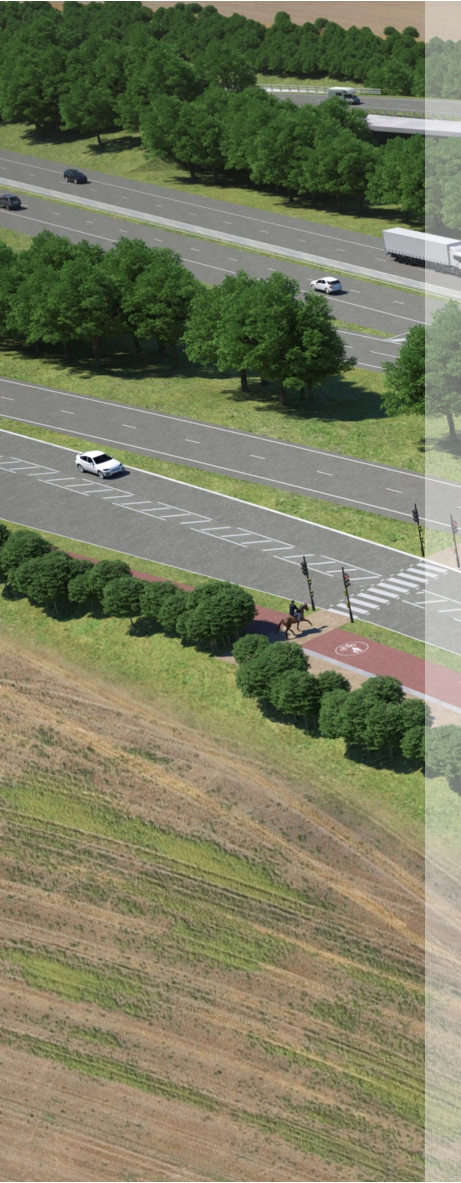


Squeezing every last drop of value from major infrastructure projects

Emily Dawson,
Head of Benefits –
Lower Thames Crossing





Here's what to expect...

1

An introduction to National Highways, and the problem with Dartford

2

Developing a scheme in a changing landscape

3

The limitations of the business case and appraisal guidance

4

Maximising the benefits of Lower Thames Crossing

5

Looking ahead: scheme evaluation

National Highways

We manage and improve over 4,300 miles of motorways and major roads in England known as the strategic road network

1

An introduction to National Highways, and the problem with Dartford



20,000
bridges and other structures



150,000
signs



100,000
sensors, including traffic sensors

10,000
miles of carriageways



100,000
street lights



3,500
electronic messaging signs



4,300
miles of motorway and major A-road

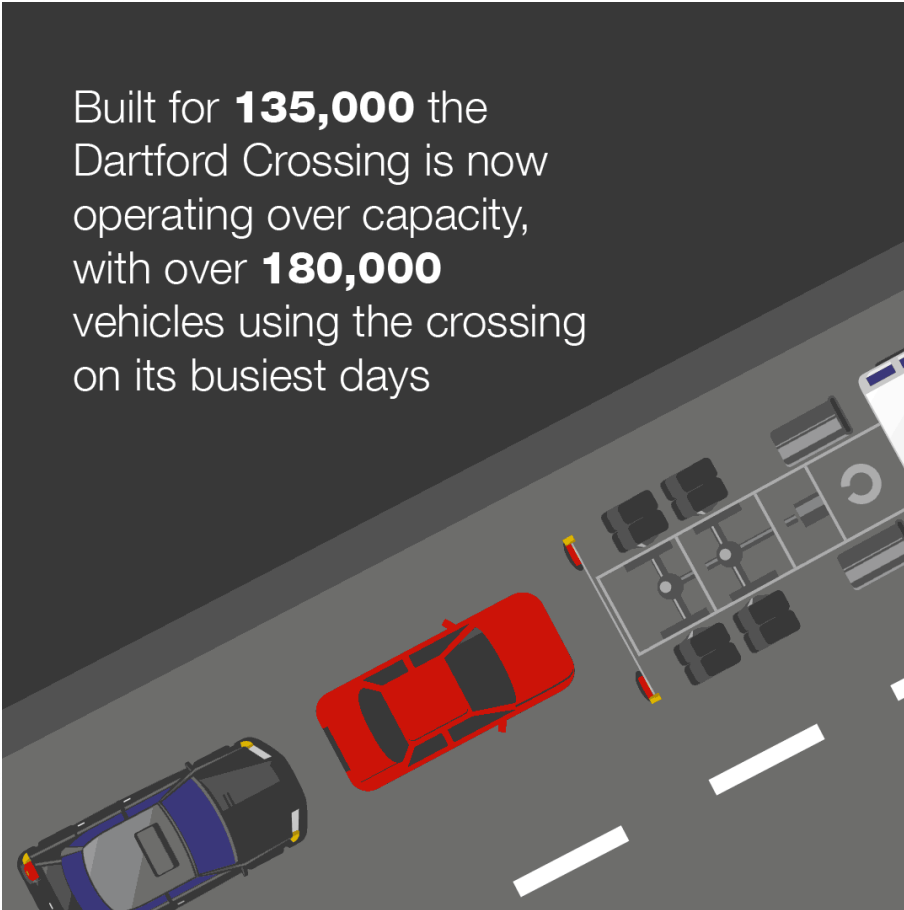


The Dartford Crossing



The need for the scheme – the Dartford Crossing

Built for **135,000** the Dartford Crossing is now operating over capacity, with over **180,000** vehicles using the crossing on its busiest days



Unreliable journeys are normal on the Dartford Crossing

Northbound, during the PM peak...

Scheme Objectives

2

Developing a scheme in a changing landscape

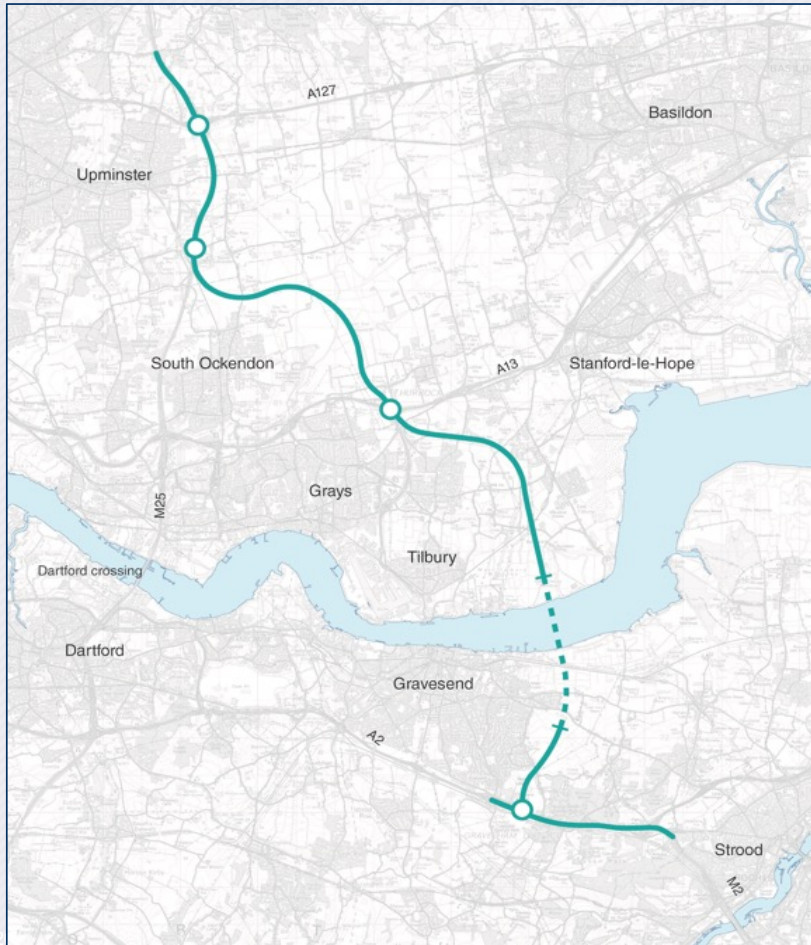
- a) To support sustainable local development and regional economic growth in the medium to long term
- b) To be affordable to government and users
- c) To achieve value for money
- d) To minimise adverse impacts on health and the environment
- e) To relieve the congested Dartford Crossing and approach roads, and improve their performance by providing free-flowing, north-south capacity
- f) To improve resilience of the Thames crossings and the major road network
- g) To improve safety

BUT when these objectives were set in 2018, there were...

- × No recent Local Plans
- × No Thames Estuary Growth Board
- × No Thames Freeport proposals
- × No updated HMT Green Book
- × No levelling up agenda
- × No Decarbonisation of Transport plan

So how do we measure our success in 2034, three years after opening?

Our proposals for the Lower Thames Crossing



£6.4bn – £8.2bn cost



Most ambitious road project since the M25 opened 30 years ago



Nearly **double road capacity** between Kent and Essex



Will open a **quicker freight connection** between the South East and the Midlands and the North



Relieve congestion at Dartford by **reducing vehicles using the crossing by 21%**



Approximately **14.5 miles (23km)** of new road



Two 2.6-mile tunnels crossing beneath the River Thames – the longest road tunnels in the UK



Third largest bored tunnels in the world



Three lanes in both directions (apart from the southbound connection between the M25 and A13 where it would be two lanes)



Carbon... our biggest challenge?

- A Pathfinder project, we're focused on driving down carbon and it's at the heart of our procurement process - a first for a major UK infrastructure project
- Delivery partners will be incentivised to deliver continuous carbon reduction
- Our supply chain will need to have their own net zero targets and conform to the PAS 2080 carbon management standard

Low

Buy at a level that represents current market best practice

Lowest

Adopt a pathfinder approach to support Net Zero trajectory for National Highways

Offset

Mitigate consenting risk and align to leading peer organisations





Ensuring the business case tells the full story

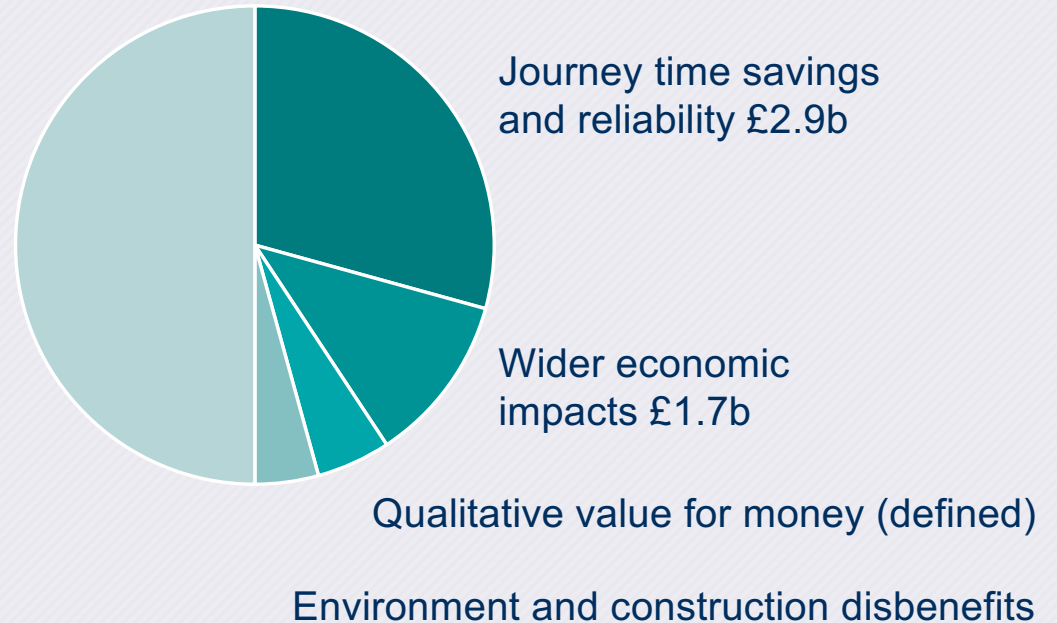
3

The limitations of the business case and appraisal guidance

Strategic Dimension

- Wider economic and social benefits;
- Resilience
 - GDP impacts of increase in international trade
 - Wider benefits to freight industry operations
 - Improved life satisfaction
 - Opportunity for accelerated housing growth
 - Improves case for further investment in the region
 - Accelerated decarbonisation of construction industry
 - Social Value during construction

Economic Dimension



More reliable

journey times



22,000

Jobs supported during construction



4

Maximising the benefits of Lower Thames Crossing

Journey Times

Tilbury Docks to Innovation Park, Medway

27 minutes with LTC



19 minutes saved

minutes saved

46% faster

Ebbsfleet Garden City to proposed Brentwood Business Park

28 minutes with LTC



7 minutes saved

minutes saved

20% faster

Innovation Park, Medway to Southend Airport

58 minutes with LTC



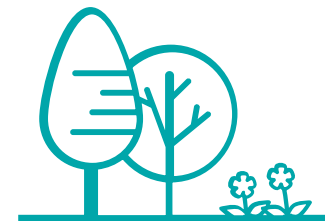
22 minutes saved

minutes saved

27% faster

The proposed Thames Chase bridge – a new bridge addressing historic severance, linking the community forest and improving existing crossing through culvert (inset)

Improved biodiversity



3

new open parklands


Opening up the estuary and enhancing the surroundings at Coalhouse Fort



Creating bigger, better connected habitats for wildlife and people to enjoy




Connecting communities – walkers, cyclists and horse-riders



Lower Thames Crossing

Walkers, cyclists and horse riders



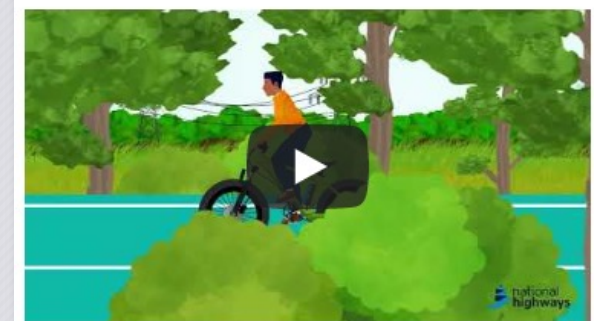
For every 1km of new road, we are delivering almost 3km of new or improved pathways to encourage active travel and promote health and well-being across the region.

Over 60km of new or improved pathways for walkers, cyclists and horse riders.

This map is for illustrative purposes only.



Watch our video about the proposed new or improved pathways in Kent



Watch our video about the proposed new or improved pathways in Thurrock, Brentwood and Havering

Delivering Social Value during construction

Key measures of success

Almost half

of the workforce living within 20 miles of the scheme



£1 in £3 spent with **social enterprises** and SMEs



A diverse workforce with **equal retention rates** for protected characteristics



Over **500 unemployed**

helped back into the workplace

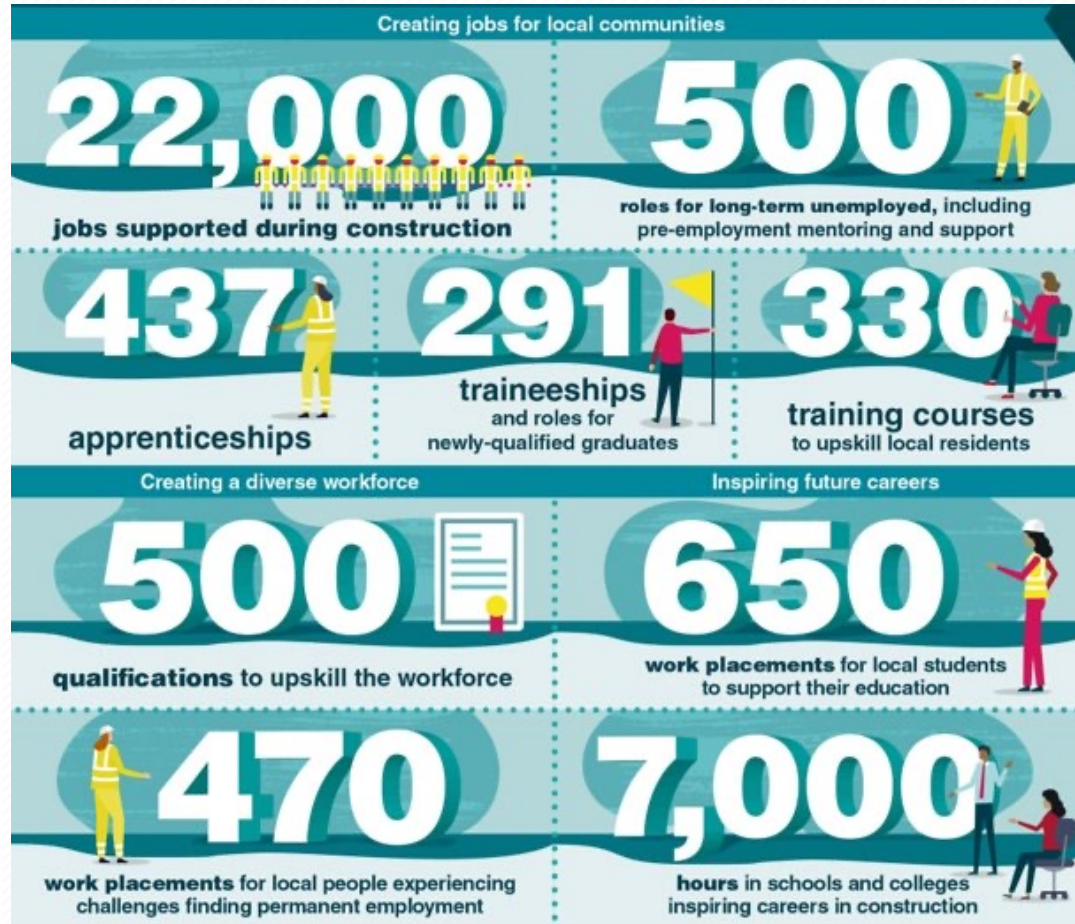




Using Minecraft to inspire the next generation

We are providing free teaching resources to help young people learn about the careers that connect people around the country. To build the new crossing we will need a strong, diverse workforce, so we've built the scheme in Minecraft as a fun way to teach KS1 and KS2 students ages 7-14 about future careers in our industry.

From protecting biodiversity and conserving heritage, to digging a tunnel and using technology to make roads safer, teachers will have everything they need to help students explore the range of roles and skills required to deliver a large infrastructure project



"We didn't think we would be successful due to our size, but we gave it a shot and here we are."

"National Highways helped us get our brand and name out there. If you genuinely believe you can deliver what's needed, talk to National Highways. Where we've needed advice, they've helped us all the way."

David Bown
Company Director, K2 Recovery

Bringing stakeholders together to drive £30m of wider investment in the region

Building local support and advocacy

Supporting the case for investment

Demonstrating contribution to stakeholder priorities



Heritage restoration works and interpretation at Dagnam Park, in partnership with London Borough of Havering

Woodland restoration at Telegraph Hill, Higham, in partnership with the North West Kent Countryside Partnership

Improvements to the coastal path and reconnection of the national cycle network, in partnership with ASELA and Thurrock Council

A new 95ha community woodland at Great Warley in Brentwood, in partnership with Forestry England

CASE STUDY:

Developing proposals for a new Super National Nature Reserve

National Highways is working with Natural England and the Kent Downs AONB, as well as other environmental stakeholders south of the River Thames, to explore the opportunity to declare the area a Super National Nature Reserve (SNNR).

If successful, this declaration would secure a new identity for the area, create an exciting vision for how sites could be managed collectively in a way that maximises benefits for nature and people, and help site managers to secure funding to tackle common challenges.

It's a great example of how LTC is raising the bar when it comes to major infrastructure projects bringing others together to identify opportunities alongside the core scheme, and providing the resource needed to ensure they are realised.

In this case, National Highways is funding a piece of work by an independent consultant to set out the proposal in more detail. More importantly, the LTC Benefits Team has been instrumental in working closely with the Kent Downs AONB and facilitating conversations across the group to work it through in more detail.



Supporting sustainable growth across the Thames Estuary

it doesn't support the economic case, but is invaluable to the region

TIMELINE	
June 2018	Thames Estuary Growth Commission publishes 2050 Vision
March 2019	Govt commits £1m to set up new Board to champion growth
Oct 2019	MHCLG appoints Thames Estuary Envoy
July 2020	TEGB publishes Green Blue Action Plan
March 2021	TEGB steers successful bid for Tilbury Freeport
Coming soon	Homes England to publish principles for accelerated housing and jobs growth

“The Thames Estuary is the UK’s number one growth opportunity. LTC provides a critical new connection, unlocking opportunity across the region and enhancing the value that can be delivered by many of the other key developments planned in the Estuary.”



Kate Willard OBE
Thames Estuary Envoy
and Chair
Thames Estuary Growth Board





Evaluating the Lower Thames Crossing

Testing the appraisals made to support the business case

- Journey time savings and reliability
- Walkover surveys of environmental mitigation
- Business productivity

Understanding the local benefits realised during delivery

- Increase in capability of SMEs and social enterprises
- Jobs and skills supported
- Investment made in local communities

Understanding our wider network impacts

- Congestion relief at Dartford, and anticipated increase in cross-river traffic
- Anticipated traffic increases on local roads
- Unintended impact

The extent to which wider changes have occurred in the region

- Increase in housing delivery, new jobs and inward investment
- Wider government and private investment in the region

Unintended consequences

- ?
- What lessons can be learnt to support the case for future investment in infrastructure, or improve project delivery?