


THE THAMES TIDEWAY TUNNEL

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6th March 2023



Tideway



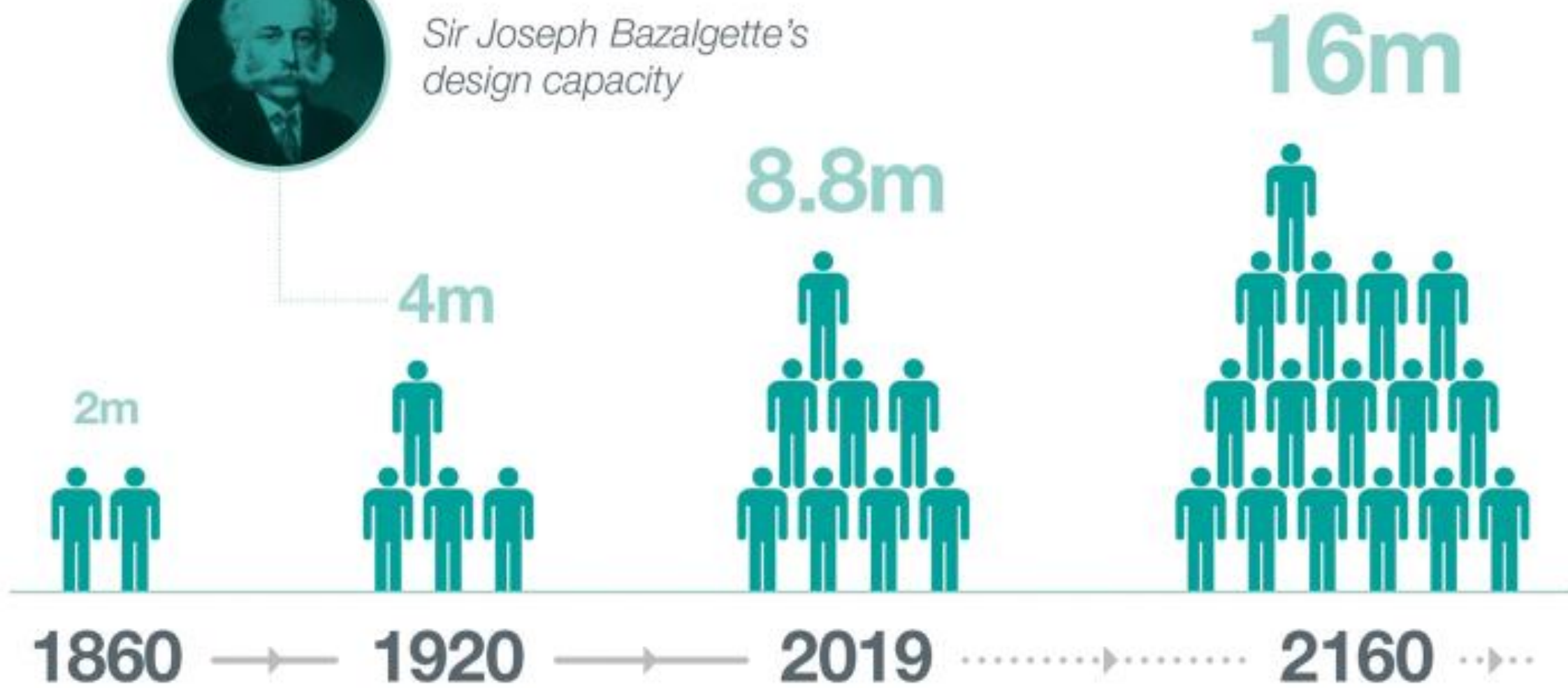
An aerial photograph of London, England, taken at sunset. The River Thames flows through the center of the city, with the Tower Bridge spanning across it. The city skyline is visible in the background, with several skyscrapers. The sky is a mix of orange, yellow, and blue. The water of the river is a golden-brown color. The overall scene is a panoramic view of the city from a high angle.

Our challenge is to build a new sewer for London to prevent the frequent pollution of the river Thames

Our vision is to not just clean up the Thames but to promote a change in the relationship between London and Londoners and their river

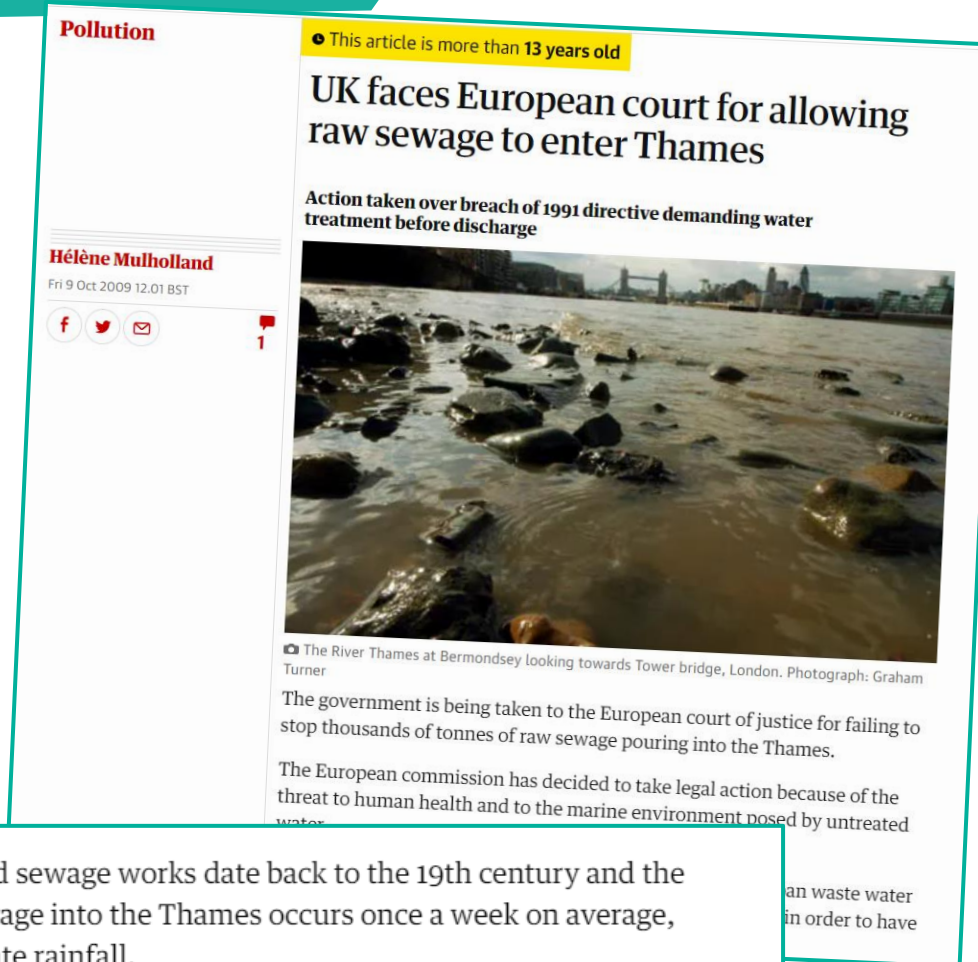


*Sir Joseph Bazalgette's
design capacity*



The history and evolution of the Thames Tideway Tunnel

- **1991 Urban Waste Water Treatment Directive (UWWTD)** initial driver for the Thames Tideway Tunnel. However, full implementation of this Directive is a basic (obligatory) measure in the **Water Framework Directive**.
- In 2009 the European Commission had referred the UK to the Court of Justice asserting breaches of the Directive in London (and Whitburn in North East England).
- Level of overflows considered excessive and that an adequate sewerage and collection system was needed.



London's antiquated sewage works date back to the 19th century and the overflow of raw sewage into the Thames occurs once a week on average, even during moderate rainfall.

Thames **Water** is planning to build the Thames Tideway "super sewer" to collect sewage before it overflows and channel it to a treatment plant, but the 20-mile tunnel along the north side of the river is not expected to be operational until 2020, almost three decades after the European law will have come into force.

1. Sustainable Drainage Systems

- SUDS solution would have required simultaneous retrofit of all London's properties and the sewerage systems to the required level which would have been disproportionately expensive compared with a traditional drainage solution
- Retrofitting would not provide sufficient reductions in CSO spill frequency to comply with the UWWTD.

2. Providing extra capacity within the sewerage system

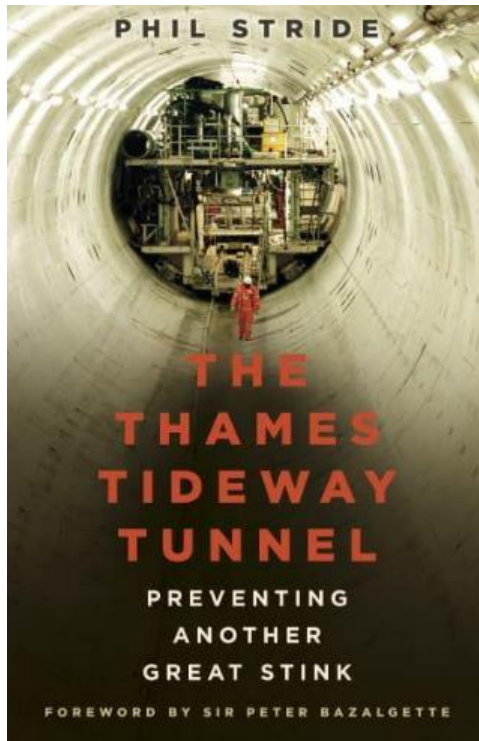
- Enlarging or duplicating existing sewers not feasible as the sewerage system is large and complex with many cross connections

3. Converting the combined drainage to a separate drainage system

- This would involve the provision of a completely new network of sewers approximately 12,000 km in length and every existing property would have required connecting to the new system.
- Cost and disruption would be very high

Our Solution – Thames Tideway Tunnel

- Inappropriate to “do nothing”
- In 2007 the Government concluded that the case for a Thames Tideway Tunnel was the preferred solution



TIMELINE

- **1991 – UWWTD**
- **2000 – Thames Tideway Strategic Study**
- **2007 - Government initiated the project**
- **2014 – Planning permission obtained**
- **2015 – Construction contracts awarded**
- **2016 – Enabling works began**
- **2018 – Tunnelling commenced**
- **2022 - Primary Tunnelling ends**
- **2024 – System commissioning commences**
- **2025 – Handover**

Project of national significance

- The Thames Tunnel is considered to be an infrastructure scheme of national significance for a number of reasons:
 - It is essential to meet statutory requirements;
 - It is essential to meet the ecological water quality objectives of a major river of national importance;
 - It is essential to reduce the risk of human health impacts;
 - It is essential to reduce aesthetic impacts.



Arguably even more important today

ENVIRONMENT

All water firms fail pollution and sewage tests

Liz Truss 'has sewage on her hands' over Environment Agency cuts

Exclusive: Truss oversaw cut in funds to tackle water pollution, since when raw sewage discharge has risen



THE STENCH OF THE SEWAGE SCANDAL
GROWS STRONGER

CLEAN IT UP

Water companies must show plan to cut sewage spills into rivers and sea

Sewage regularly dumped illegally in England and Wales rivers

English water company bosses threatened with jail for sewage pollution

Environment Agency says fines should be increased and company directors of guilty utilities should be struck off

Environment Agency knew sewage was being dumped into rivers years ago, leak reveals

Exclusive: Revelation comes after agency's chair told MPs in May the practice had only recently come to light

Water chiefs blame UK government for failure to stop sewage pollution

Under-fire water firms, criticised for their part in the scandal, have pointed the finger at the authorities in newly revealed letters

Our solution - Thames Tideway Tunnel

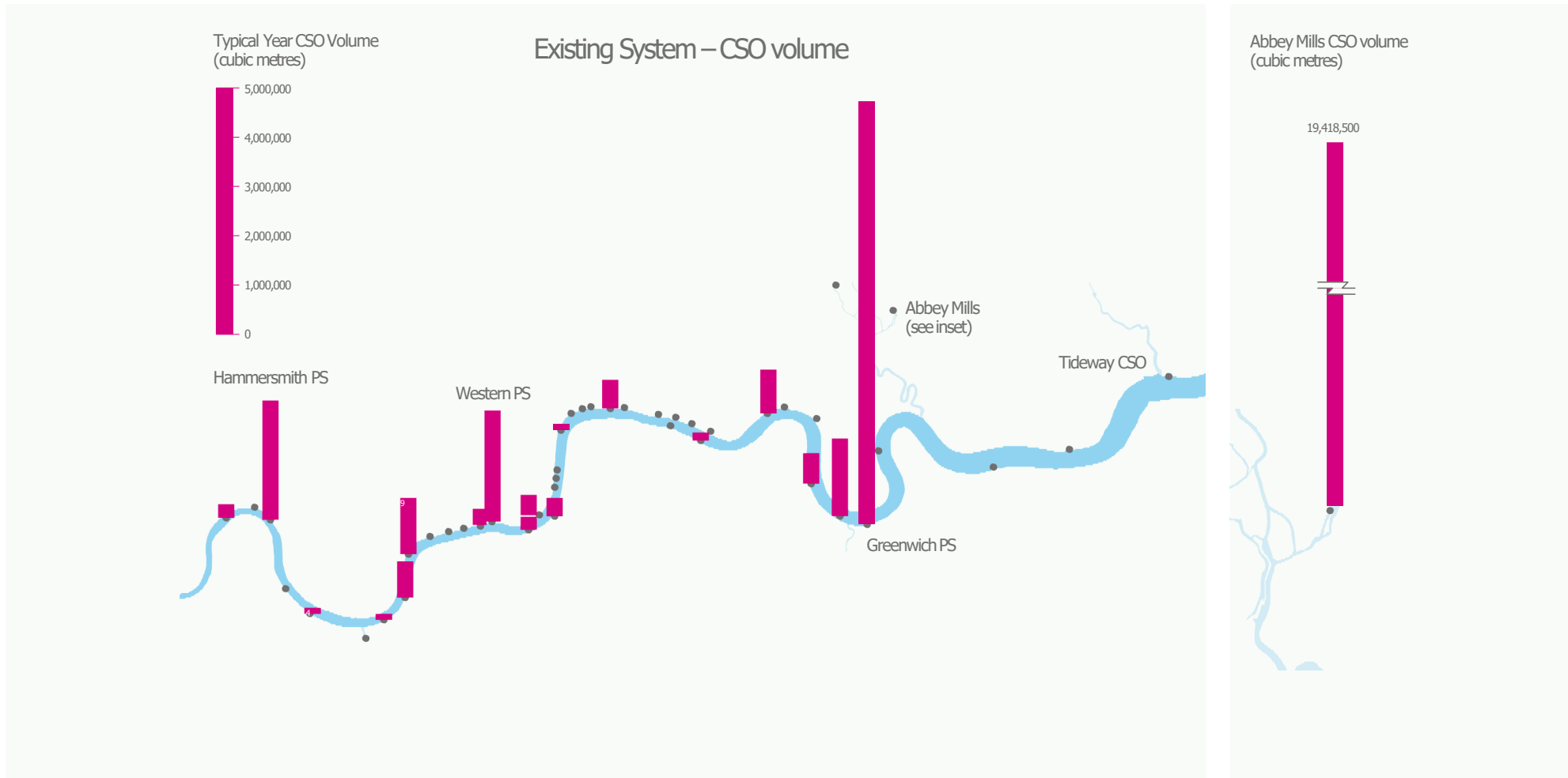
- London's combined sewerage system operates at capacity
- In a typical year there are 50-60 combined sewage overflows (CSO) discharges of storm water and sewage – this is equivalent to 110 million m³ (39 million tonnes) of sewage discharged to tidal River Thames
- London Tideway Improvements incorporates integrated Sewage Works Upgrades, the Lee Tunnel and Thames Tideway Tunnel
- Thames Tideway Tunnel follows the river intercepting CSOs
- The TTT will reduce spills to 5 or less in typical year and 95 per cent by volume

London Tideway Improvements

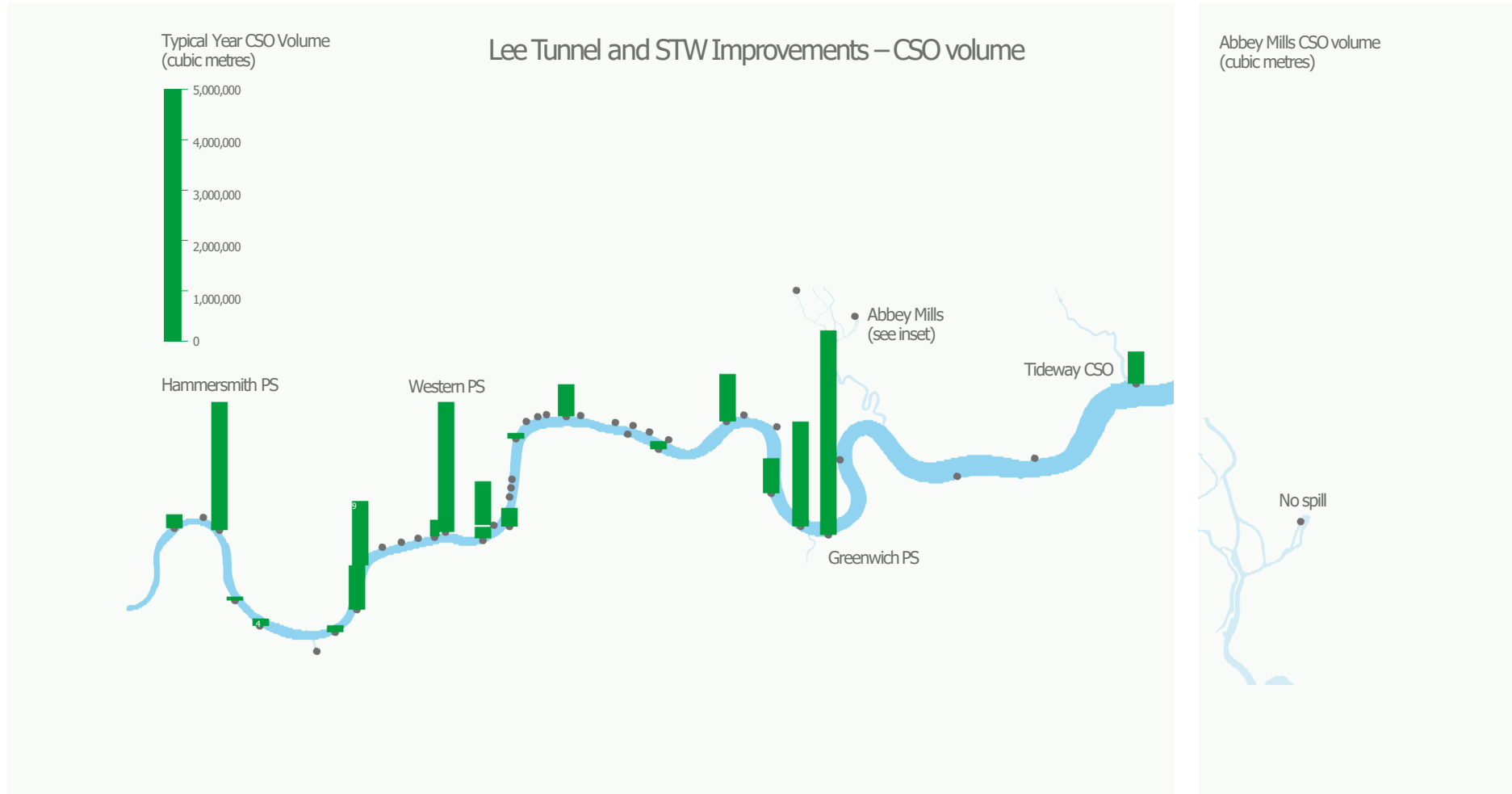


Critical UK infrastructure

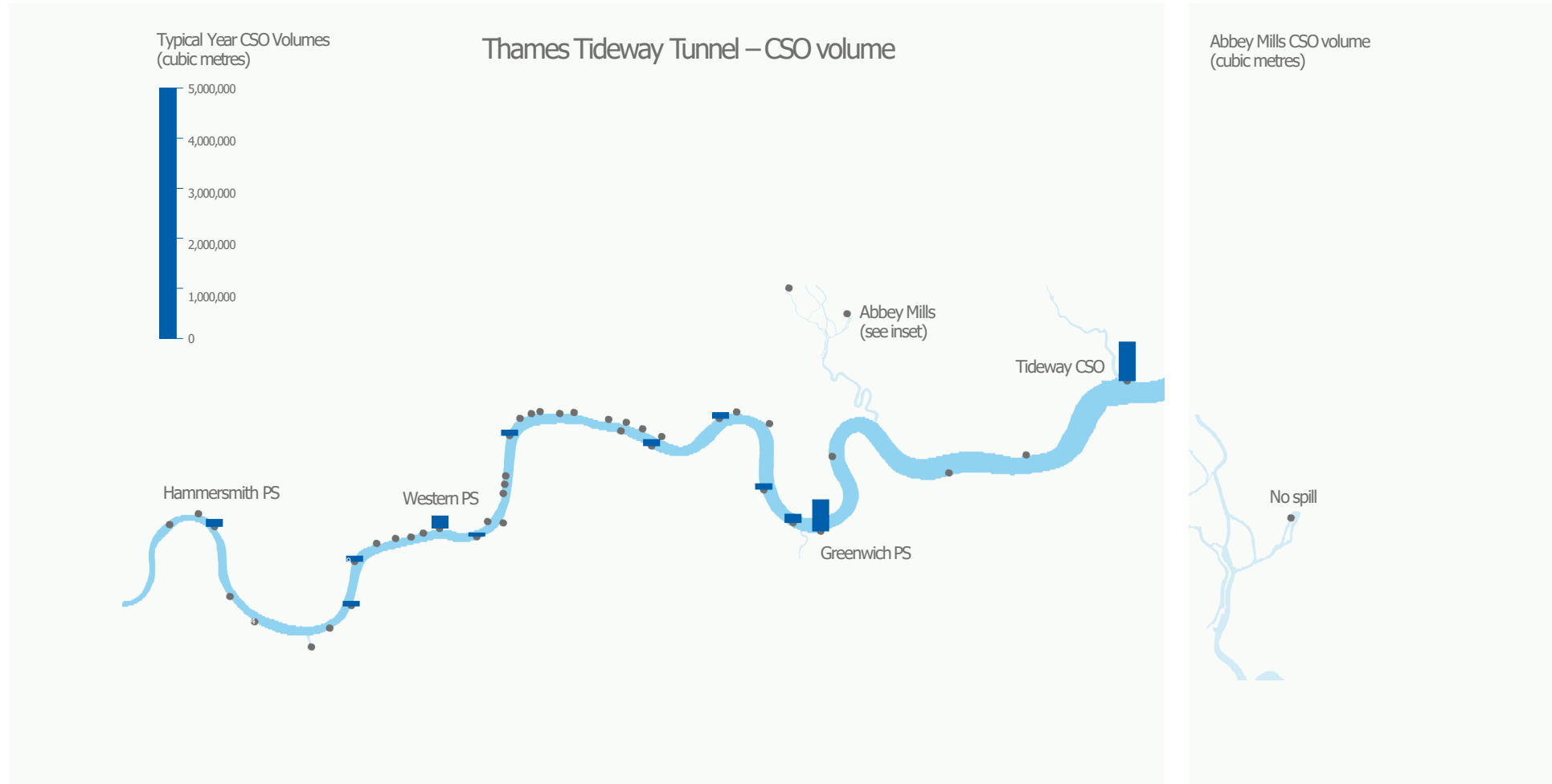
Impact of improvements



Impact of improvements



Impact of improvements



Climate modelling

- At the time of the original route selection and design decisions, **UK Climate Projects 2009** from UK Met Office offered the best climate projections
- Climate change and population growth means that discharges could increase up to **eight times/yr** by the 2080s.
- The tunnel will continue to provide a good level of service in a range of future conditions.
- There are feasible adaptations to the London Tideway Improvements that could be implemented

III - TIDEWAY CLIMATE RELATED FINANCIAL DISCLOSURE



Route and Sites

25

kilometres long

Travelling from west to east London, the main tunnel will be 25km long. Two connection tunnels will be 4.6km and 1.1km long.

7.2

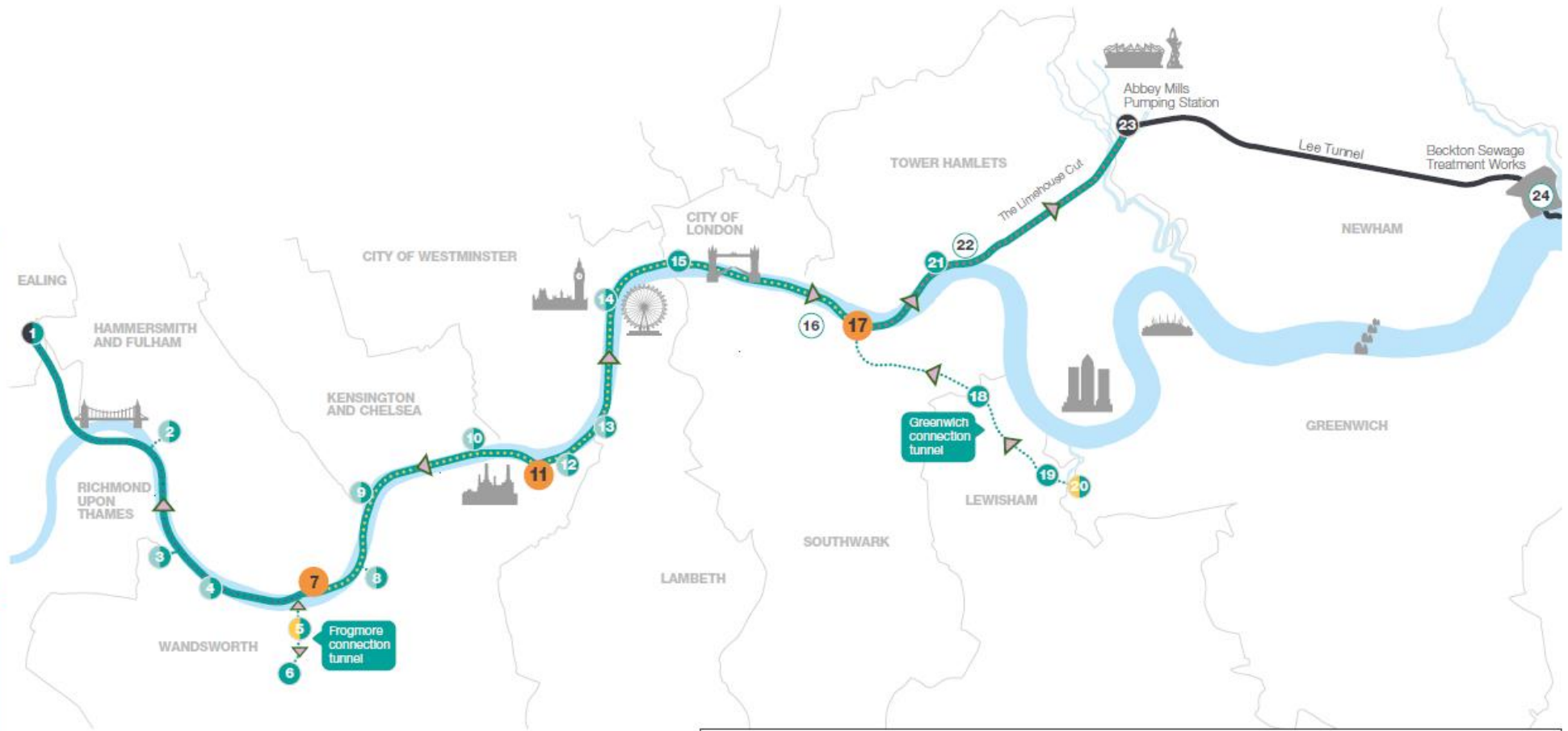
metres wide

The main tunnel will have an internal diameter of 6.5 metres between Acton Storm Tanks and Camrath Road Riverside. It will have a 7.2 metre internal diameter at Abbey Mills Pumping Station. The Greenwich connection tunnel will have a 5 metre internal diameter and Frogmore connection tunnel will be 2.6 metres.

66

metres deep

The tunnel needs to fall one metre every 790 metres so it can be self-cleaning. Starting from 30 metres deep at Acton Storm Tanks, it will finish 66 metres deep at Abbey Mills Pumping Station.



Map key		
● Main tunnel drive site	— Main tunnel	1 Acton Storm Tanks
● Main tunnel reception site	--- Connection tunnels	2 Hammersmith Pumping Station
● CSO site	— Leo Tunnel	3 Bam Elms
● Short connection tunnel drive site	◀ Drive direction	4 Putney Embankment Foreshore
● Long connection tunnel drive site	--- West works site	5 Dormay Street
○ System modifications	--- Central works sites	6 King George's Park
	--- East works site	7 Camrath Road Riverside
		8 Falconbrook Pumping Station
		9 Cromorne Wharf Depot
		10 Chelsea Embankment Foreshore
		11 Kirtling Street
		12 Heathwall Pumping Station
		13 Albert Embankment Foreshore
		14 Victoria Embankment Foreshore
		15 Blackfriars Bridge Foreshore
		16 Stad Thames Pumping Station
		17 Chambers Wharf
		18 Earl Pumping Station
		19 Deptford Church Street
		20 Greenwich Pumping Station
		21 King Edward Memorial Park Foreshore
		22 Boksbourne Street
		23 Abbey Mills Pumping Station
		24 Beckton Sewage Treatment Works

How the system works

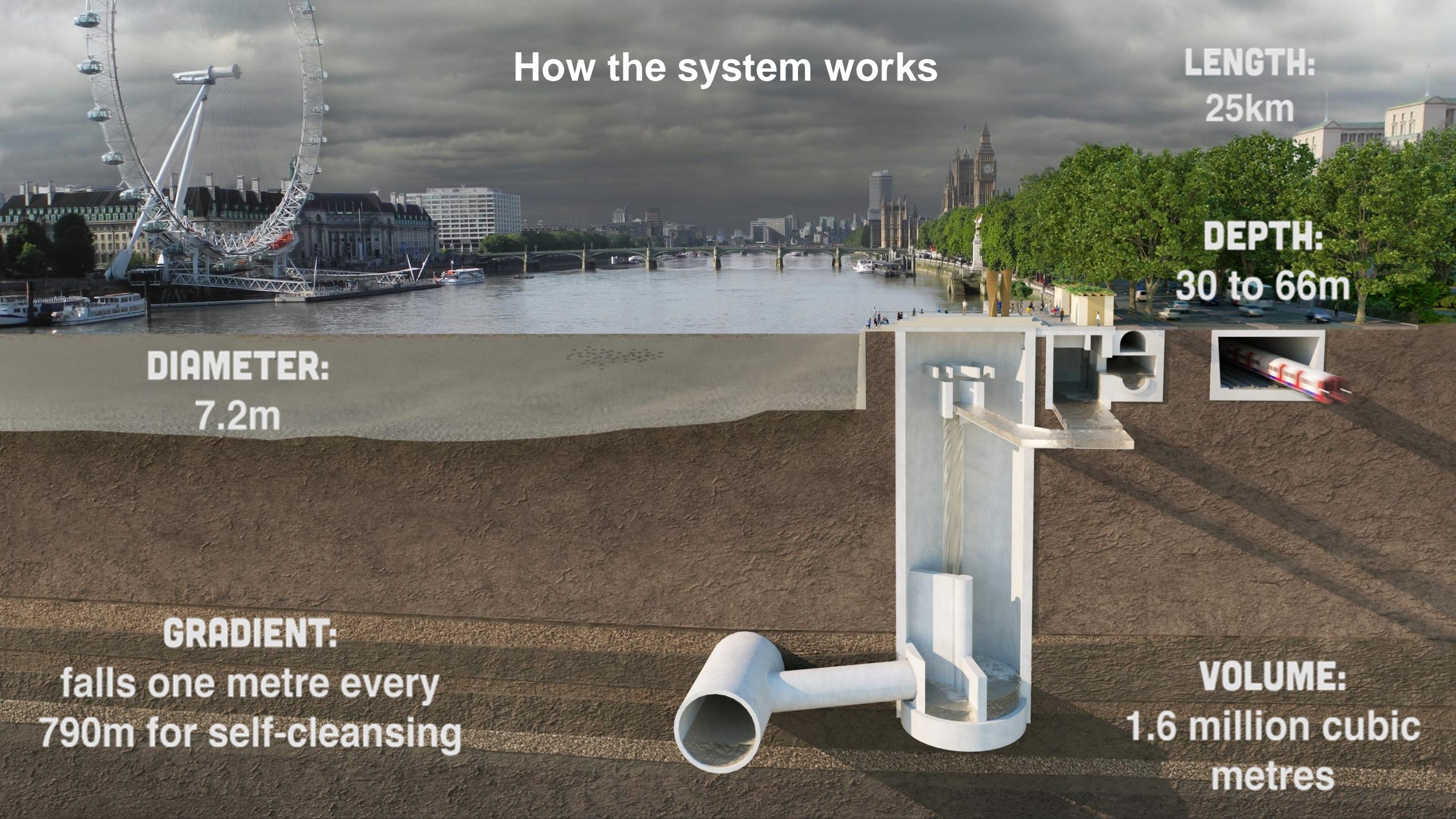
LENGTH:
25km

DEPTH:
30 to 66m

DIAMETER:
7.2m

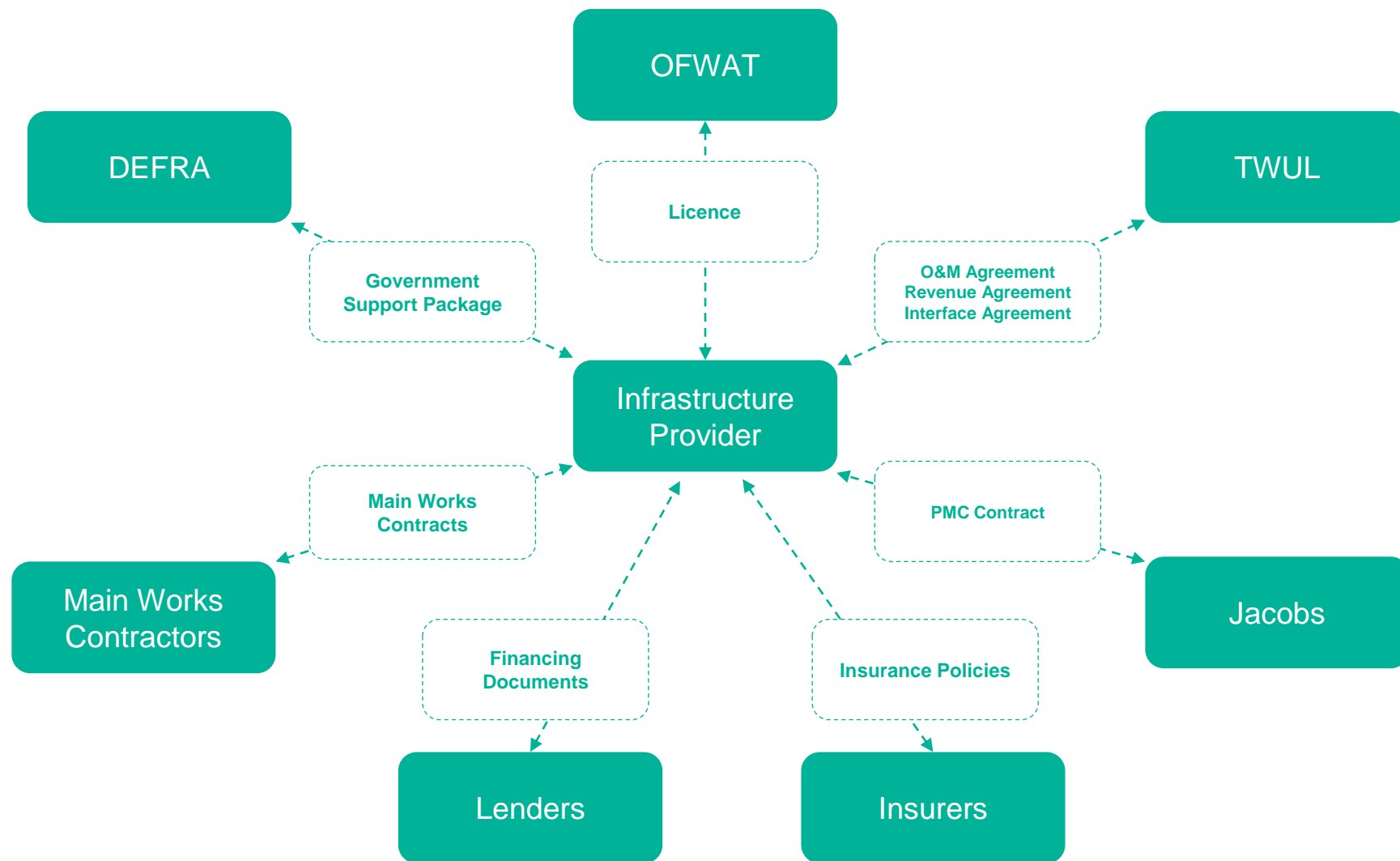
GRADIENT:
falls one metre every
790m for self-cleansing

VOLUME:
1.6 million cubic
metres



DELIVERY MODEL

The Tideway model



Tideway Delivery Model

- New licensed company - independent from local monopoly Thames Water
 - Required new legislation (Specified Infrastructure Projects Regulations 2013)
- Tideway's business as a regulated utility company is to design, build, commission and maintain the Thames Tideway Tunnel, a simple asset with 120-year design life
- Thames Water will operate the tunnel after System Acceptance
- Being delivered through "design and build" contracts by major contracting joint ventures
- RPI-linked revenue collected from Thames Water's wastewater customers
- Owned by Allianz, Amber Infrastructure and Dalmore Capital
- Benefits from a support package provided by the UK Government

New independent utility with regulatory framework set until 2030



FINANCING

Financing Thames Tideway Tunnel

Thames Tideway
Tunnel €4.9bn
(£4.4bn)
*(in 2014/15
prices)*

TIDEWAY
Bazalgette Tunnel
Limited
Total cost: €3.5bn
(£3.1bn)
(in 2014/15 prices)

Equity
€1.437bn
(£1.274bn)

Allianz 38.35%

INPP 17.90%

Swiss Life 7.11%

Dalmore 36.64%

Debt/ Revenue

Thames Water
Responsible for preparatory work, integration of TTT in its sewerage
network, and operation
Total cost: €1.2bn (£1.1bn)

Investors motivations and expectations

Why invest in Tideway?

- Critical infrastructure, strong delivery capability
- Stable regulatory regime
- Government support package
- Stable revenue profile, indexed to inflation – appeals to pension funds
- Financing structure with protections for debt investors

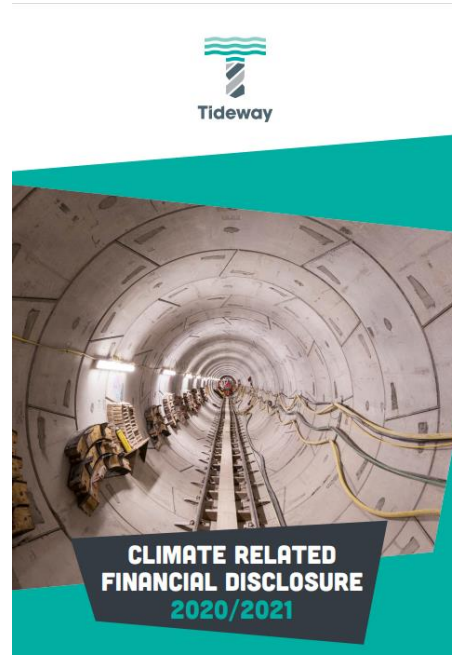
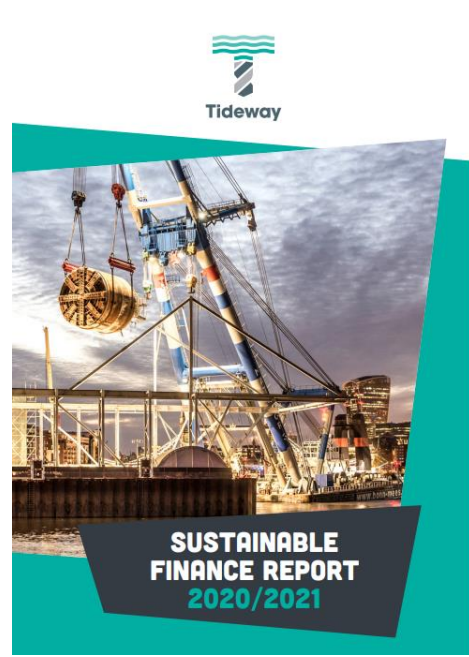
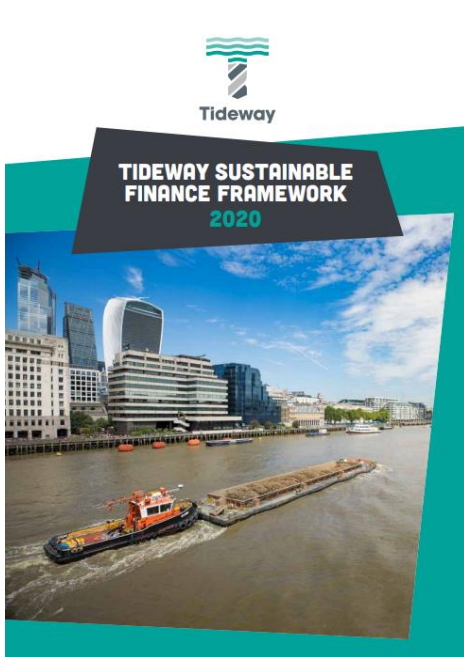
What do they want in exchange?

- Returns (Interest margin or distributions) commensurate with risk
- Delivery on time and on budget
- No surprises
- Good governance
- Regular reporting

How do they get their money back?

- Revenue from Thames Water customer bills will pay for construction, debt service and return to equity investors
- Refinancing
- Government will step-in in extreme circumstances (until Acceptance)

Tideway Sustainable Financing



€1701m
(£1508m)
Green bond
issuance
(17 Green Bonds)

€180m
(£160m)
Sustainable Loan
with KPI linked to
Legacy target

€84m
(£75m)
Green US Private
Placement

- We have aligned our financing with the company's mission
- We published a Green Bond Framework in November 2017, expanded into a Sustainable Finance Framework in 2020
- We report to investors on allocation of proceeds and impact of project, including SDGs - Published 3rd Sustainable Finance Report in July 2021
- We recognise the importance and fully support the Task Force on Climate-related Financial Disclosures (TCFD) - Published 1st Climate Related Financial Disclosure report in July 2021, subsequently updated in July 2022.



**ESG
STRATEGY**



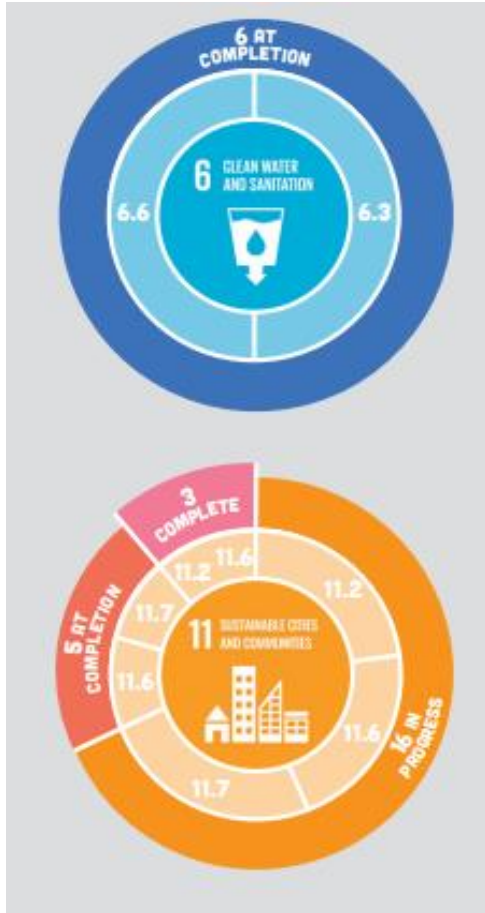
**RECONNECTING LONDON
WITH THE RIVER THAMES
DELIVERING A LASTING LEGACY**



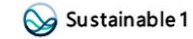
- Legacy strategy to boost the river economy, increase jobs, improve safety standards and drive down carbon emissions



Measuring our value



S&P Global Ratings



Environmental, Social, And Governance Evaluation

Tideway

Summary

Bazalgette Tunnel Ltd., trading as Tideway, is a U.K.-based independent regulated infrastructure provider established in 2015. The company's purpose is to design, finance, construct, and commission the Thames Tideway Tunnel in London, which is in its construction phase. The construction of the 25 kilometer (16 mile) tunnel aims to manage the amount of sewage discharged in the River Thames and the growth in water and sewerage demand associated with London's growing population. This will contribute to the broader London Tideway Improvements (LTI) plan, which will help the U.K. comply with the 1991 EU Urban Waste Water Treatment Directive, of which it was found in breach by the European Court of Justice in 2012.

Tideway's ESG evaluation of 76 reflects our view that sustainability is well embedded in the company's strategic objectives and operations. Tideway has been set up to deliver a tunnel, which we expect to have significant environmental benefits in terms of increasing sewage storage capacity and reducing the amount of combined sewer overflows (CSOs) discharged into the Thames. In addition to the sustainability benefits associated with the tunnel, our assessment incorporates the company's own sustainability credentials. These include Tideway's high governance and social standards partly due to its regulated nature. We also factor the company's strong safety track record, although incidents increased during the pandemic in line with what we have observed with other engineering and construction companies. Our assessment of Tideway's adequate preparedness reflects the company's unique purpose, which limits its exposure to long-term strategic risks and ability to capitalize on opportunities because it will transfer the daily operations of the tunnel to Thames Water upon completion. Therefore, our preparedness opinion has a neutral impact on Tideway's ESG evaluation.

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ESG Profile Score
76 / 100



Company-specific attainable and actual scores

Preparedness Opinion (Scoring Impact)
Adequate (No Impact)

ESG Evaluation



A higher score indicates better sustainability

A two year journey to uncover our social value



Tideway

SOCIAL IMPACT

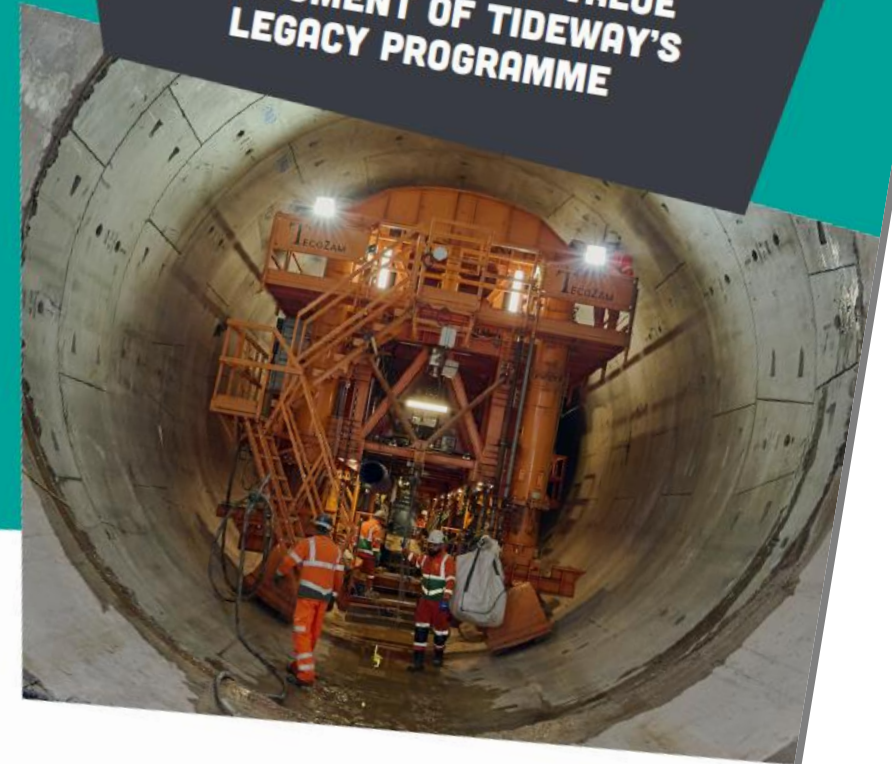
Summary report on
Tideway's evaluation of
its legacy programme

February 2023



Tideway

SOCIAL IMPACT AND VALUE ASSESSMENT OF TIDEWAY'S LEGACY PROGRAMME



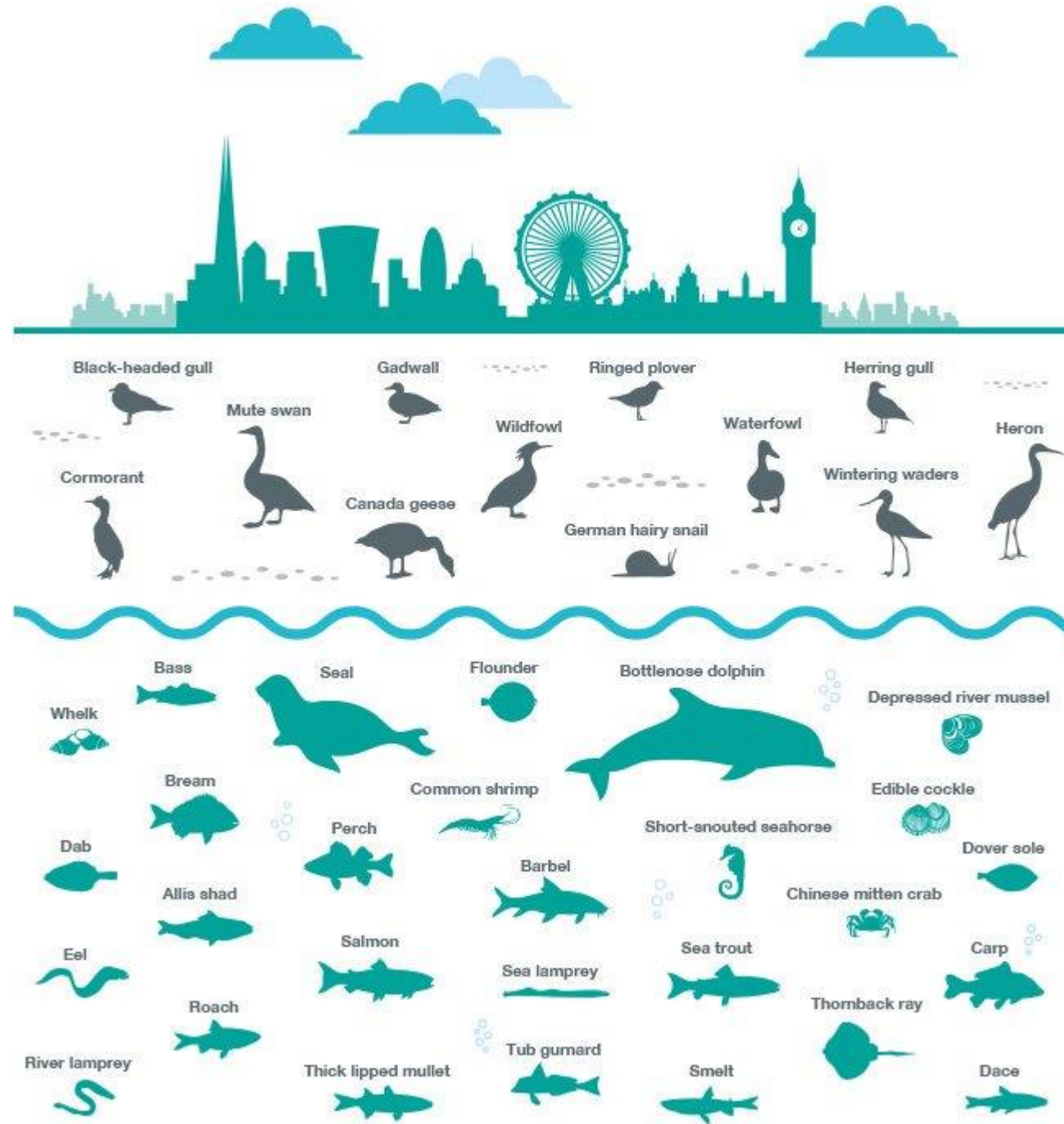
 **STATE
OF LIFE**
Technical report by State of Life

OUR LEGACY

Ecology on Tideway



~1000 harbour seals
~2000 grey seals



Fish thrive in the Channelsea River following the building of the Lee Tunnel

Thursday 1st December 2022 11:28

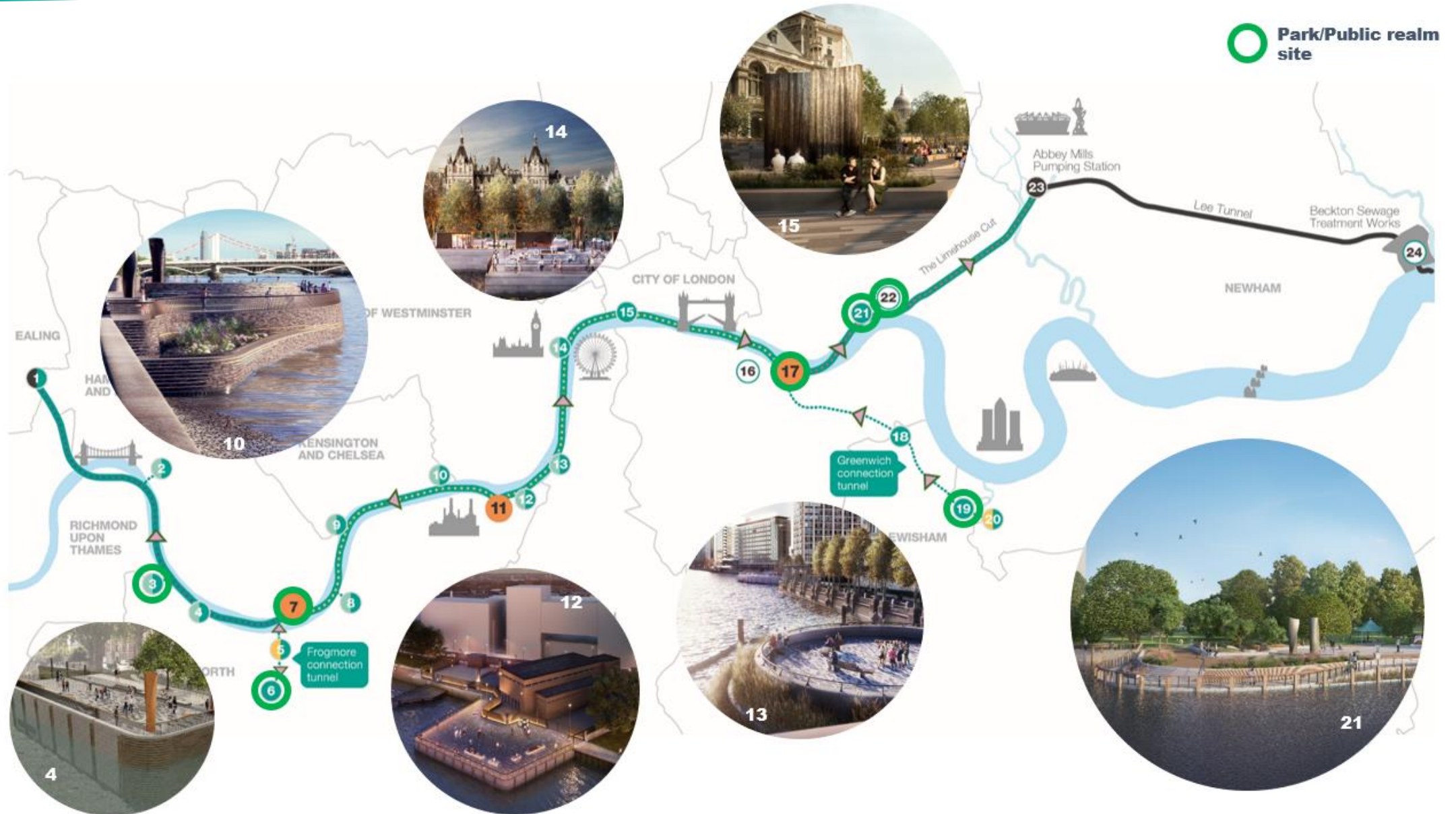


A fish caught and released during the ecological survey on the Channelsea River, November 2022.

Incorporating ecology into our structures



Plus....providing new public realm in the heart of London







MEAN HIGH WATER 2012









Q&A



Tideway

RECONNECTING LONDON WITH THE RIVER THAMES

#SuperSewer

www.tideway.london