



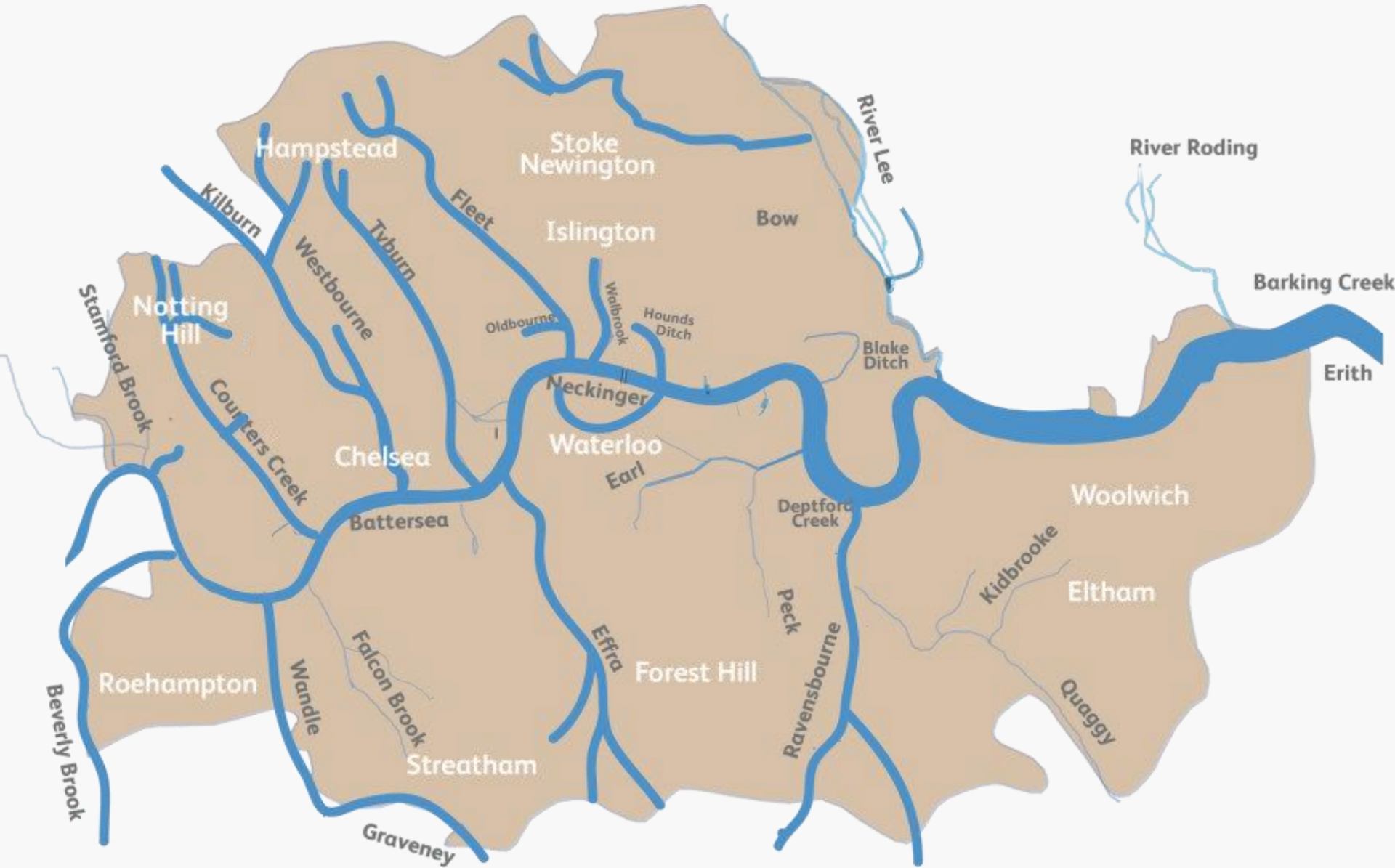
Thames Tideway Tunnel

Ian Fletcher

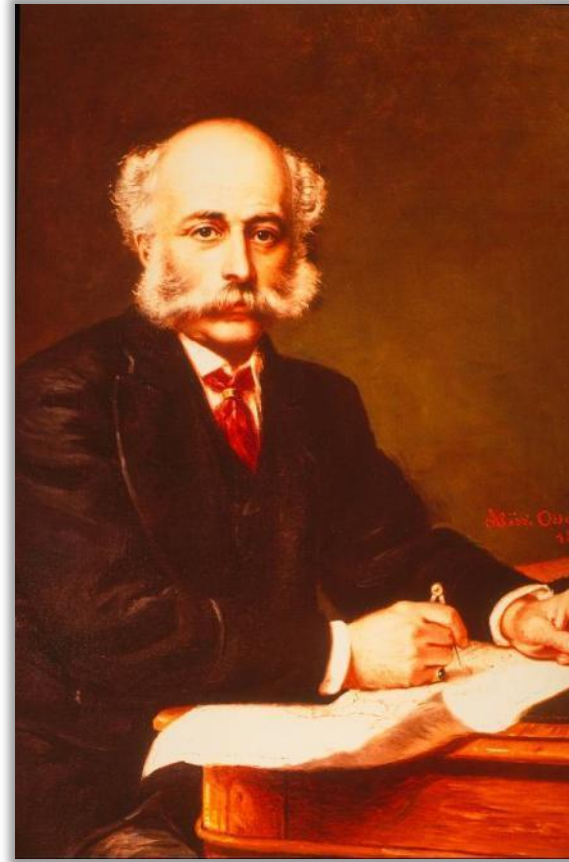
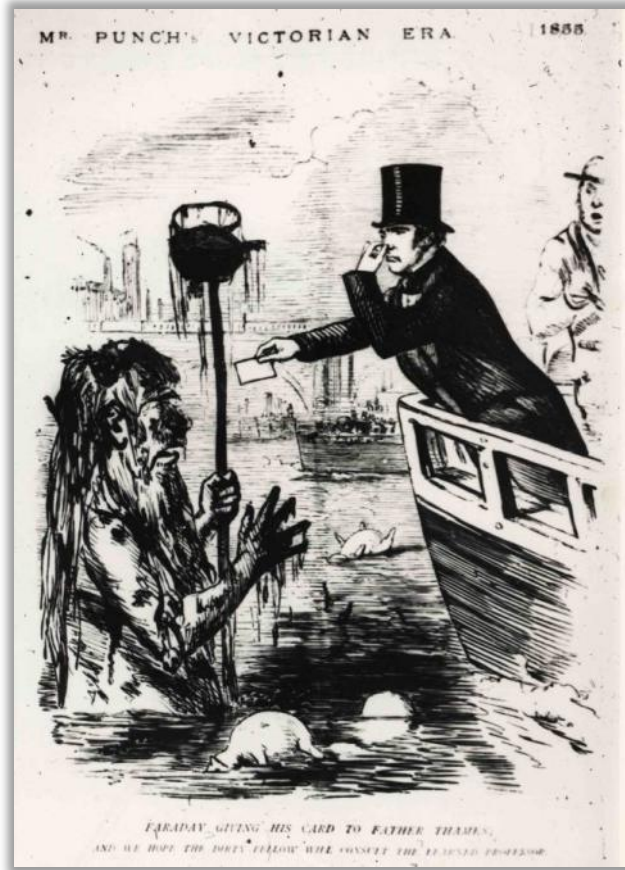
Planning Projects Manager, Thames Tideway Tunnel



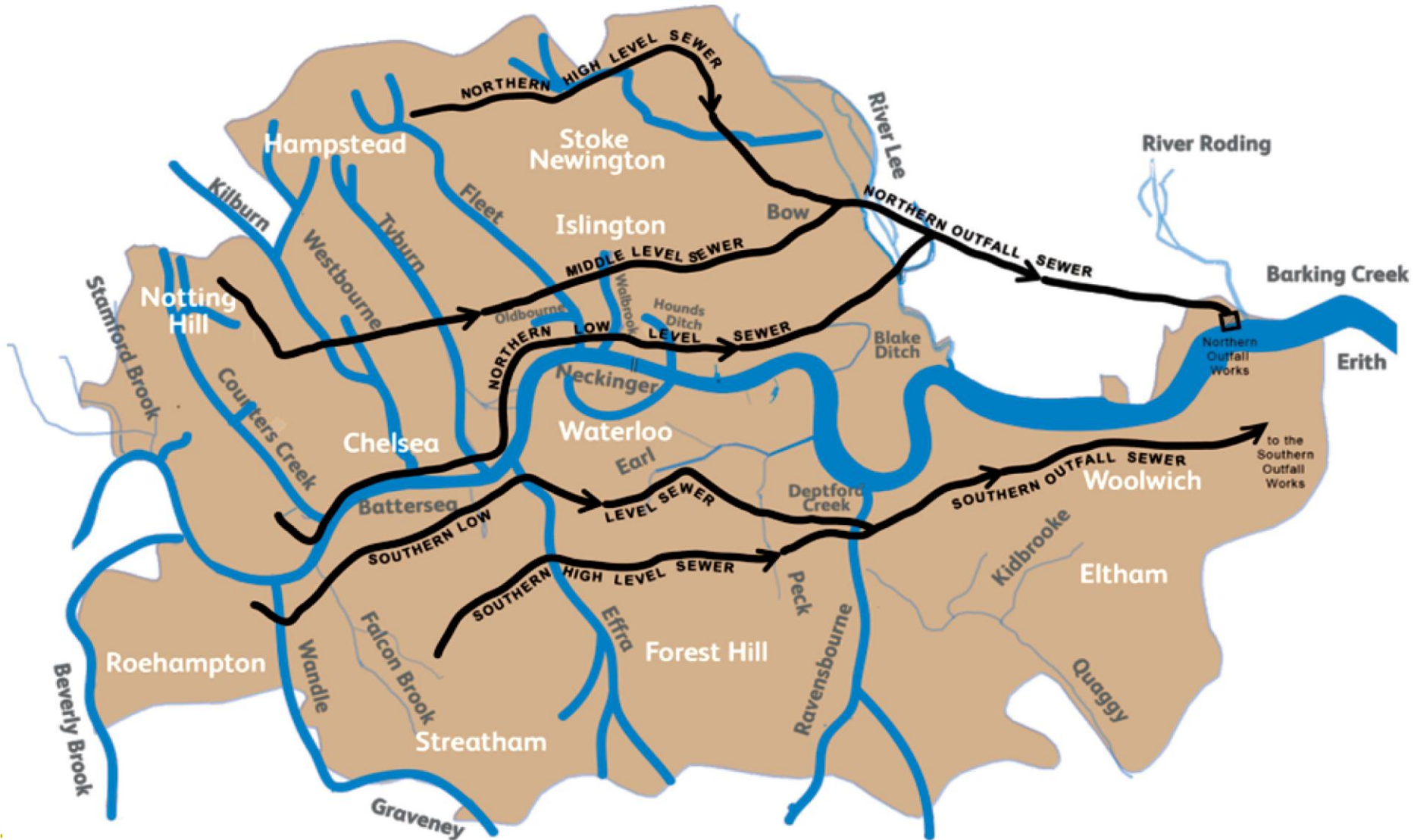
The 'lost rivers' of London



The Great Stink, 1858

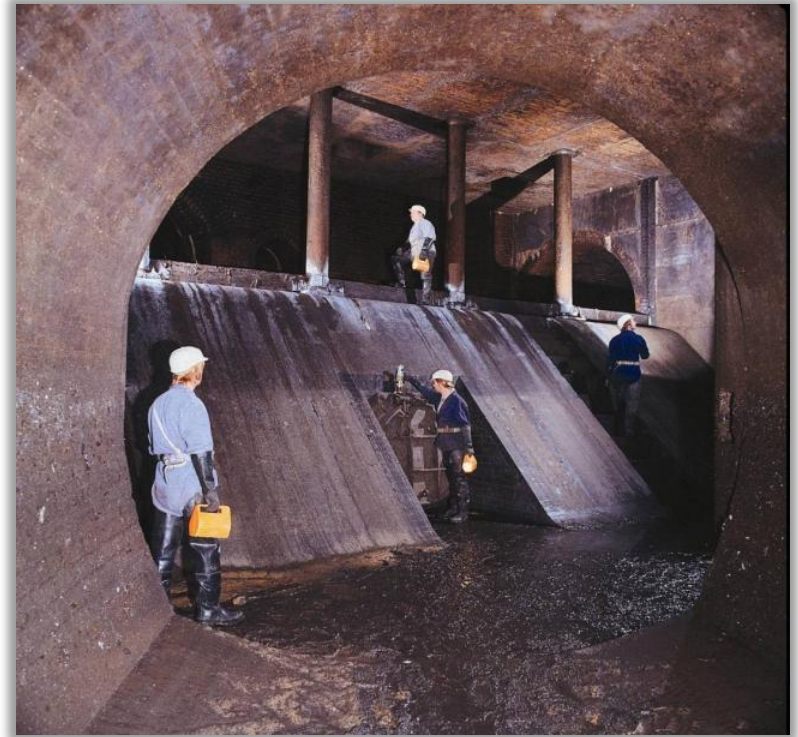


Bazalgette's interceptor sewers

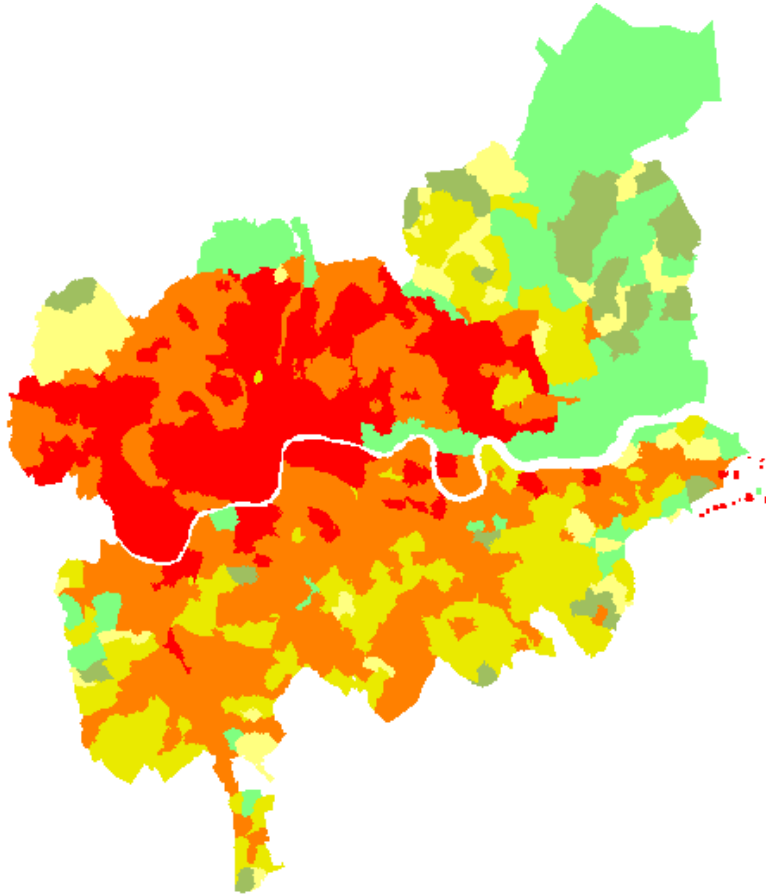


Victorian network







- Still in excellent condition. The backbone of our capital's sewerage system
- The sewerage system lacks the capacity to meet the needs of modern day London

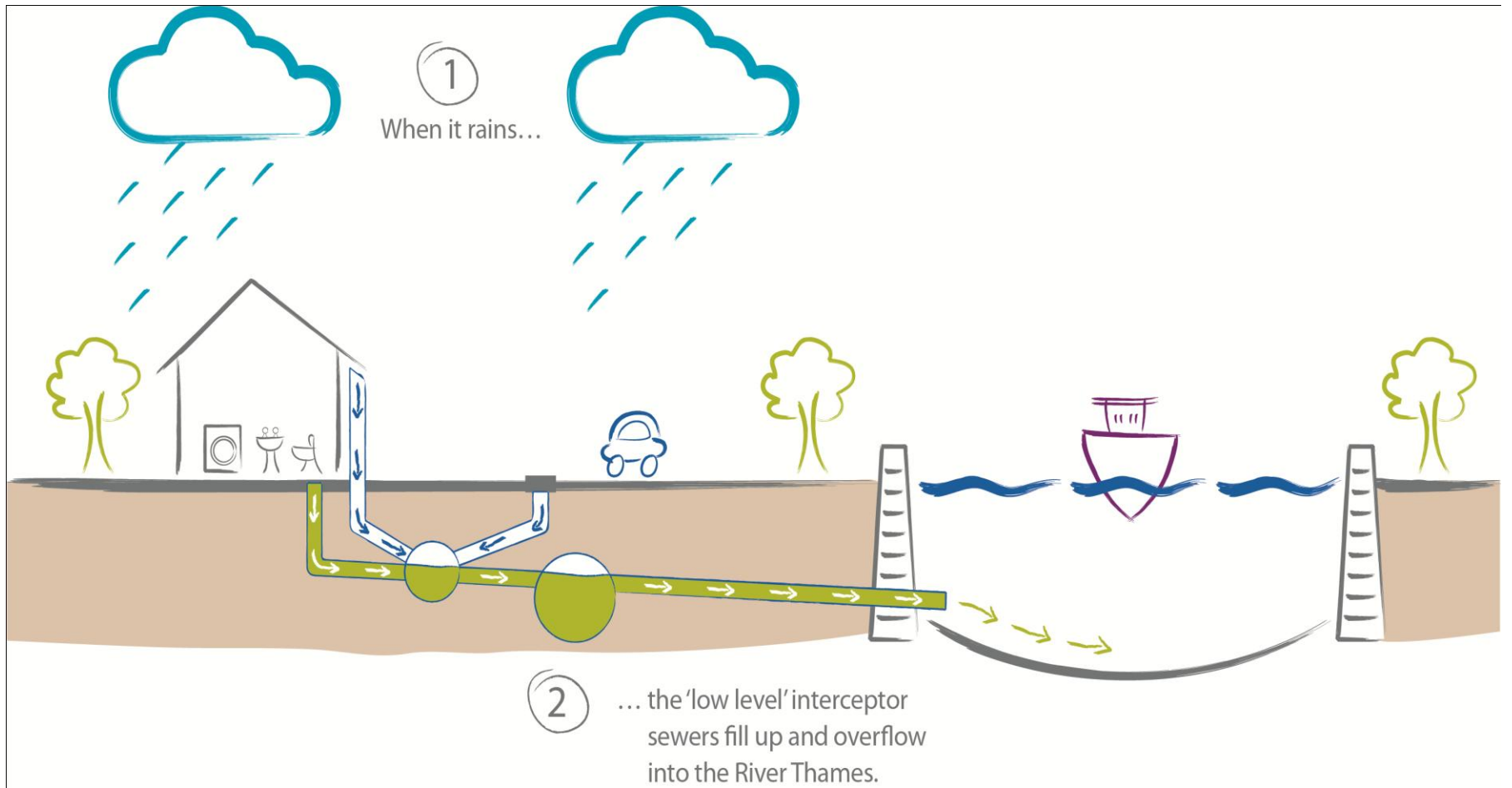


London's sewerage network today



Percentage Connected

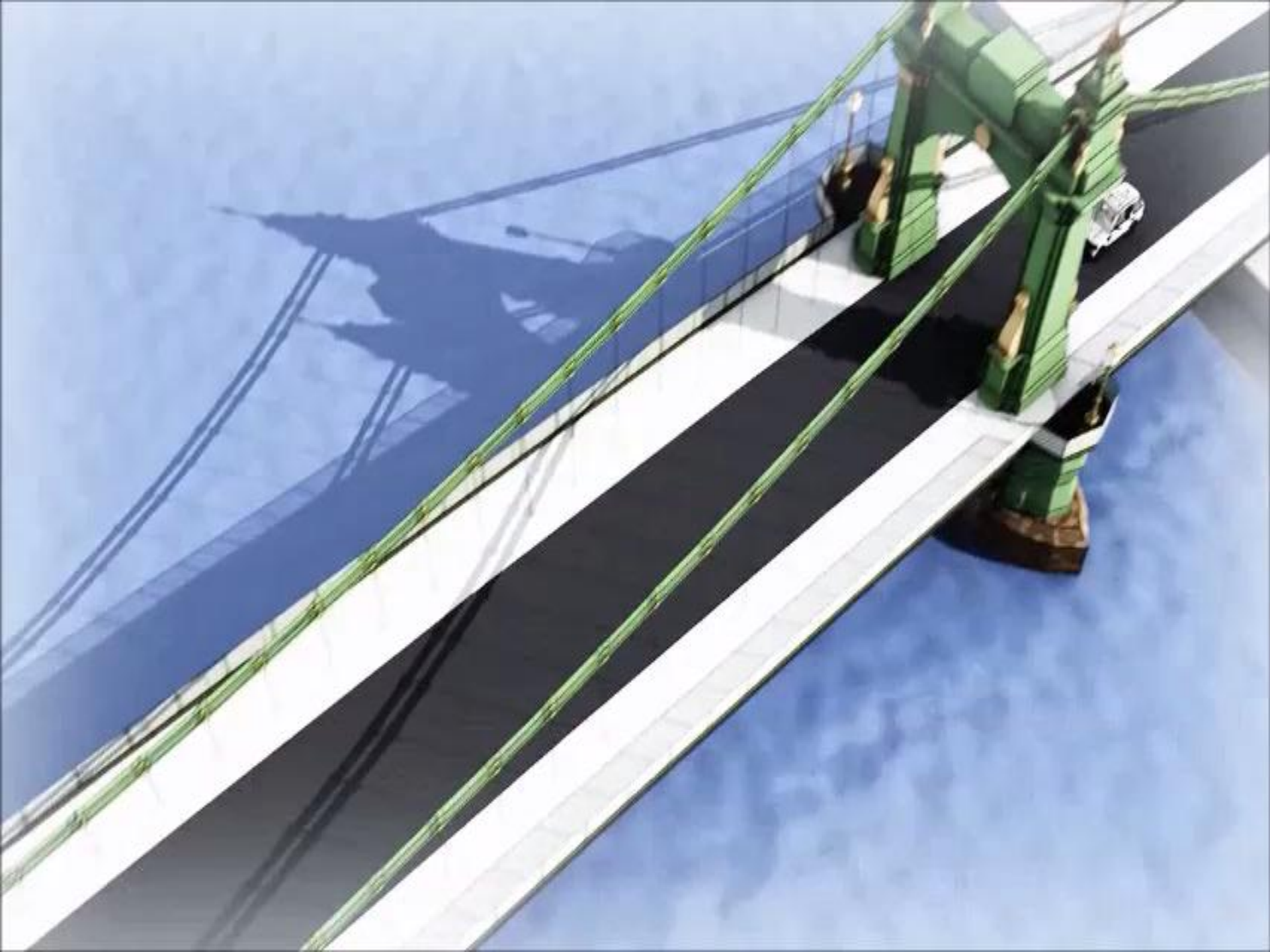
	0-5 %	Separate system
	5-10 %	
	10-20 %	Partially separate system
	20-40%	
	40-70%	Combined system
	70-100%	







Why London needs the Thames Tideway Tunnel

- **Environmental** – tides mean the sewage stays in the river for weeks, affecting dissolved oxygen levels and habitats
- **Human** – frequency of Combined Sewer Overflow (CSO) discharges is a potential hazard to all river users
- **Legal** – the UK fails to comply with the EU Urban Waste Water Treatment Directive
- **Economic** – London's core infrastructure is essential for economic growth





Thames Tideway Strategic Study

Action before sewer: Source Control and Sustainable Urban Drainage Systems (SUDS)	
Within sewer network: Localised storage and separation	
In-river: More 'Bubbler' and 'Skimmer' vessels	
Intercept overflows: Central storage and transfer	



Thames Tideway Strategic Study

Two problems:

- Overloaded sewage treatment works
- Overloaded sewer network

Three solutions:

Sewage Works Upgrades



Creating a cleaner, healthier River Thames

Lee Tunnel



Creating a cleaner, healthier River Thames

Thames Tideway Tunnel

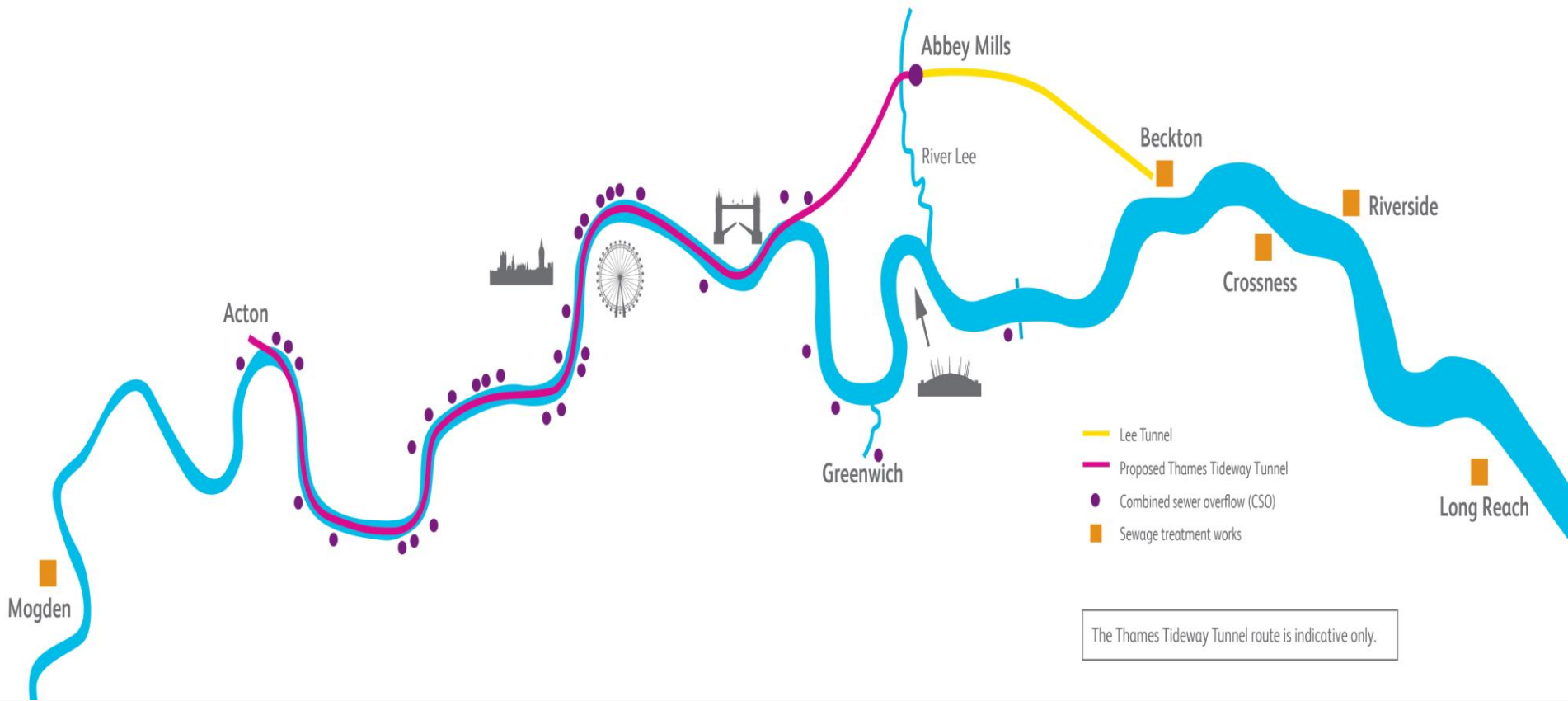


Creating a cleaner, healthier River Thames









- Lee Tunnel
- Proposed Thames Tideway Tunnel
- Combined sewer overflow (CSO)
- Sewage treatment works

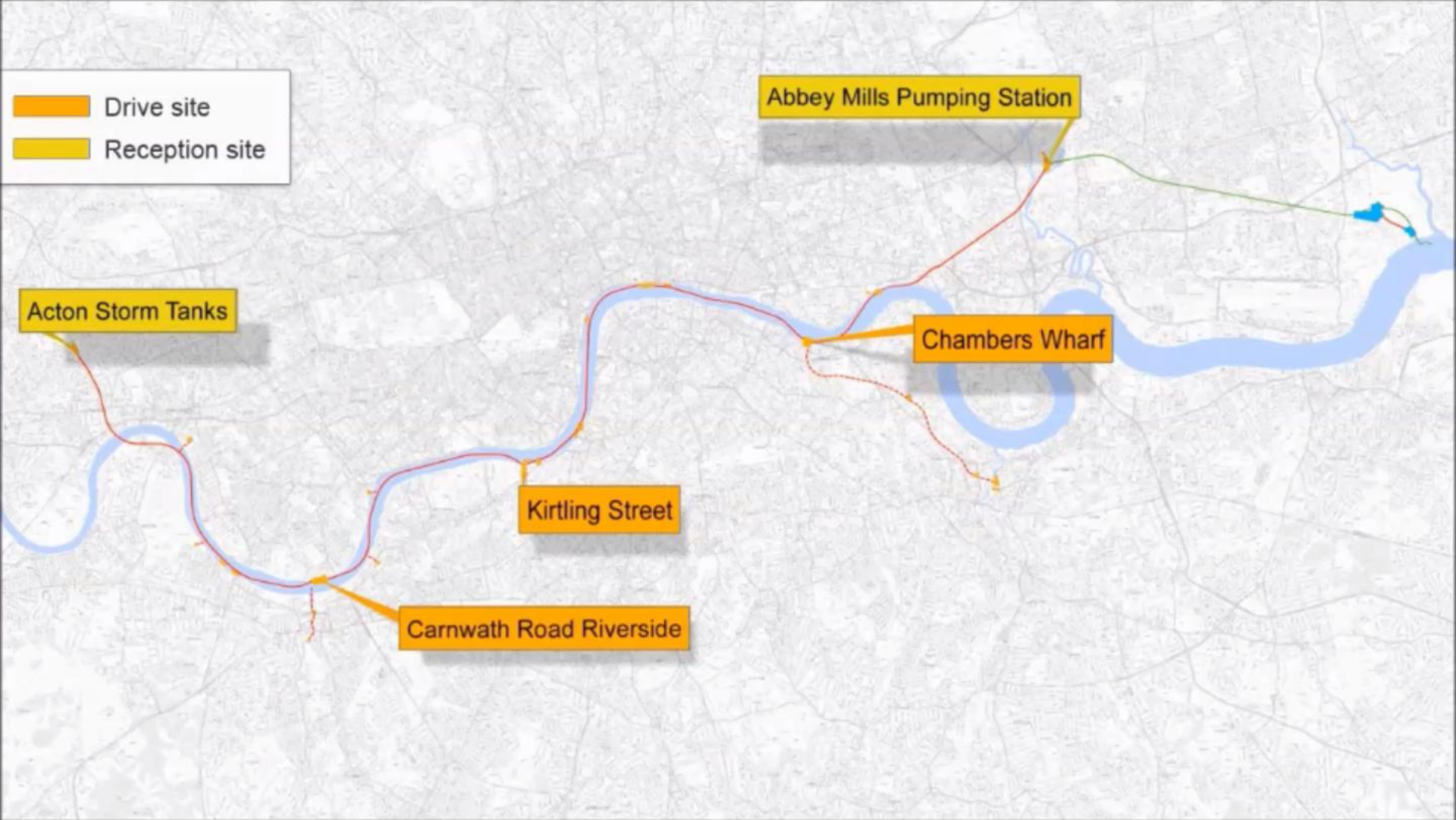
The Thames Tideway Tunnel route is indicative only.

Thames Tideway Tunnel

- Will reduce CSO discharges from once a week to four a year on average:
 - Intercepting 22 CSOs
 - Indirectly controlling 12 CSOs
- Capacity: 1.5 million cubic metres (including Lee Tunnel)
- Length: 25 kilometres
- Width: 7.2 metres internal diameter
- Gradient: The tunnel needs to fall one metre every 790 metres so it can be self-cleansing.



How we will build the tunnel



Drive site

Reception site

Abbey Mills Pumping Station

Acton Storm Tanks

Chambers Wharf

Kirtling Street

Carnwath Road Riverside

Section	Length (km)	Internal diameter (m)	Maximum depth (m)
Acton Storm Tanks to Carnwath Road Riverside main tunnel	6.9	6.5	42
Carnwath Road Riverside to Abbey Mills Pumping Station main tunnel	18.2	7.2	66
Greenwich Pumping Station to Chambers Wharf – the Greenwich connection tunnel	4.6	5.0	56
King George’s Park to Carnwath Road Riverside – the Frogmore connection tunnel	1.1	2.6 – 3.0	26

Route to consent

The planning challenge

- Standard planning route = make separate applications to 14 local planning authorities
- Hybrid bill requires willing sponsoring government department and takes time
- Mayor of London call in is not practical
- Major Project Inquiries rules takes too long
- Planning Act 2008 = single application to IPC for Development Consent Order for Nationally Significant Infrastructure Projects (NSIP)



Planning Act 2008

- Introduced as Planning system perceived as too slow for Major Infrastructure delivery
- Heathrow T5 was at Inquiry for 6 ½ years (opening to decision)
- Main issues in Planning Act 2008
 - National Statement of Policy
 - Application determined by independent body
 - Specific timescales

Route to consent

The planning challenge

- BUT, a sewage tunnel is not identified in the Planning Act 2008
- Section 14(3) Order laid before Parliament 26 March 2012 to bring Thames Tunnel within 2008 Act (ie. NSIP status)
- National Policy Statement for Waste Water includes the Thames Tideway Tunnel



Waste Water National Policy Statement

- Designated 26 March 2012
- Key for establishing need for the Thames Tideway Tunnel

“The examining authority and the decision maker should undertake any assessment of an application for the development of the Thames Tunnel on the basis that the national need for this infrastructure has been demonstrated. The appropriate strategic alternatives to a tunnel have been considered and it has been concluded that it is the only option to address the problem of discharging unacceptable levels of untreated sewage into the River Thames within a reasonable time at a reasonable cost. ”

Project update

Consultation

- **Phase one consultation**
(13 September 2010 – 14 January 2011)
- **Interim engagement**
(11 March 2011 – 16 August 2011)
- **Phase two consultation**
(4 November 2011 – 10 February 2012)
- **Targeted consultation**
(6 June 2012 – 4 July 2012)
- **Section 48 Publicity**
(16 July 2012 – 5 October 2012)



Application for development consent

- Application submitted to Planning Inspectorate: **28 February 2013**
- Application accepted by PINS: **27 March 2013**
- PINS will appointed five inspectors
 - Inspectors will review our submission and make their recommendations
 - Inspectors' recommendations submitted to the Secretary of State for Communities and Local Government and the Secretary of State for the Environment who have three months to make a decision



Planning milestones

- **Registration:**
17 April 2013 - 28 May 2013
- **Preliminary Meeting:** likely to be
September 2013
- **Examination period:** six months
in length, expected to close in
March 2014

The screenshot shows the National Infrastructure Planning website for the Thames Tideway Tunnel project. The page is titled "National Infrastructure Planning" and includes navigation links for "Cymraeg", "FAQs", "Contact", and "Sitemap". The main navigation bar includes "Home", "Projects", "Application process", "Legislation and advice", and "Help". A search bar is located on the right. The project name "Thames Tideway Tunnel" is prominently displayed, along with the status "Waste Water Treatment Plants: by Thames Water". A progress bar indicates the current stage is "Pre-examination", with "Acceptance" and "Examination" also visible. A key message states: "You can now register as an interested party" with a "Register online" button. Below this, it notes that if online registration is not possible, users should call the helpline on 0303 444 5000. The page also features sections for "About this project" (describing a new tunnel for waste water transfer), "Recent activity" (listing events and registration start dates), "Next action" (stating registration closes on Tuesday 28 May 2013 at 11:59pm), "Dates for your diary" (listing key dates like 28/05/2013 and 11/06/2013), and "Location" (Cross London Project).

Legacy

Environmental benefits

- UK will comply with UWWTD
- Larger more sustainable fish population
- Potential for increased biodiversity
- Greater balance between fish and invertebrates
- Increased recreational use of river



Jobs and skills

- Training of between 250 and 400 construction apprentices
- 20% of employment at key tunnel drive sites to come from within the borough
- Overall 25% of jobs from these boroughs and the neighbouring riverside boroughs
- At least 30% of employees on the river should live in Greater London, Kent or Essex



Our physical legacy

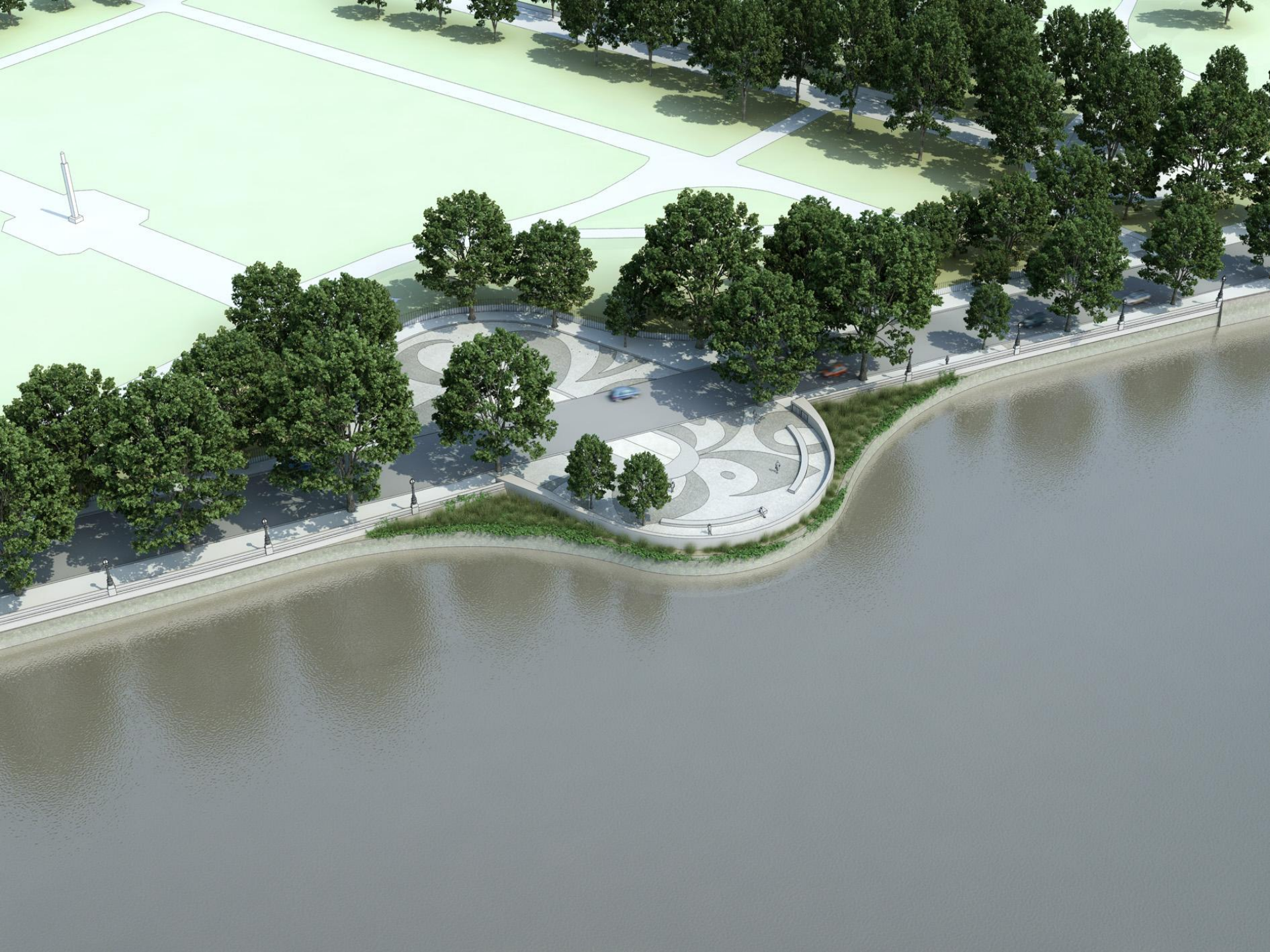
Achieving good design

- Essential focus of the project
- Used a number of strategies to deliver and develop good design:
 - designs developed in an integrated team
 - stakeholder engagement/public consultation
 - design reviews (CABE)
 - Environmental assessment process



Victoria Embankment foreshore









Design principles and components

- 24 sites linked by two common factors:
below ground infrastructure, River Thames
- Project-wide and site-specific design principles
- Design principles split into six subcategories
 - integration of functional components
 - heritage design
 - in-river structures
 - landscape design
 - lighting design
 - site drainage



Signature ventilation columns

Key points

- A Nationally Significant Infrastructure Project
- Paid for by Thames Water customers
- Government to provide contingent financial support for the project
- Delivered by a new stand-alone Infrastructure Provider (IP)
- A world first in terms of financial structure
- Has many stakeholders
- Largest private infrastructure project in Europe

Questions?