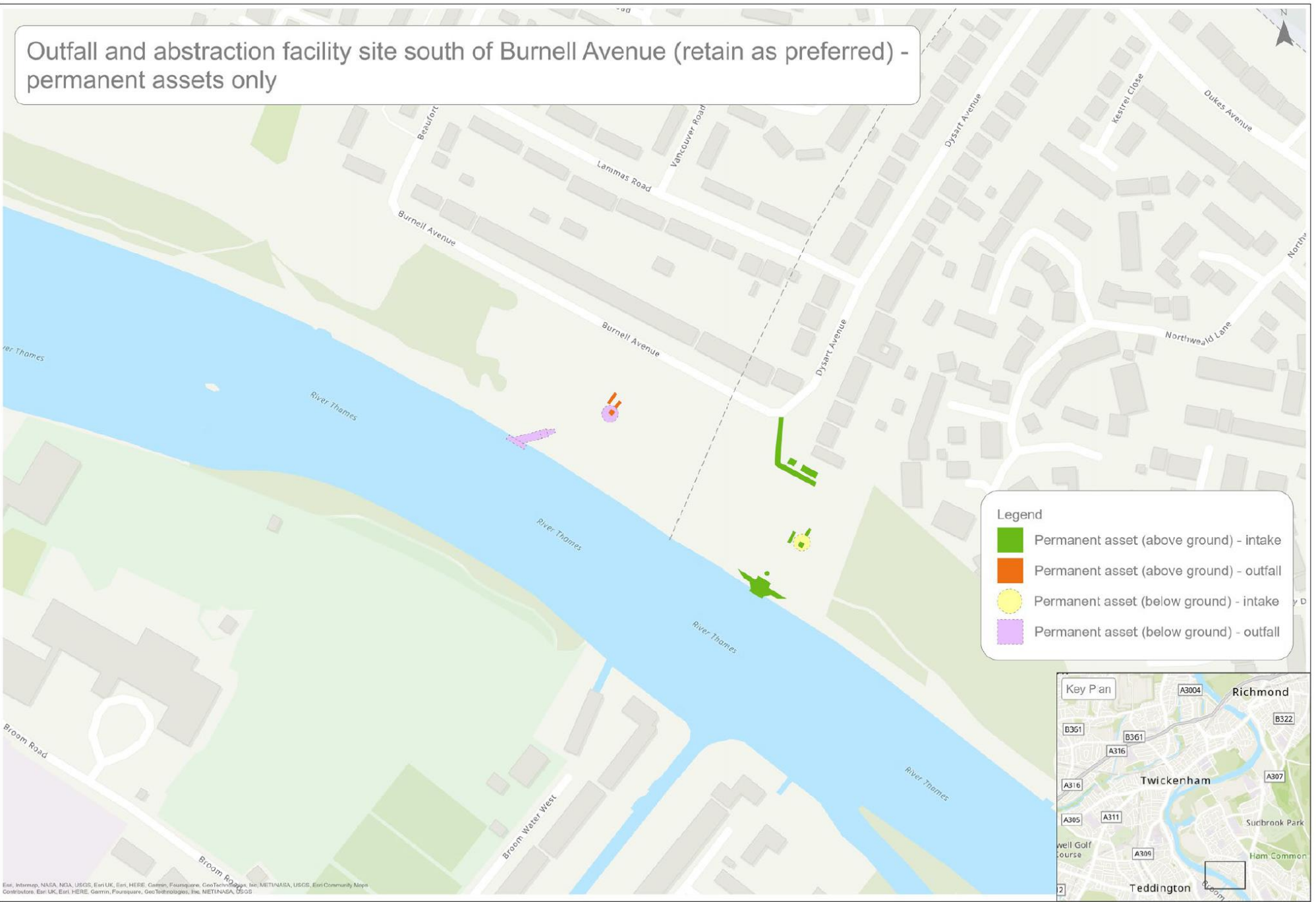
Proposed TDRA Development (January 2024) – Preferred Intermediate Shaft 1

Shaft 1 (Option 2): Ivybridge Retail Park car park north (retain as preferred) - permanent assets only



Esri, Microsoft, NASA, NOAA, USGS, Esri UK, Esri, HERE, Garmin, DeLorme, GeoEye, GeoTechnology, Inc., METI/NASA, USGS, Esri Community Maps Contributors, Esri, UK, Esri, HERE, Garmin, Flygstone, GeoTechnology, Inc., METI/NASA, USGS

Outfall and abstraction facility site south of Burnell Avenue (retain as preferred) - permanent assets only

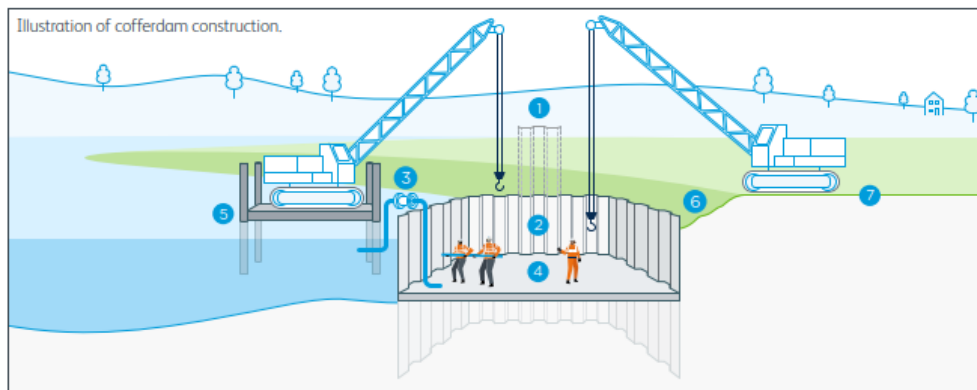
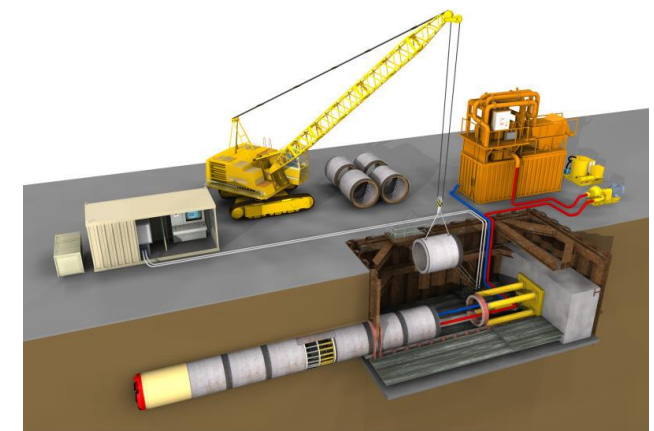


Proposed TDRA Development (January 2024) – Outfall and Intake – Operational State

Esri, IntelMap, NASA, NOAA, USGS, Esri UK, Esri HERE, Garmin, Foursquare, GeoTactics, Bing, Jet, MET/NASA, USGS, Esri Community Maps Contributors, Esri UK, Esri HERE, Garmin, Foursquare, GeoTactics, Bing, Jet, MET/NASA, Esri

Proposed TDRA Development (January 2024)– What will you see during construction?

- Pipeline infrastructure is below ground
- Shafts (intermediate/ pipeline drive/ pipeline reception) and discharge infrastructure will be at surface or below ground
- TTF, intake and intake power supply will be combination of above ground and below ground
- Temporary construction compounds at all surface sites
- Total construction phased over 3 years.
- Mogden construction works = ~ 3years
- Outfall and intake construction works and will include the need to coffer dam = ~ 2 years
- Intermediate shaft site: construction of each shaft and pipe jacking section ~ 7 months
- Pipe jacking at 20-30m depth through clay. No predicted settlement issues.
- Pipeline excavation spoil will only be extracted from selected shaft sites. Material to be removed via HGV and possibly water freight.



- | | | |
|---|---|------------------------------|
| 1 Sheet piles pushed into the ground (river bed and river bank) to create the construction space needed | 3 Pump to dewater construction space behind sheet piles | 6 Edge of River / River Bank |
| 2 Excavated dry space behind sheet piles | 4 Build Structure in dry space | 7 Existing ground level |
| | 5 Barge | |



Teddington DRA Infrastructure



Photomontage of the what the intake might look like from SE corner of Burnell Avenue, Kingston-upon-Thames



3D illustration of the intake



Photomontage of the discharge infrastructure, Richmond Upon Thames



3D illustration of what the intake might look like on the River Thames from opposite bank

2. Environmental assessments

Environmental Assessment – Further discussions

Work to date has primarily been focussed on water quality and aquatic and terrestrial ecological surveys, and discussions with the Environment Agency and Natural England

Wider environmental surveys to be undertaken to support the environmental assessment to understand the amenity and social value of the area and potential environmental effects – welcome further technical discussions including:

- Traffic and transport
- Noise
- Community and Recreation
- Biodiversity
- Townscape
- Historic environment
- Cumulative projects

3. Ground Investigations to support TDRA design

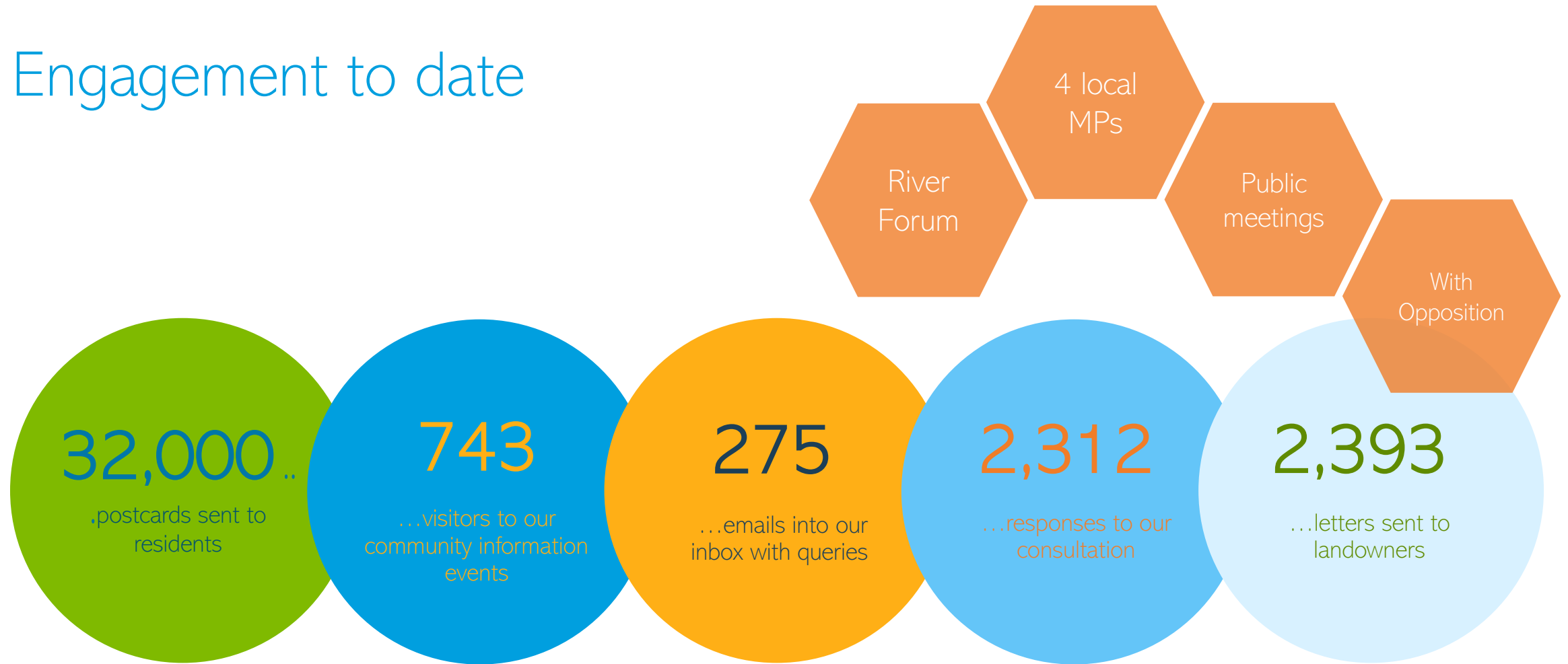
Ground Investigation boreholes

- 18no. Boreholes planned:
 - 5 at Mogden STW (LBH)
 - 1 further in LBH at Ivybridge Retail Park Car Park
 - 10 within LBR all close to potential construction sites
 - 2 in RBK also both close to potential construction sites
- All circa 200mm diameter, bored to depth of ~44m below ground
- All finished flush to ground level inclusive of protective locking cap
- Total duration including installation and survey and removal is to be concluded but potentially 6 months per borehole
- Not anticipated, individually or cumulatively, to give rise to any interface with the provisions of the TCPA EIA Regulations
- Works intended to be progressed under Thames Water's Permitted Development Rights as prescribed at Part 13 of the GPDO



4. Engagement Overview

Engagement to date



Engagement to date: Overview of main points of discussion - TDRA

[These points are summarised from the engagement to date, not an analysis of responses to the October – December 2023 consultation process]

- Lack of trust in Thames Water, historic issues / company performance, fixing leaks, dividends paid to shareholders
- Impacts of tunnelling on homes
- Impact of construction on local communities, particularly in relation to being able to use open spaces for recreation, and dust / noise / number of vehicles
- Why the tertiary treated water can't be piped straight to the reservoirs
- What will the impact be on the river (forever chemicals, temperature)
- What will the impact be on the wildlife
- Why specific shaft sites have been selected
- What are the alternatives to the project and have they been adequately considered
- Concern about there being treated effluent in the river

Future engagement (non-planning)

- Ongoing open dialogue with stakeholders
- Support understanding of Nationally Significant Project / DCO
- Support MP and Local Authority officers with general public enquiries
- Engage with local community around ongoing assessment works, namely Ground Investigation works
- Information events and newsletters
- Statutory Consultation Winter 2024/25
- Legacy engagement
- Updates to website
- Community Assessment as part of our EIA





It's everyone's water

Thank you