Thames Water's approach to managing wastewater

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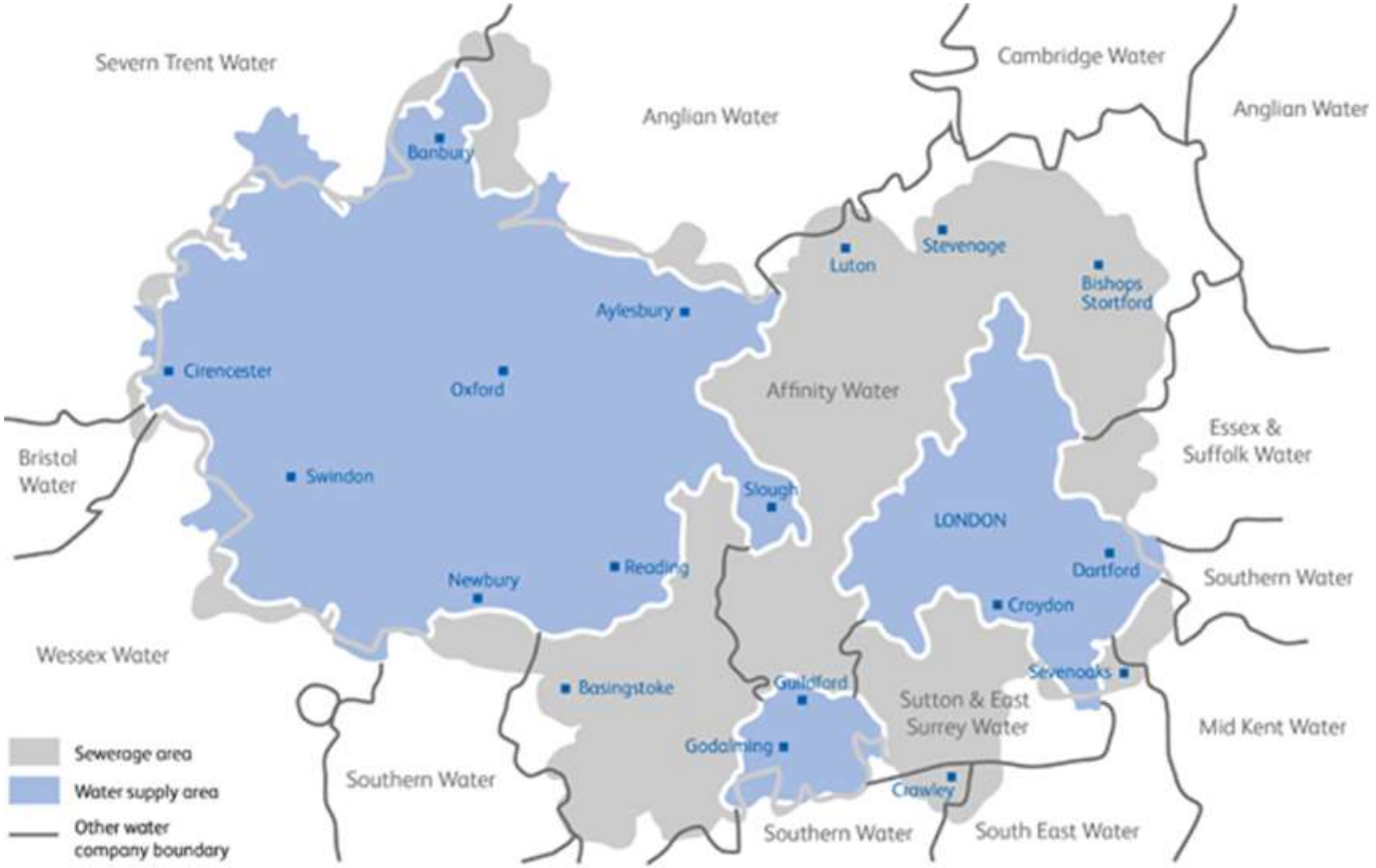
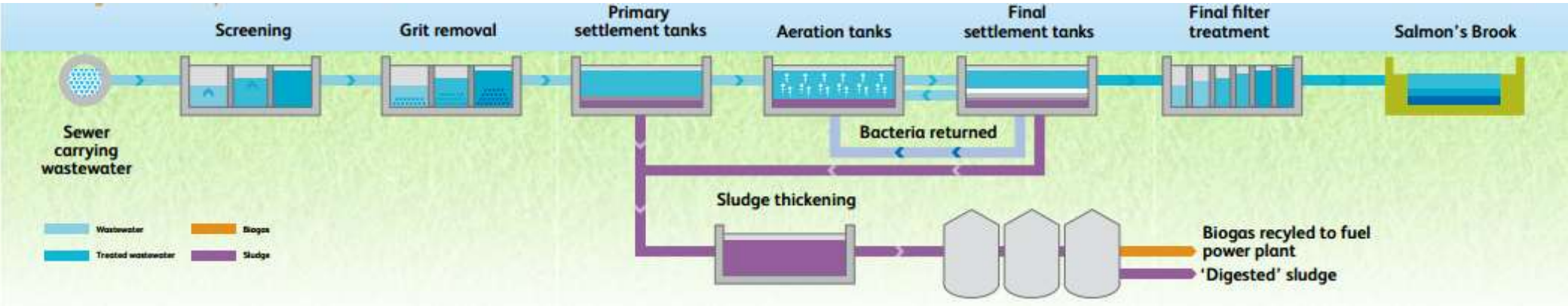
Our role and responsibilities



- Safe and reliable wastewater services for 15 million customers
- Protect and enhance the environment
- Provide an affordable service

Thames Water

Our Wastewater Business



Intake

- c15m population equivalent
- 4.2bn litres wastewater per day
- 350 sewage treatment sites

Processes

- 92% of effluent treated by activated sludge process
- 80% of sites use trickling filter technology

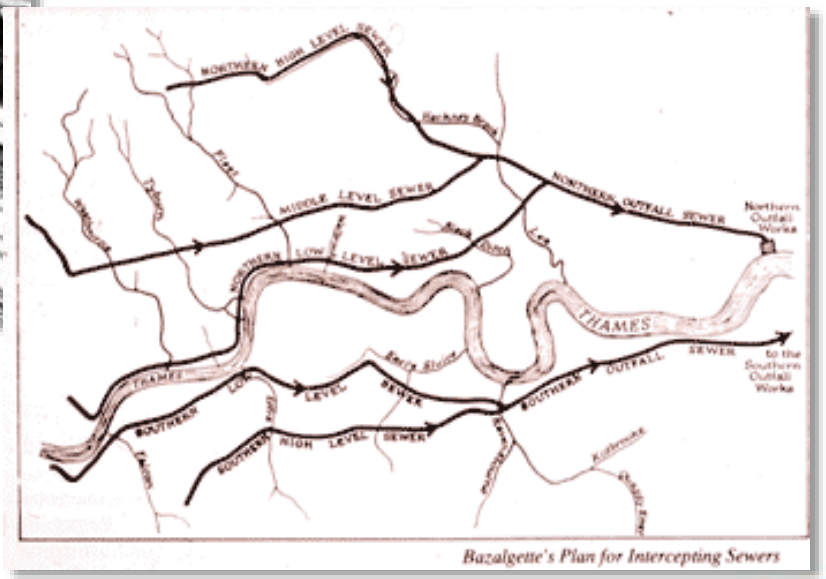
Outputs

- 30 sites treat sludge
- We create 342,000 tds of sludge
- 15.7% of power requirements through renewable energy 12.1% is from sludge

Our Past

A brief history of London's sewerage

- The 'Great Stink' - June 1858
- Bazalgette's construction of interceptor sewers



Bazalgette's Plan for Intercepting Sewers

Our Past

Changes in the 20th Century

- Quality of the River Thames has improved greatly over the past two centuries “Cleanest Metropolitan River in the World”
  - Providing more capacity
  - Enhanced effluent quality

- Main drivers have been:
  - Public health and safety including recreational use of the river
  - European Directives (e.g. Water Framework Directive and Urban Waste Water Treatment Directive)

- Implemented through mixture of environmental legislation and regulatory bodies (e.g. Environment Agency and the Tideway Operating Agreement)

The current challenge

1910
4 million

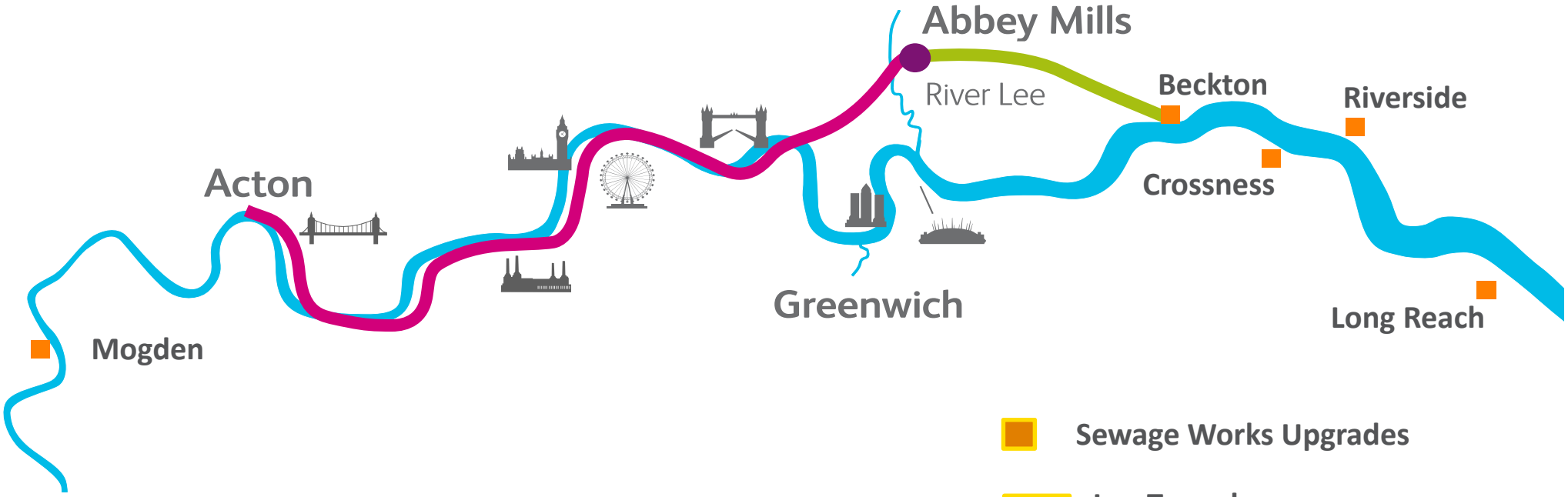
1860
2 million

2013
8 million

Bazalgette design capacity

The solution

London Tideway Improvements



Lee Tunnel

- £635 million project – largest delivered by UK water industry
- Deals with single largest polluting Combined Sewer Overflow in London
- 6.9km tunnel with an internal diameter of 7.2m from Abbey Mills to Beckton Sewage Treatment Works

Lee Tunnel opening

The Thames Tideway Tunnel

Breaking new ground

- Will be a 15-mile-long sewer
- Running up to 65 metres below the river
- Width of three London buses
- The tunnel will be connected to the Lee Tunnel
- Will take up to 7 years to build, at a cost of £4.2 billion (2014 prices)

Sustainable Drainage Systems

Herne Hill & Dulwich Case Study

- £4.2m flood alleviation scheme – sub surface storage, drainage channels, wetland/meadows

- Protect over 200 homes & businesses

- Southwark Council, Thames Water & Environment Agency

River Basin Planning

EU waterbodies have a target of achieving "good" quality status

- New quality targets are tough to achieve
- Our treated effluent contributes towards compliance failures
- Large investment planned to upgrade our STWs to reduce ammonia, biochemical oxygen demand and phosphorus concentrations
- Current technology not sufficient – new treatment techniques being developed

The Old Ford Water Recycling Plant

Joint project with Olympic Delivery Authority

- The UK's largest community wastewater recycling scheme
- Opportunity to test the viability of community-scale wastewater reclamation
- Treats wastewater from the Northern Outfall Sewer
- Daily output of 574,000 litres - goes into a pipe network separate from the tap water supply

Planning for our future

- Visionary for future generations to ensure we protect the river through our capital
- Future pressure on wastewater services from climate change and population growth
- We need to balance aspirations of stakeholders against affordability
- This calls for increasingly innovative approaches to wastewater management

At the heart of daily life