



# Lower Thames Crossing Sustainability report

**Delivering the UK's greenest road**

2024 / 2025



# The need for the crossing is greater than ever

The Dartford Crossing is one of the UK's most vital roads, but also one of our most unreliable.



Congestion at the Dartford Crossing is a handbrake on the UK economy. The lack of a reliable connection means the River Thames is a barrier, limiting growth of local and regional economies.

Initially designed for **135,000** vehicles a day, the crossing is now used by **150,000** a day and more than **190,000** on its busiest days – carrying over **50m** vehicles a year



Severe congestion and large traffic volumes create up to **3,000** incidents a year, one of the highest levels on the road network

**19 out of 20** northbound journeys in the evening peak are delayed, while **2 out of 3** take twice as long as they should

## Benefits

The Lower Thames Crossing would:

Nearly double road capacity across the River Thames east of London

Ease congestion by taking over **13m vehicles** from the Dartford Crossing every year

Bring an additional **400,000** jobs within an hour's commute of local communities



Improve journeys and boost the economy by providing a reliable new connection between people and jobs, businesses and customers, and the region's key ports, manufacturing centres and distribution hubs.



## About the Lower Thames Crossing

The proposed Lower Thames Crossing would connect Kent and Essex through a tunnel beneath the River Thames.

As the UK's most ambitious road project in more than 35 years, it will almost double road capacity across the river to the east of London, bringing communities closer together and giving millions of people more flexibility around where they live, work and learn.

It will unlock economic growth locally and nationally by creating a reliable new connection linking the South East with the Midlands and the North.

In development since 2013, the Lower Thames Crossing is already delivering benefits for local communities and the environment, delivering more, bigger, better and connected habitats across the South East. By creating over 1,000 hectares (ha) of semi-natural habitats, we'll significantly increase biodiversity while improving key sites for protected species and creating habitats that will thrive in future climates.

By forming partnerships with others, we are also ensuring that sites are managed in a way that maximises benefits for people and nature.

**45%**

Recruit almost half of its workforce from within 20 miles – upskilling local people with new qualifications and training



**£1 in every £3** of the construction budget with SMEs

Create over 1,000ha of semi-natural habitats, provide two new public parks, a 100-hectare community woodland, almost 40 miles of new walking, cycling and horse-riding routes and plant more than one million trees



Explore methods to achieve carbon neutrality in its construction and transform how the UK delivers infrastructure projects

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# Foreword

Welcome to our second annual Sustainability Report. Thank you for taking the time to learn more about our plans. In this report, we will illustrate how our determination to build the UK's greenest road is evident through our actions. Over the past year, we have built upon our initial steps, and this document outlines what we have accomplished so far, and what lies ahead in our sustainability mission. We recognise that the path forward is fraught with challenges, especially as our goal is not only to construct the UK's greenest road but to transform the infrastructure sector to be fit for a net-zero future. However, we have a burning drive across our organisation and supply chain to turn our ambitions into reality and meet these challenges head-on.

In the 21st century given the twin challenges of climate and nature crisis, it is no longer acceptable to just build infrastructure. We need to deliver much more than a new road. The Lower Thames Crossing, with its size and scale, and with our track record of successfully delivering roads infrastructure, means we have an opportunity to focus on how we build as well as what we build. While there has been a delay to the decision on our Development Consent Order to May 2025, this provides us with additional time to focus on setting the future standard for infrastructure construction and deliver a lasting positive legacy for the environment and local communities.

## Our ambition around sustainability

Our commitment to sustainability is at the heart of everything we do. My team's ambition is to create a new road that not only meets the transportation needs of tomorrow but also sets the benchmark for future infrastructure projects. With the Lower Thames Crossing, we aim to break the paradigm that infrastructure development comes at a cost to the natural environment. By integrating sustainable practices into every phase of design and construction, we will minimise our environmental footprint and positively contribute to the communities we serve and the construction industry.

## Sharing our journey

Transparency is crucial in our journey towards sustainability and this report is a testament to our commitment to openness. It provides insights into our progress and our challenges, as well as our future plans. And I hope that by sharing what we're doing, we can cultivate a collaborative approach with our stakeholders that is built on trust.

## Delivering on sustainability through our purpose framework

In this year's report we have set out our guiding principles in the form of our purpose framework. The framework is there to ensure that sustainability is a core principle, which guides our decision making and our actions. It will help us align our goals with broader environmental and social objectives, and ensure we deliver a project that is resilient, inclusive and beneficial for all. We will be moving from the planning application phase of the project to the mobilisation and design phase – it is early days, so our report reflects that phase which is about planning, and building a team. These are the foundations on which successful projects are built.

## Developing our supply chain

A sustainable project requires a sustainable supply chain, and we are dedicated to working with our suppliers – large and small – to ensure they share our commitment to sustainability. By encouraging strong partnerships and innovation, we hope to create a supply chain that supports our environmental and social objectives. I've been hugely impressed by the creativity, openness and bold approach of our supply chain – they are as motivated as we are to make the changes and innovations needed to transform our sector.

## Hydrogen and Hole Farm

Looking ahead, we have set ambitious targets for the coming year. Two key deliverables are the integration of hydrogen as a fuel into our works, which will reduce our emissions, and the development of Hole Farm, which will be a model of sustainable construction. These initiatives are pivotal in our strategy to enhance sustainability and set new standards in the industry.

I'd like to take this opportunity to thank our local communities, stakeholders and partners for their continued support as together we strive to build a better, more sustainable future.



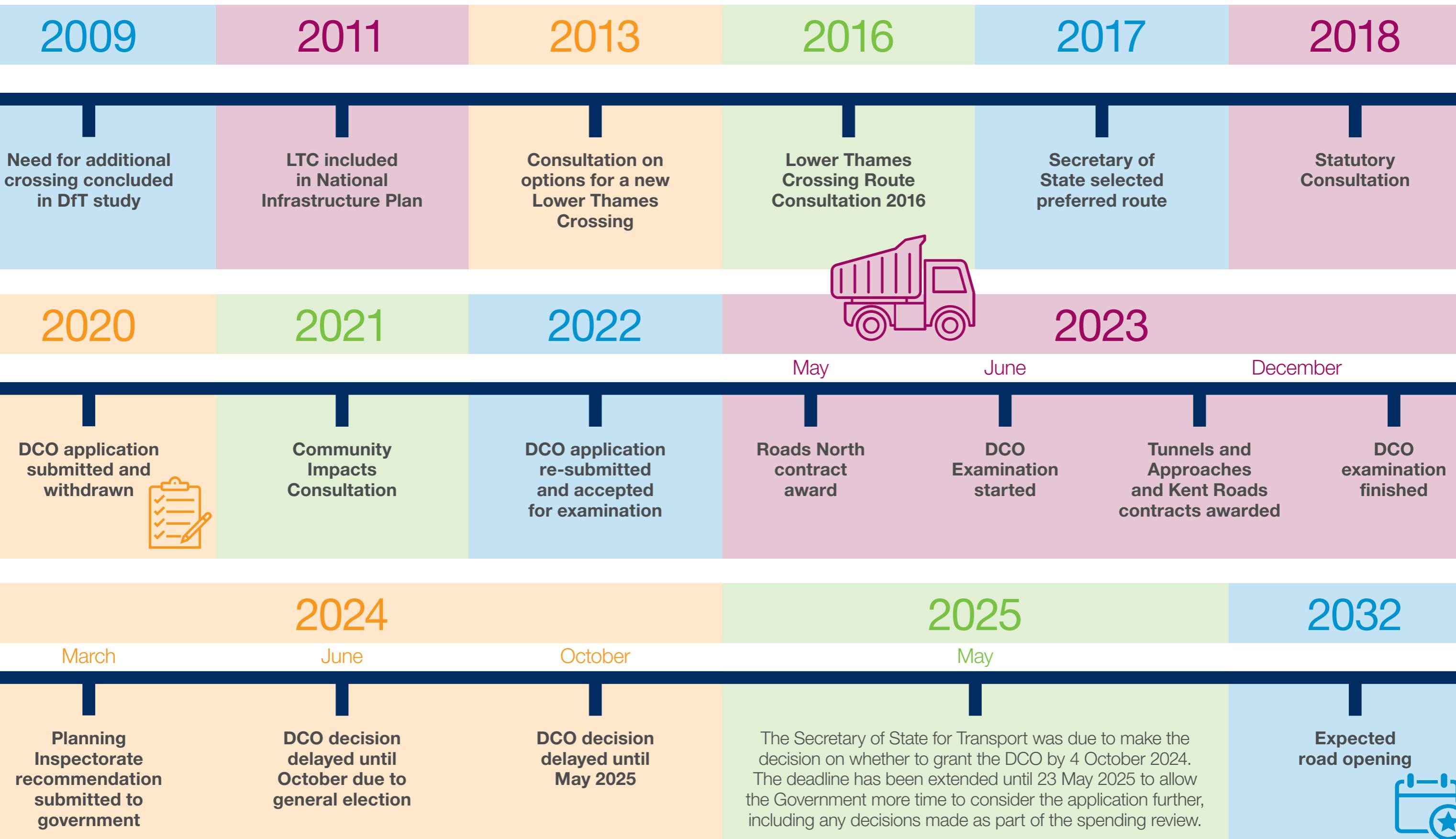
**Matt Palmer**

Executive Director, Lower Thames Crossing



**“With the Lower Thames Crossing, we aim to break the paradigm that infrastructure development comes at a cost to the natural environment.”**

# Our story so far...



# Year at a glance



Skanska announced as the preferred bidder for the Kent Roads contract

July 2023



Local young people start their careers at Balfour Beatty

September 2023



Hole Farm Community Woodland given planning consent

December 2023



Around 50% reduction in our predicted carbon emissions as all three DPs onboarded

December 2023



Bouygues Travaux Publics and Murphy awarded Tunnelling contract

December 2023



75,000 trees planted at Hole Farm

January 2024



Hydrogen meet the bidder event

February 2024



Lower Thames Crossing becomes first major UK infrastructure project to be awarded Gold by the Carbon Literacy Project

March 2024



ConstructZero 5 Client Carbon Commitments event to drive carbon reduction in infrastructure industry

April 2024

Heritage investment in Warley Place, Brentwood completed

April 2024



Low-carbon footbridge contest announced

July 2024



Community drop-in events

September 2024



Launch of skill hub pilot

October 2024



## What we've delivered to date:

- 1.32MtnCO<sub>2</sub> reduction in carbon (around 50% reduction from 2020 baseline)
- Over 200 engagement events
- Over £20 million invested in community projects
- 87,500 trees planted at Hole Farm
- 2,924 hours of Carbon Training delivered

# Our purpose

**The Lower Thames Crossing will be transformational not just for Kent, Essex and the wider South East region, but also nationally. It will unlock growth by creating a new, reliable connection for communities and businesses. We also have the ambition to build the project in a transformational way, setting the standards for efficient, world-leading low-carbon construction that will leave a lasting legacy for the local region, the construction industry and the UK economy.**



**To drive a change in how we deliver the Lower Thames Crossing, we have created a common purpose and intent for the project.**

Our purpose is to deliver the UK's greenest road and assemble a team of inspired individuals who drive continuous improvement and incorporate sustainable practices and innovative technologies into every aspect of our work. We will create a roadmap towards a greener future, setting new standards for the construction industry, enhancing our communities and positively impacting our society. Our approach is centred around four key areas:

## Community



We will put communities at the heart of how we build by being a good neighbour. We will bring local communities closer to nature and create new opportunities for skills and jobs.

## Carbon



We will be relentless in our drive to reach the lowest possible emissions by putting carbon at the heart of every decision. We will share our learnings with our partners to drive change in how the infrastructure sector approach carbon reduction.

## Culture



We will be a purpose-driven organisation that listens and thinks differently to deliver better outcomes for our customers and communities. We do the right thing, with a trust-first approach to our relationships.

## Construction



We will deliver the build safely, on time and on budget, raising the bar on the construction sector's productivity through our use of data. We will also set new standards for efficient infrastructure delivery.

# Measuring success

We are introducing the following primary key performance indicators (KPIs) to measure our performance against our ambitions.

Focus Area: Community		
KPI	Target	Description
Our team: local people working on the project	 45%	This monitors the work opportunities we are providing for local people on the project and how we are supporting them in accessing the necessary skills and jobs. Local is defined as a 20-mile radius from the site.
Biodiversity Net Gain	 10%	The plans set out in our DCO take a holistic and ambitious approach to landscaping and habitat creation along the Lower Thames Crossing route, putting the right habitats in the right places. These plans have been assessed as providing 7% biodiversity uplift for habitats against the Department for Environment, Food and Rural Affairs area metric. Our ambition is to improve this score to 10%, while maintaining our strategy of delivering high quality habitats in the right places.
Our community: community satisfaction	 50%*	Community satisfaction with how we carry out our construction work. We will set a baseline during the first year of works and we'll measure and monitor how satisfied local communities are including measures such as dust, noise, traffic and workforce behaviour.

\*Target to be defined with Delivery Partners

Focus Area: Carbon		
KPI	Target	Description
Carbon reduction vs 2020 baseline	 70%	We have a carbon limit in our Development Consent Order (DCO), which represents a 50% reduction against the 2020 baseline. Our ambition is to get to the lowest possible carbon emissions and we are currently working with our supply chain on a plan to reduce the emissions by 70%.

Focus Area: Culture		
KPI	Target	Description
Our team: net promoter score	 50+	This key measurement assesses how likely team members are to recommend the project as a place to work.
Our team: wellbeing survey	 75%	This measure is captured through surveys to assess the overall wellbeing of our people.
Our team: diverse workplace	 14.5% disability representation 32% ethnic minority representation 50% female representation	We have an ambition to achieve gender parity on our project and ensure that all gender identities are welcomed.

Focus Area: Construction		
KPI	Target	Description
Cost productivity	 100%*	We will monitor our spend against our target budget, and annually publish the variance and efficiencies. *Target to be defined and benchmarked against industry standards.

# Our approach: enabling efficient construction



“Sustainability isn’t just about the materials we use, it is about how we build – productivity will be a key focus in every element of our construction programme. Not only will we deliver the basic on time and on budget, but we will set the standards for world-leading construction productivity and low-carbon construction.”

**Shaun Pidcock, Programme Delivery Director**

## Our ambition

We want to work with our supply chain to drive a real change in how we design and build infrastructure.

We will do this through delivering safely, on time and on budget, raising the bar on the construction sector’s productivity through use of data. We will set new standards for efficient infrastructure delivery.



TCP Eco hydrogen fuel-cell powered mobile lighting towers – image supplied by benburmanfilms.com

Last year...



Using their extensive experience in delivering major projects around the globe, our world-class delivery team has been brought on ahead of securing planning consent. This will enable us to start work on the design of the project, helping to reduce impacts on the community and impacts on the roads network.

Over the next 12 months, the Delivery Partners will be focusing on making our design more efficient, working with utility companies to reduce

the amount of works needed, identifying key solutions and how to reduce carbon through the design. They will also be reducing the impact of construction on the local community and environment and developing their key suppliers to support delivery of our lowest carbon construction plan. We will also be publishing our first productivity report, setting out what we have done and what we will be doing over the coming year to enable more efficient construction.



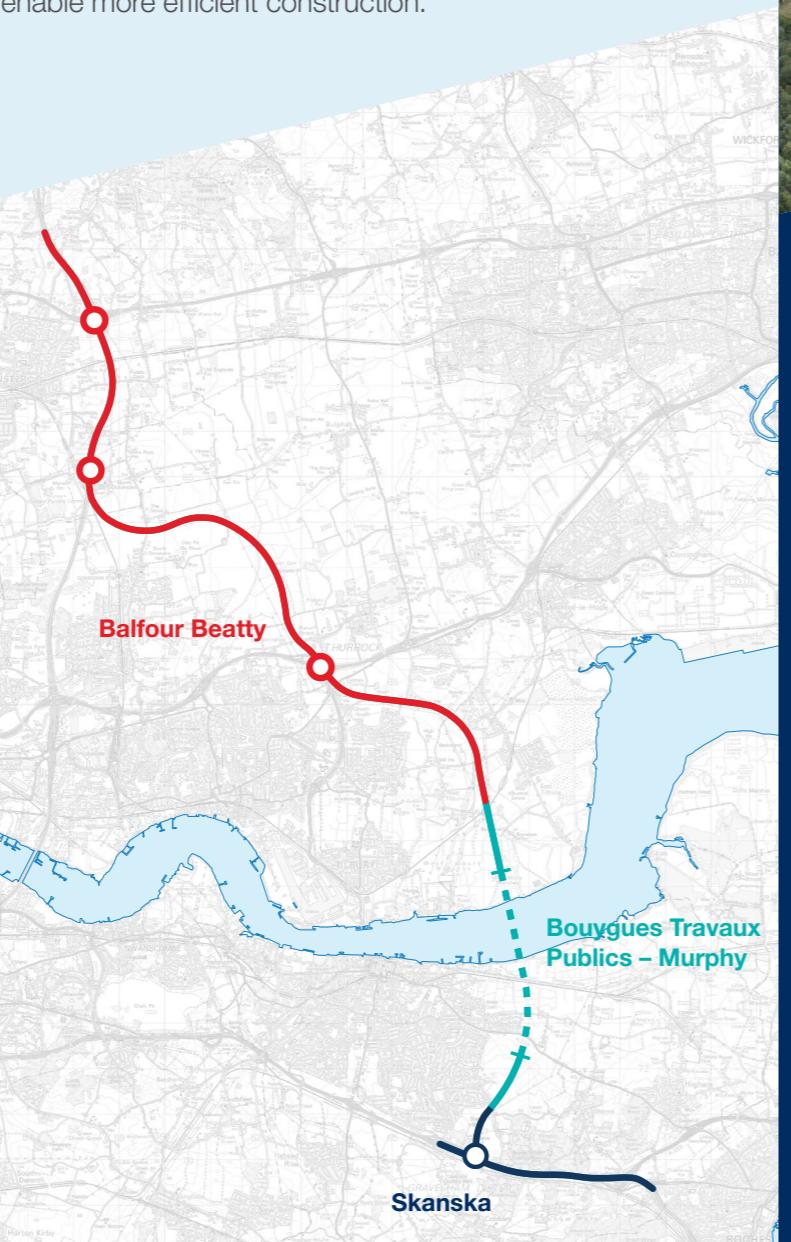
## Our delivery partners

**Balfour Beatty**



**MURPHY**  
WORLD-CLASS INFRASTRUCTURE

**SKANSKA**



## Skanska: Kent Roads

Skanska, a world-leading project development and construction company, has a long history of pushing the boundaries of sustainable construction. The first UK contractor to gain carbon management in infrastructure certification (PAS 2080), their corporate target is to be net zero carbon on all their projects by 2045.

Carbon reduction targets are validated by the Science-Based Target initiative (SBTi). This global coalition helps companies align their emissions with climate science and is working towards a 70% reduction in Scope 1 and 2\* emissions by 2030.

\*please refer to appendix C for an explanation on Scope 1, 2 and 3 emissions.



One of the **widest** green bridges in Europe





Next year...



Lower Thames Crossing A13 Junction to be delivered by Balfour Beatty

## Balfour Beatty: Roads North of the Thames

Balfour Beatty is a leading international infrastructure group and UK's largest construction and infrastructure provider. Sustainability sits at the core of Balfour Beatty's values, and their ambition is to deliver a 42% reduction (from 2020 levels) in Scope 1 and 2 carbon emissions by 2030 and to be net zero for Scope 1 and 2 carbon emissions by 2045. These targets are validated by the Science Based Targets initiative (SBTi).

Balfour Beatty will deliver around 10 miles of new road north of the Thames up to Junction 29 of the M25, as well as a number of new link roads and junctions to connect with the M25, A13 and A1089. They will also be responsible for 49 structures, including bridges and major viaducts. Balfour Beatty will utilise modular construction techniques to build some structures offsite in a controlled

factory environment, significantly reducing carbon emissions by minimising the number of lorry movements and material deliveries to and from site.

During construction, Balfour Beatty expect 40% of their work to be delivered by local businesses within 20 miles of the project and will provide innovative training programmes to upskill and inspire the next generation of talent in the UK.

**49**

structures built using modular construction techniques



## Bouygues Travaux Publics (TP) Murphy Joint Venture: Tunnels and Approaches

Our Tunnels and Approaches contract was appointed to a joint venture of Bouygues TP and Murphy. Bouygues TP is a world leading expert in complex projects involving tunnels, engineering structures and roads. Their approach to sustainability is centred around finding technical solutions to reduce the carbon intensity of its projects over their entire life cycle design including design, building methods, purchasing and energy use. They have a 2030 target to reduce their Scope 1 and 2 emissions by 30% and Scope 3 by 20% and will reduce carbon intensity of cement by 40% by 2030.

Murphy is a leading international, multi-disciplined engineering and construction company who take a holistic approach to sustainability and social responsibility. Their targets include 50% net reduction in CO<sub>2</sub> emissions by 2026, zero to landfill and investment in green plant.

The JV will design and construct the 2.6-mile twin road tunnels under the River Thames, as well as the systems inside the tunnels, buildings at the tunnel entrances and the approach roads. The 2.6-mile tunnels will be the longest in the UK and at over 16 metres wide, they will be one of the widest the World.

Bouygues TP Murphy JV have used their tunnelling and engineering experience to dramatically reduce the embodied carbon, as well as ways to refine the design to reduce disruption to the local community and leave a legacy of green jobs and skills in the region and broader supply chain.



**16.4 metres**

in diameter, it will be the **third widest** bored tunnel in the world and the **largest in Britain**.



Southern tunnel entrance to be delivered by Bouygues TP and Murphy JV

# Our approach: Reducing our carbon footprint



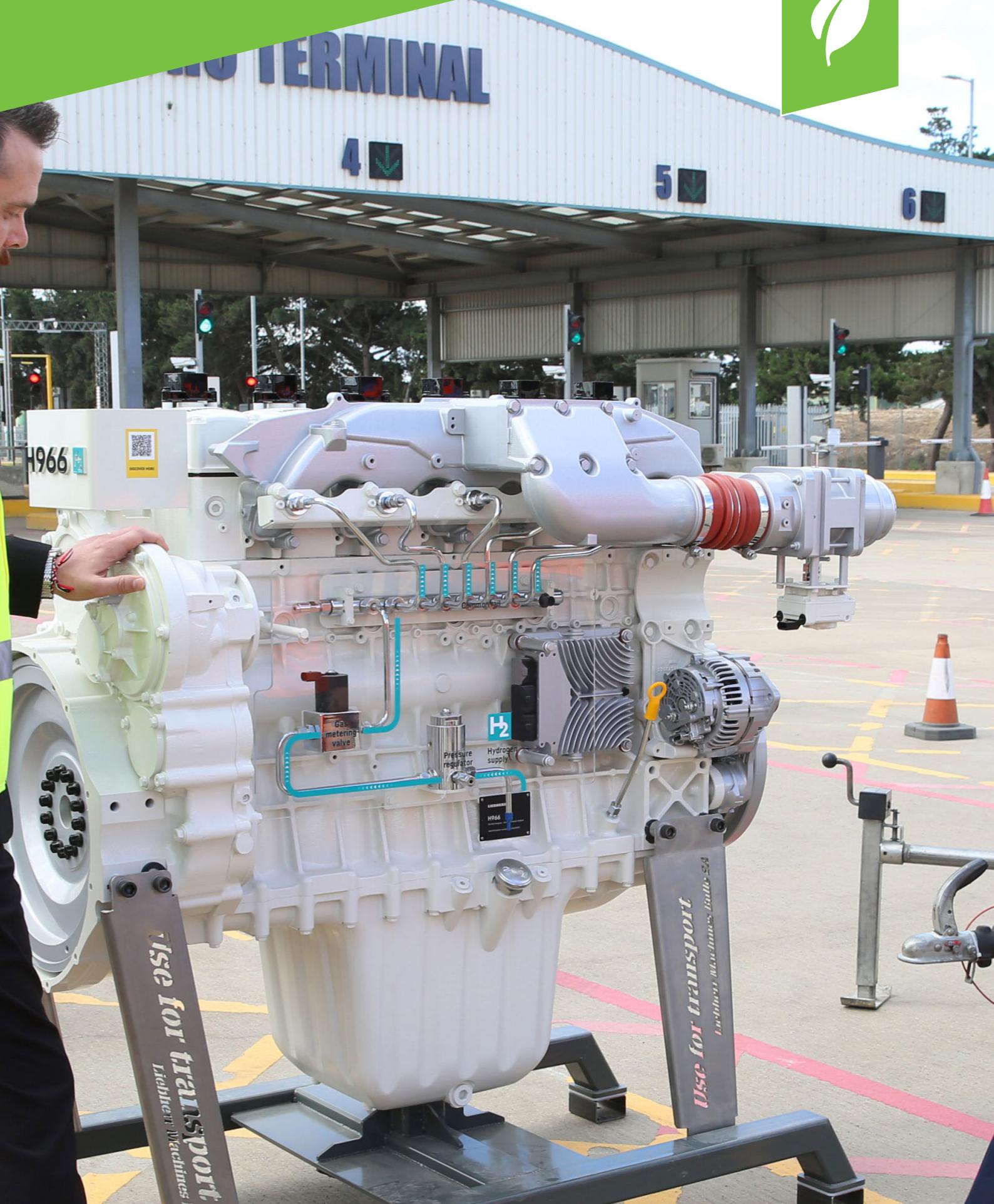
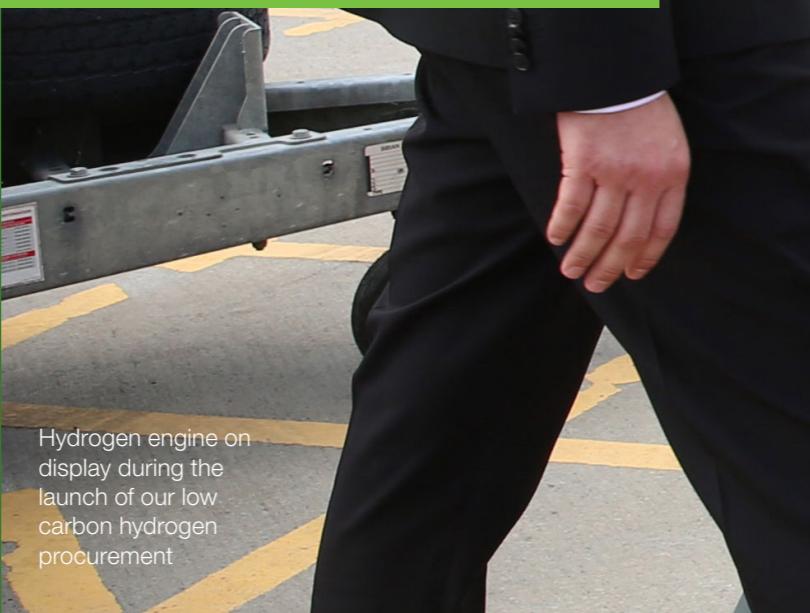
“We are on a mission to take the carbon out of construction. It is inspiring innovation right across our team and in our supply chain. Things we once thought impossible are becoming possible and we are finding a path that will lead the industry towards net zero.”

**Andrew Kidd, Director of Environmental Sustainability**

## Our ambition

The Lower Thames Crossing will be a pathfinder project for carbon-neutral construction, accelerating change across the infrastructure sector. We'll construct the new road for the lowest practical carbon emissions and continue to test low-carbon innovation and approaches. We'll ensure that we leave a legacy that enables future projects to decarbonise and will actively share our experience with others to improve the construction industry's approach to carbon.

Hydrogen engine on display during the launch of our low carbon hydrogen procurement



Last year...

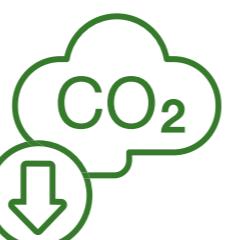


## Our supply chain

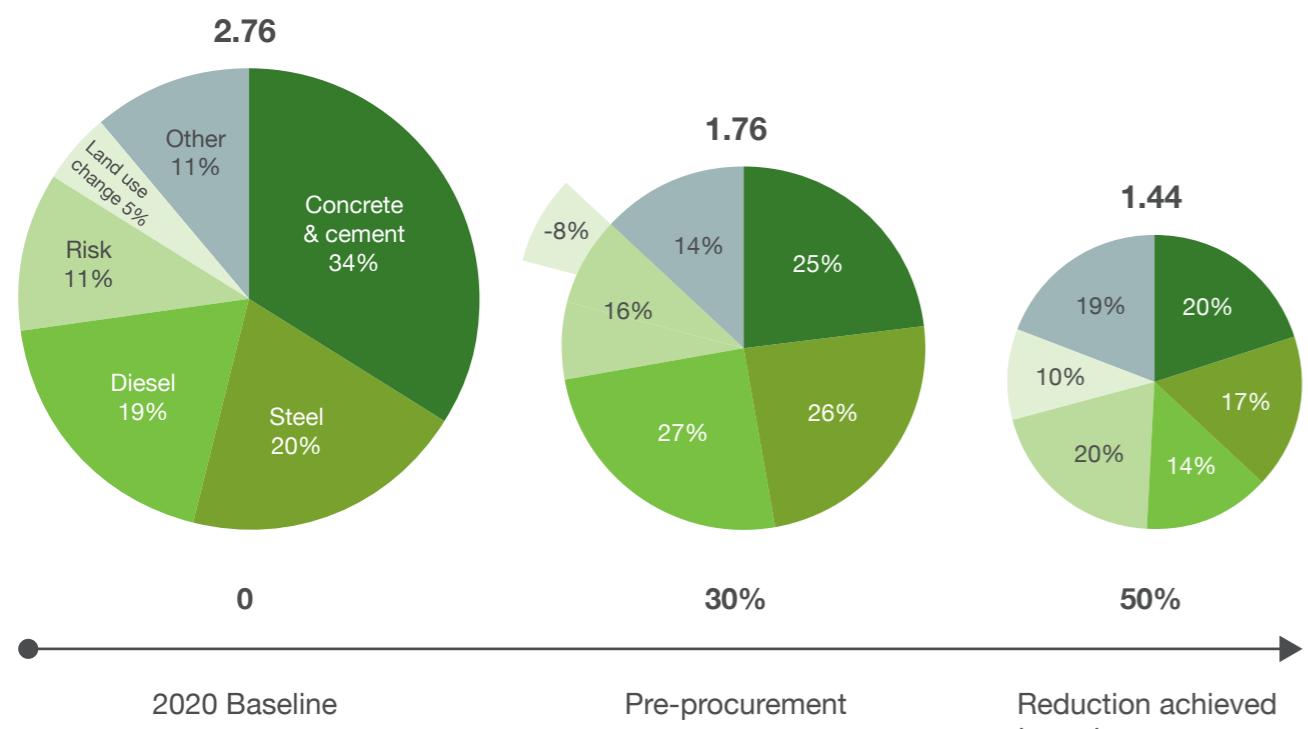
We are the first major infrastructure project in the UK to include a legally binding carbon limit in our Development Consent Order (DCO) application. Our Delivery Partners were key to this commitment. By embracing carbon reduction in their tender submissions for the project, they were able to reduce our carbon limit to around 50% at no extra cost in their bids.

Their combined pledges were used to set a legal limit on construction carbon emissions of 1.44 mtCO<sub>2</sub>e in our DCO application, generating around a 50% reduction from a baseline of 2.76 mtCO<sub>2</sub>e. All three Delivery Partners provided pathways to achieve a further combined carbon reduction of 70%.

Around **50%** reduction in carbon at no extra cost



## Our route to decarbonisation



## CASE STUDY: Delivering the carbon reduction

The following case studies set out some of the ways our Delivery Partners were able to reduce their carbon emissions.

**Balfour Beatty:** The Balfour Beatty team is proposing to use a local facility at the Port of Tilbury for concrete and aggregate supply, with a backup of a secondary facility at London Gateway. Not only will this reduce carbon emissions, but it will reduce any inconveniences for local communities by reducing the volume of deliveries by road to the scheme from suppliers.

**Skanska:** With a proven track record of providing low-carbon solutions to projects, the Skanska team has committed to not using any diesel on the Lower Thames Crossing site. It will replace it with biofuel before progressing to electric and other zero emission equipment.

**Bouygues TP Murphy JV:** Bouygues TP Murphy JV is considering a tunnelling method that uses one tunnel boring machine instead of two. This could lead to a significant reduction in emissions associated with manufacturing a second machine. It would also reduce emissions associated with the infrastructure supporting the tunnelling operation.



## Our people

In 2024, we became the first major UK infrastructure project to be awarded gold level accreditation by the Carbon Literacy Project. This recognises our team as being 'culturally Carbon Literate' and was the result of over 2,500 hours of

carbon training being delivered to our team. We took this a step further, extending our carbon literacy training to a group of 16- to 17-year-olds from New City College, London, helping to equip the next generation for a low carbon-future.



# Reducing our carbon footprint

Last year...



## Our community

Other infrastructure owners are interested in learning from and adopting our approach to reducing carbon emissions from construction, so we have worked with CO<sub>2</sub>nstructZero to develop the Five Client Carbon Commitments framework. The framework is directed at major infrastructure developers and owners with the objective of providing them with five clear commitments which target the measures which will make the biggest difference in driving carbon out of infrastructure. The framework was created following lessons learnt from the Lower

Thames Crossing and provides a simple and clear pathway for organisations to reduce their construction carbon emissions.

There is real enthusiasm and curiosity from a wide range of infrastructure companies. The Lower Thames Crossing, Anglian Water, Heathrow, Sellafield Ltd, Northumbrian Water and National Highways have already published their phase-out dates for carbon intensive steel, concrete and diesel.

## CO<sub>2</sub>nstructZero

In November 2020, the Government published its 10-point plan for a Green Industrial Revolution. It sets out a path to Net Zero by 2050.

CO<sub>2</sub>nstructZero is the construction sector's response. It sets out how the industry can collectively meet Net Zero.

## The Five Client Carbon Commitments

1

Procure for low carbon construction and provide incentives in our contracts.

2

Set phase out dates for fossil fuel use.

3

Eliminate the most carbon intensive concrete products.

4

Eliminate the most carbon intensive steel products.

5

Adopt PAS 2080, Carbon Management in Infrastructure, as a common standard.

"Our launch of CO<sub>2</sub>nstructZero in 2020 and the success we've seen so far has shown the value of collective frameworks. Creating these commitments for infrastructure delivery will allow others in our industry to pursue more sustainable outcomes in a coordinated way."

**Mark Reynolds, Group Chairman and Chief Executive of Mace and Co-Chair of the Construction Leadership Council**



## Lower Thames Crossing carbon commitments

Contract for low carbon	Diesel free sites		Concrete route map		Green steel		Know your numbers
	On site	Deliveries	Low carbon concrete	Long steel	Other steel		
A	2022	2027 Zero emissions	2030 Zero emissions				2022
B		2025 Zero fossil fuel	2025 Zero fossil fuel				2027 <0.39 tCO <sub>2</sub> e/t*
C				2025 20-40%**			2027 <0.66 tCO <sub>2</sub> e/t

\* Tonnes of carbon dioxide equivalent

\*\* The low carbon concrete scale is expressed using percentage bands of a baseline carbon intensity.

## Next year...



While we've hit around a 50% reduction in our forecast carbon emissions, we are not stopping there. We see the next 12 months as a key period for going further and making the bold steps which will deliver the change in approach to carbon that we, and the wider industry, need. We'll be focused on driving carbon out of the project's design, and crucially, really drilling into the carbon intensity of our materials.

### Our supply chain

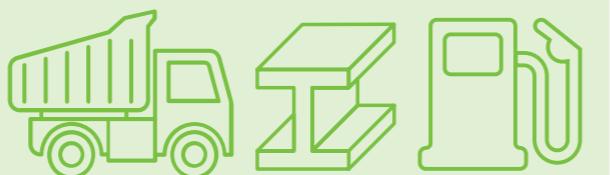
We will be embedding our new standards for reduced carbon intensity of concrete and steel used in construction, as well as developing our plans for removing fossil fuels from our construction sites from 2027. This has never been done at scale before and requires a significant effort and planning from our Delivery Partners and our wider supply chain. It also means working with manufacturers of construction equipment to considerably extend the range of zero-emissions products in the market.

Alongside this, we will be revising our forecast of carbon emissions, considering savings made as part of design development and in implementation of our new minimum standard.

We will continue to share our achievements in carbon reduction with other major infrastructure owners and use the Five Client Carbon Commitments framework to accelerate change across the sector. We are working with CO<sub>2</sub>nstructZero on another event in 2025 to bring together more infrastructure organisations and publish their phase-out dates for carbon intensive steel, concrete and diesel.

We're currently running a contest seeking innovative designs for a low-carbon footbridge, which could be used on the Lower Thames Crossing and across the wider road network. This is engaging people across the industry to push the boundaries of low-carbon construction. Over thirty entries were submitted by teams from the UK and Europe, with the winner expected to be announced Spring 2025.

### Concrete, steel and diesel



Concrete, steel and diesel are some of the highest remaining contributors to our construction carbon emissions. To have the biggest impact, we're focusing on these areas.



### CASE STUDY: Hydrogen

The estimated fuel consumption for onsite construction works is around 60 million litres of diesel. We want to replace this with biofuel, electric and hydrogen.

Hydrogen has a significant role to play in reducing our emissions and is ideally suited for construction activities where the use of electric plant is restricted by limited access to energy infrastructure. Our commitment to hydrogen is as much about supporting the de-carbonisation of onsite construction activities as it is about leaving a legacy of hydrogen skills, supply chain and infrastructure in the region. The Thames Estuary region is perfectly placed to support a growing hydrogen economy, and we want to ensure the opportunities we are creating benefit the region's industry and businesses.

Earlier this year, we organised an event with local suppliers, giving SMEs the chance to learn more about the project, our hydrogen ambitions and how their business could get involved. Fifty-three organisations attended the event, with Sizewell, the Department for Transport,



**60 million**  
litres of diesel replaced with biofuel, electric and hydrogen.



### Our people

Our Delivery Partners will roll out carbon literacy training across their teams, ensuring they reach Carbon Literacy Silver. We will also launch project-specific training

London Thames Freeport and the Department for Energy Security and Net Zero among some of the organisations who attended.

This year we plan to award a contract for the supply of low-carbon hydrogen to our construction sites. Securing a resilient supply of low-carbon hydrogen is an important step in the transition to use of hydrogen at scale in construction.

To learn how to deploy hydrogen-fuelled construction equipment safely and efficiently, we plan to run a series of hydrogen pilots with our Delivery Partners and their supply chain. Our first pilot will be in early 2025 and implemented by JCB and Gallaghers in their quarry near Maidstone, Kent. It will test the operation, efficiency and refuelling of hydrogen powered equipment in a continuous quarry operation.



Lower Thames Crossing's hydrogen meet the bidder event

on our approach to help members of the team consider their specific roles and responsibilities in delivering the lowest carbon construction for the Lower Thames Crossing.

# Our approach: Investing in communities



“We want to be a good neighbour and leave behind a lasting legacy that supports the local community for years to come. That’s why we’ll continue to support initiatives that have a positive impact and we’ll strive to create new opportunities for jobs, skills and growth.”

**Katharina Ferguson,  
Supply Chain Development Director**

## Our ambition

We want to leave a sustainable legacy that goes beyond the construction of the Lower Thames Crossing to support thriving communities with access to jobs, new skills and business growth. Overall, we want to create a better place to live and work. We will do this by putting communities at the heart of how we build, by being a good neighbour, by bringing communities closer to nature and by creating new opportunities for skills and jobs.



Community planting day at Hole Farm

Last year...



## Our supply chain

The last 12 months have been focused on working with our Delivery Partners to explore how we can create a local supply chain. We held several events to build new relationships with supply chain partners. Through these, we were able to share some of the challenges we have as a project and how the supply chain might help us overcome them.

## Skanska and our supply chain delivering together

Join Skanska and National HI to deliver a successful project and leave a positive legacy



Lower Thames Crossing supply chain event



## CASE STUDY: Working with the local supply chain

Over the last year, we have prioritised mapping out what the local supply chain looks like and developing our relationships so we can better understand businesses and how we can support them while working on the project. We're incredibly fortunate to have a rich and varied local supply chain, and some of these relationships have led to valuable collaborations over the past year:

**Syntech Biofuel** is a Kent-based renewable energy company that produces Syntech Advanced Smart Biofuel (ASB). This is made from waste vegetable oils and residues, including used cooking oil sourced from the UK, making it the most sustainable fuel available in the country.

The biofuel is being used as a replacement for diesel at Hole Farm, contributing to a reduction in greenhouse gas emissions of up to 92% per litre of fuel. Syntech Biofuel is now also liaising with Balfour Beatty to see how it can support the project during construction.



**SYNTech**  
BIOFUEL



**TCP Eco** is a national company headquartered in Essex, providing energy solutions for hire to the construction sector. It is unique in its expertise and experience in the use of equipment powered by hydrogen fuel cells, and has been an important ally in promoting the use of hydrogen in the industry. TCP Eco are currently helping us develop a hydrogen awareness training programme and advising on the practicalities of use of hydrogen in the construction sector.

**Railscape** is an Essex-based firm offering a range of services including arboriculture, building works, fencing and maintenance, primarily to the rail industry. It is providing fencing at Hole Farm and is delivering the works diesel-free. It is now also an approved supplier for Balfour Beatty.



Last year...



## Creating opportunities for new skills and jobs

We're passionate about supporting and developing a diverse and inclusive workforce. During the past year, our Delivery Partner Balfour Beatty has been working with South Essex College to break down barriers for students with special educational needs and disability. Through supported internships, we're providing work placements on the project facilitated by a job coach.

David Legg from South Essex College joined us in November 2023 as our first supported intern on the Lower Thames Crossing. Lauren Edmunds, Social Impact Advisor for Balfour Beatty, has been working closely with David and his job coach, Lisa Bennett.

When David joined us, Lisa was here every day to support his transition into the workplace. Lisa said: "In the short space of time that David has been with us, he has found his way within the business and really spread his wings. He has a real passion for

**"It allowed me to get my foot in the door and to be able to apply all the skills I've been learning throughout my college years."**

engineering and I can't think of a better opportunity for David than a placement on one of the most important infrastructure projects in the UK."

Earlier this year, David applied for an apprenticeship at Balfour Beatty. Successful with his application, he officially joined the Balfour Beatty team on the 16th September as a Business Administration apprentice.

David said: "It allowed me to get my foot in the door and to be able to apply all the skills I've been learning throughout my college years."



David Legg from South Essex College

## Apprentices

Three local apprentices from Thurrock and Basildon kickstarted their careers on the Lower Thames Crossing last September with Delivery Partner Balfour Beatty. The apprentices are completing an 18-month Level 3 Business Administration qualification with South Essex College.

Callum, our apprentice from Basildon, said: "Being here has taught me how to work efficiently within a team, how to effectively manage hard tasks and to always speak up when something may seem too difficult. The project has become almost like a home to me now, a place to feel safe, a place where you want to be and a place where I can shape my future."

**"Being here has taught me how to work efficiently within a team, how to effectively manage hard tasks and to always speak up when something may seem too difficult."**



Customer and Communications graduate, Mairead and apprentices, Callum, Luke and Aaron.



Last year...



Over the last year, we have continued to work with local stakeholders to ensure we are meeting their expectations and identifying opportunities to collaborate further. Below are some examples of this work:



## Employment and skills working group

The group meets every two months and was established to create a collaborative and unified approach to addressing regional skills, education and employment challenges. Representatives include each of the impacted local authorities, the Local Skills Improvement Plans (through Essex Chambers and Kent Invicta Chambers), the CITB, the Careers & Enterprise Company, the Delivery Partners and the wider project team.

## Major projects skills working group

This liaises with other regional major projects such as Thames Freeport, Sizewell and Ebbsfleet Development Corporation, to identify common goals and shared challenges so that we can coordinate strategic responses. The group is current compiling workforce data so regional projects can better understand where skills shortages are and where we need to invest to address them.

## Local educational roundtables

As part of delivering a skills legacy, we want to make sure that there is alignment between what the industry needs and what educational providers can offer in terms of courses and content. We have therefore engaged with local education and training providers to better understand the existing provision, identify any gaps and explore how we can offer our support.

## Youth Ambassador Forum

During construction, we will have a wide range of work experience opportunities available, including hundreds of apprenticeships and graduate places. To help us engage with the next generation of construction professionals, we've created a Youth Ambassador Forum. Composed of young people aged 16-19 studying a construction or engineering related course, our Youth Ambassador Forum will ensure that the voices of local young people across Kent, Essex and Greater London are heard.



Students from the Youth Ambassador Forum



## CASE STUDY: Cyclopark – an investment in active travel

Last year, Cyclopark, a multi-sports facility offering a range of activities for all ages and abilities, was one of 55 local initiatives awarded grants of up to £10,000 from our pilot Community Fund. Our grant has allowed Cyclopark to expand the support currently offered, including to disabled children, giving young people the opportunity to get active and learn to cycle.



"Cyclopark are extremely appreciative. As a charity, this financial support will allow us to build a new cycling skills zone that will be accessible for the whole community to enjoy and benefit from."

**Lizzy Pratt, Head of Business Support, the Cyclopark Charity Trust**

## Last year...



### Delivering local initiatives through our Community Fund

Last year, the Community Fund awarded a total of £250,000 to 55 local charities and not-for-profit community groups in partnership with the Essex and Kent Community Foundations. A number of parish councils, schools and local community groups were each awarded grants of up to £10,000.



**£250,000**

awarded to 55  
local charities

Winners of the funding have included 40 projects in Thurrock, Essex and Havering and a further 15 in Kent. Some of the funding went towards supporting a conservation programme through Friends of Dagnam Park, new camping equipment for Odyssey Explore Scout Group, new outdoor play equipment for Orsett Primary School and the creation of disabled access to the Old Orchard through Friends of Broomhill.



### Delivering benefits through our community projects

National Highways' Designated Funds programme is a national initiative that looks beyond managing the country's Strategic Road Network, to deliver lasting benefits for communities and the environment. The funds are allocated to four streams focused on making improvements that will make the biggest difference and deliver lasting benefits. So far, the Lower Thames Crossing Designated Funds team provided funding to:



**Warley Place, Brentwood:** we invested £221,000 to help the community better connect with their heritage. This donation was part of a two-year project completed in April 2024, which restored various structures on the heritage site, including the historic brickwork in its Grade II-listed walled garden, the eastern extension and boundary walls, and the conservatory.

**Dagnam Park, London Borough of Havering:** the London Borough of Havering completed heritage restoration works at Dagnam Park using £92,000 of funding provided by the Lower Thames Crossing. In collaboration with Friends of Dagnam Park, footpath improvements have been made around the Round Pond to increase visitor access to the site.

\*Please see Appendix C for more on our community projects

## CASE STUDY: Hole Farm



Hole Farm is a new 100-hectare multi-purpose woodland that we are developing now and opening to the public in 2025. Sitting alongside the M25 at the northern end of the Lower Thames Crossing route, the new woodland will include 150,000 trees, new ponds, as well as walking paths, electric vehicle charging stations, a tree nursery and a café.

Over **80,000**  
trees planted on Hole Farm



### Working with local stakeholders

Since we bought the farm on the open market in 2021, we've been working with Forestry England and the local community on our plans for the land and how we can maximise opportunities to extend the Thames Chase Community Forest. We received approval on our planning permission last year.

### What we have delivered

We have appointed Balfour Beatty to undertake the project and have commenced the detailed design work and enabling works. In partnership with Forestry England, we have also continued to deliver tree planting at Hole Farm, with an additional 75,000 trees planted between December 2023 and January 2024.

As part of delivering the works, we want Hole farm to be a test bed for what can be achieved in low-carbon construction. Use of alternative fuels require a different supply chain and changes to the processes around equipment use.

Working with Balfour Beatty, we are trialling the use of diesel free equipment and through that have had valuable lessons in the challenges and opportunities ahead of us in implementing our ambition of diesel free.

We are committed to using a local supply chain when possible and held a local supply chain event to encourage local suppliers to bid for upcoming packages of work. Further information about local suppliers supporting Lower Thames Crossing can be found in the Community section of this report.

### What we are doing next

We plan to have the woodland open to the public from 2025 and to have successfully completed all the works using only biofuel, electric and hydrogen. The remaining 75,000 trees will be planted during the 2025 planting window and Forestry England will be looking after the growth and resilience of the trees over the next three to five years until they are fully established.

Community planting day at Hole Farm



### Chalk Park and Tilbury Fields

We will be building two new landscape public parks overlooking the River Thames – Chalk Park near Gravesend, and Tilbury Fields in Thurrock.

South of the river, the proposed new Chalk Park will provide 35ha of public open space with a network of accessible pathways that will connect to sites including Shorne Woods Country Park, Ashenbank Wood and Jeskyns Community Woodland south of the A2.

North of the river, Tilbury Fields, a planned new landscaped park, would give communities panoramic views of the Thames. Extending south to the shore of the River Thames, there will be a section of Two Forts Way running through this new park.

Over the next year, we'll be carrying out detailed design work on how the parks will look, including pathways and planting, and we'll be sharing those plans with the local community.



## Next year...



With our Delivery Partners now on board, we can focus our efforts on creating a coordinated and aligned approach with our supply chain to maximise the value we can bring to communities. Next year's priorities are centred on areas we believe are important to invest in now, to have the biggest benefit for the future.

### Skills hubs

To address some of the immediate skills gaps in the industry, which could affect delivery of the Lower Thames Crossing and projects in the wider construction industry, we believe we need to create skills hubs. We launched our first pilot hub in Kent in October 2024, which means we can begin upskilling local people into key roles needed on the project. This would support regional employment and also develop the local supply chain, ensuring they are in the best position to win work when it becomes available.

The hubs will be set up as a collaborative initiative between local authorities, local education providers and the local supply chain, with some supported through existing funding from the Department for Education and Department for Work and Pensions. The purpose of the skills hubs will be to complement existing local provision and address immediate gaps in training. They will provide tailored help to those who are new to the industry and support the existing workforce into higher-skilled, higher-paid jobs.

### STEM programme

We recognise that a mega infrastructure programme like the Lower Thames Crossing has an opportunity to inspire the next generation to develop a passion for the built environment and for environmental sustainability in the context of STEM. We believe that for us to be successful in supporting a transition to a net zero economy, we need a new generation of inspired and diverse individuals from all backgrounds in the industry.

Later this year, we'll be relaunching our STEM programme to local educational providers from primary schools through to universities, with a series of engagement events such as career fairs, mock interviews and career talks.

People already working on the project will help with events, run workshops focused on developing skills and provide employability support to ensure schools are successful in meeting the Gatsby Benchmarks – a framework for school leaders, headteachers and careers advisors to assess the development of their pupils in employability skills.



### Skills Education and Employment strategy

Subject to securing DCO consent and consultation with Local Authorities, we will be issuing an updated skills, education and employment (SEE) strategy, which will include the Delivery Partners' commitments and further information on how they will deliver them. The SEE strategy will also provide additional detail on the jobs and skills needed during the construction phase of the project and how we will be addressing these over the coming year.



Next year...



## Community projects

We have committed to provide £1.89 million of funding over seven years, with seven annual contributions of £90,000 south of the Thames and £180,000 north of the Thames. For an update on the status of our previous community projects, see Appendix B.

### CASE STUDY: Vange and Fobbing marshes

We invested £600,000 for the re-wilding of a 20ha site that will improve connectivity of nearby Vange and Fobbing marshes Site of Special Scientific Interest in Essex. Planting has now started, and there will be a new grazing regime across the site. Work will enter the final phase this autumn and be complete by spring 2025, when the landowner will manage the site.

### CASE STUDY: National Trust

A total of £110,000 has been provided to the National Trust to relocate young, self-set oak trees and increase woodland cover at Cobham Woods. The initial preparatory work on the oaks has now started, and they will be re-located this autumn.

## Developing our biodiversity strategy

Next year, we will be developing our biodiversity strategy. The strategy will set out how we will implement metrics that go beyond habitat creation and provide long-term measures of ecosystem health within the project boundary. We will also be working on plans to improve our current assessment of 7% biodiversity uplift for habitats against the Department for Environment Food and Rural Affairs area metric and progress towards 10% Biodiversity Net Gain (BNG). We are also appointing a Director of Nature to lead on this work and continuing our engagement with organisations like Forestry England, Woodland Trust and other stakeholders, as well as developing plans for the long-term management of our newly created habitats.

 **1,000ha+**  
of semi-natural habitats

 **1 million**  
additional trees

 **20km+** of additional  
species-rich hedgerows

 **7** green bridges,  
the largest being over 80m wide

 **50** new wildlife  
ponds planned

 **21km+** of new watercourse



# Building an inclusive culture



“How we deliver is just as important as what we deliver. It’s therefore critical we create a culture that enables everyone to flourish and do the right thing for our communities and colleagues every single day.”

**Victoria King, Head of People Delivery**

## Our ambition

We want to create a culture driven by a bigger purpose, which attracts and grows talented, diverse and passionate individuals who feel empowered to challenge and drive change in the industry.

We will create a psychologically safe and inclusive working environment that encourages personal growth, constructive challenge and builds strong trust. We want to ensure all our partners are doing everything they can to remove blockers or challenges that can stop a more diverse talent pool from joining the industry, their company and Lower Thames Crossing.

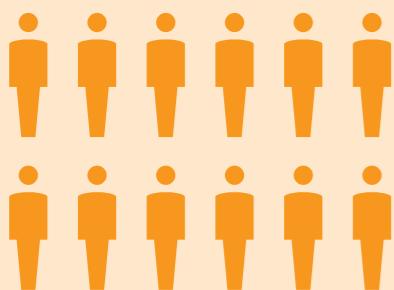
Head of People Delivery, Victoria King, with the Youth Ambassador Forum





Last year, we brought on board our Delivery Partners and started the process of creating a new integrated delivery team ready for the next phase of the project. Our challenge will be how we create alignment on purpose and behaviours in a project made up of different organisations. Our priorities over the next 12 months will be to recognise the need to align our people and our supply chain around our purpose and to set the foundations for a great culture. To better drive a culture that understands the local community, our central office has been relocated from London to Pilgrims Lane, Thurrock.

We continue to engage with the project team to obtain insight into our performance as a place to work. The team feedback has provided guidance on where we have needed to focus our efforts to improve.



### Diversity

We believe that diversity is critical if we are to successfully build the UK's greenest road. In our pursuit to deliver infrastructure more sustainably, more efficiently and with better outcomes for local communities, we need a workforce that can think differently, challenge the status quo and deliver infrastructure in a way that has never been possible before.

Attracting and retaining a diverse workforce sits at the centre of this, and over the next 12 months, we will be working with our supply chain on a plan for how we will deliver our diversity ambition including our yearly targets. We will also be setting out our strategic priorities for how we plan to deliver against those targets.

### Behavioural maturity

We will be launching an independent behavioural maturity assessment programme over the next 18 months. This will contain three cycles of assessment, which will examine how we work, our alignment to our purpose and cultural ambitions and how we are behaving and working with each other. Every six months, the results will be analysed and shared with our leadership team, who will create an action plan for the following six months, prioritising where we can make the biggest impact.

### Reverse mentoring

In collaboration with our Delivery Partners, we are launching and delivering a reverse mentoring programme involving our leadership team and our Delivery Partner project directors. Senior leaders will be mentored by younger or more junior employees, providing new insight, experience and perspectives of the workplace, which people might not otherwise be exposed to.



International women's day event organised by the Women's Network



### CASE STUDY: Lower Thames Crossing networks

We know that teams made up of people from diverse backgrounds who think in different ways are better at innovating and problem solving. However, we also know that the team has to have an inclusive culture where people are allowed to be different.

At the Lower Thames Crossing, we have LGBTQ+, women's, multicultural, parents and carers and neurodiversity networks, among others.

Recently, the Multicultural Network celebrated the United Nations' World Day for Cultural Diversity for Dialogue and Development, including food from cultures represented across the project, a guest speaker and a roundtable discussion. The guest speaker, Dr. Nike Folayan – co-founder of the Association For Black and minority ethnic Engineers

(AFBE-UK) – discussed her career journey, the purpose and work of AFBE-UK and statistics regarding the lack of representation of people from ethnic minorities in the construction and engineering industry.

Dr. Folayan's talk was followed by a panel discussion with some senior members of our partner organisations and chaired by the Multicultural Network's Exec sponsor and Programme Director – Shaun Pidcock.

The panel shared some insights into how they are making change happen across our industry and in our major programmes. This included talking about reverse mentoring, behavioural change initiatives and creating transparent and equitable recruitment and promotion processes.

# Engaging with our stakeholders



Lower Thames Crossing community information event

## Local community and business

We've engaged with hundreds of local businesses, tens of thousands of residents, over 100 community groups, local parishes, special interest groups (such as cyclists and horse rider groups) and opposition groups. We work with faith groups and communities who don't often engage in matters relating to the built environment (such as travellers and young

people) to engage with all communities affected by the Lower Thames Crossing, not just those who seek us out.

We maintain an up-to-date website and social media feeds, issue e-newsletters and videos, and hold in-person drop-in events in the local community to keep residents up to date about the project.

## Spotlight on...

Here are some examples of community groups we've worked closely with over the last year, ensuring that we've taken on board feedback and helped build a better project:

### Parish Councils

Several of the Parish Councils were heavily involved in the Lower Thames Crossing's DCO Examination. As representatives had not been involved in a DCO before, the Lower Thames Crossing team provided special briefings on how Parishes could get involved in the examination and make their voices heard.

The team also engaged closely before and throughout the examination to progress issues with the Parishes through the development of Statements of Common Ground. These documents logged all of the Parishes' contributions to the evolution of the project's progress and how concerns had been addressed and changes to the project as a result of their contributions.

### British Horse Society

Engagement with stakeholders has not stopped since the end of the Lower Thames Crossing's Examination – a case in point is the project's engagement with the British Horse Society, which still had concerns about how certain public rights of way would be treated.

While matters about public rights of way are considered resolved from a Development Consent Order perspective, there are important details still to be worked through with stakeholders. The project has therefore proactively brought members of the British Horse Society together with relevant landowners to work through important issues and concerns to balance the needs of horse riders, access rights and environmental impacts of key routes.

### Local authorities, elected representatives and statutory bodies

We engage with officers and councillors at every level at all eight local authorities directly impacted by or neighbouring the Lower Thames Crossing. Our dedicated Members of Parliament (MP) engagement specialist keeps the region's 32 MPs informed about the project. We have a team of environmental, biodiversity and heritage experts who work hand-in-hand with custodians of the local environment including the Environment Agency, Historic England and the Kent Downs National Landscape.

# Engaging with our stakeholders

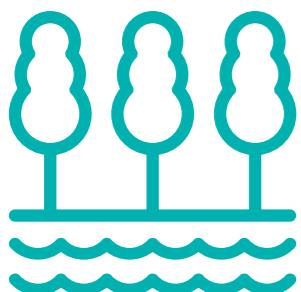


## Spotlight on...



### Forestry England

The Lower Thames Crossing team is working hand in glove with Forestry England on the delivery of one of National Highways' key community benefits – the delivery of Hole Farm – a project that will see the creation of a new community woodland, walking routes and café.



We've had close engagement with Forestry England, the Environment Agency and local authorities (Essex County Council and Brentwood Council) to ensure that:

- The mix of trees is an appropriate mix of native species that are resilient to climate change
- The design of the pathways balances the needs of everyone in the community so that the wood is accessible for all, while ensuring that they are in keeping with the natural environment
- The woodland enhances the local environment, creating a more biodiverse haven that will both mitigate and be resilient to climate change

### Local MPs

Following the 2024 General Election, there were significant changes to the political representation across the region. Of the seven constituencies that would host new LTC infrastructure or closely neighbour it, five have newly elected MPs.

The Lower Thames Crossing team has worked quickly with these new local MPs to so they are informed about the project by:

- Writing to all newly elected MPs within a day of their election to offer a briefing on the proposals
- Providing each MP with a comprehensive briefing on the project before their first three months post-election
- Offering on-site briefings for the most closely affected MPs

This has ensured that there are solid lines of communication between the project team and MPs and their offices so that they fully understand the impacts of the project and are able to efficiently field questions from their constituents.



### In the future

We will establish our Lower Thames Crossing Community Liaison Groups (CLGs) in communities likely to be most impacted by construction activities. These will comprise relevant stakeholder representatives and provide a forum for engaging with local communities and businesses, ensuring they remain informed and involved as we continue to shape our plans. We will continue to engage with these representatives on our plans, provide information on forthcoming construction activities, inform local communities about the opportunities (such as employment and training) and help identify any opportunities for further community social value.



# Governance



The Lower Thames Crossing is being delivered by National Highways, a government-owned, arm's-length company reporting to the Department for Transport (DfT). It was established under the Infrastructure Act 2015 and appointed and licensed as a strategic highways company by the Secretary of State for Transport on 1 April 2015.

The Lower Thames Crossing is the single largest project within the National Highways portfolio, and due to its scale and complexity, is its own directorate with an Executive Director reporting directly to the National Highways Chief Executive Officer.



# Assurance and advisory

At the Lower Thames Crossing, we use the industry-recognised three Lines Of Defence (LOD) model for our assurance. Dependent on the level of 'risk', a product, function or publication may go through various lines of defence – or parties – to check its quality. The lines of defence start at 1LOD, which is internal project authorisation, 2LOD is an activity undertaken by an impartial function within the Lower Thames Crossing project (or sometimes by National Highways), and 3LOD is independent external assurance.

## External assurance and advice

We have appointed several independent advisors to challenge our delivery approach and how we meet our broader legacy ambitions.

## Skills and education advisor

Our Skills, Education and Employment Strategy is critical to enabling the Lower Thames Crossing to deliver on its wider social value objectives.

We have appointed Lord Blunkett as an independent skills and education advisor to help shape the strategy and bring his experience of skills, education and government to the project. His previous roles as Chair of Heathrow Skills Taskforce and the Chair of Heathrow Sustainable Economic Growth Taskforce will be invaluable in helping us to deliver sustainable skills that are a legacy for local communities, the region and the industry.

## Carbon verification

Since 2023, UK Collaboratorium for Research on Infrastructure and Cities (UKCIRC) has been providing a team of academics from leading UK universities to review our carbon forecasts. They provide assurance on our structure and approach to forecasting, suggest opportunities for further reductions and identify risks to achieving our planned reductions. This is in addition to our annual PAS2080 verification review, which checks the alignment of our management and modelling approach to PAS2080. Annual verification of our carbon data from UKCIRC will be published annually within this report.

## The Independent Advisory Panel (IAP)

The panel provides advice on different aspects of the Lower Thames Crossing project. This includes:

- readiness reviews at different gateways or milestones
- assessment of technical specialist areas
- reviews of key risks and the actions proposed to mitigate them
- early engagement on the way the project plans to react to emerging issues, external events and challenges

The Independent Advisory Panel consists of four independent, leading industry experts:

■ **Phil Wilbraham** has spent his career in programme and project leadership, design management and civil engineering design. Specialising in major infrastructure, Phil has delivered various mega projects at Heathrow Airport.



■ **Miranda Sharp** is a past Director of Innovation at Ordnance Survey and the Chair of the National Digital Twin programme. Miranda's a strategic advisor on the societal, economic and social value of data.



■ **Rachel Skinner** is an Executive Director at leading engineering consulting firm WSP. She chairs the Infrastructure Carbon workstream of the Infrastructure Client Group and the Institution of Civil Engineers (ICE) Decarbonisation Advisory Board.



■ **Ed McCann** is a Senior Director of Expedition Engineering and immediate past President of ICE. Ed is currently working with HS2 to develop its productivity improvement strategy with a strong focus on carbon reduction.



# Contribution Towards UN Sustainable Development Goals

The Lower Thames Crossing will help contribute to the UN Sustainability Development Goals (UNSDG). The table below highlights where we believe we can have the most impact.

UNSDG description	Lower Thames Crossing contribution to development goal
<b>4 QUALITY EDUCATION</b> 	<b>Quality education; ensure inclusive and equitable quality education and promote lifelong learning opportunities.</b>  We will be delivering opportunities for local communities by creating greater access to new skills and jobs. Our Skills, Education and Employment (SEE) strategy sets out how we will deliver these in partnership with local stakeholders and our supply chain. Inclusivity is at the heart of our culture and we want to lead the way in creating a more diverse team by setting ambitious targets for ourselves and our supply chain.
<b>5 GENDER EQUALITY</b> 	<b>Gender equality; achieve gender equality and empower all women and girls for all.</b>  The construction industry still has some way to go in delivering greater gender equality. We recognise this and are focusing on changing this both within our own organisation, and across our supply chain. We will be publishing our diversity targets, which will specifically look at targets for women on the programme and women in leadership positions. This will be supported by a plan for how we will meet these.
<b>8 DECENT WORK AND ECONOMIC GROWTH</b> 	<b>Decent work and economic growth; promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.</b>  The construction of the crossing will create jobs and we are committed to ensuring that a minimum of 45% of these are filled by local people. In building the UK's greenest road, we will also create skills that can deliver future sustainable infrastructure for a net zero economy, including using new technology and hydrogen and electric equipment. The new crossing will also support economic growth by providing greater access to jobs for people living in the local communities.

UNSDG description	Lower Thames Crossing contribution to development goal
<b>9 INDUSTRY, INNOVATION AND INFRASTRUCTURE</b> 	<b>Industry, innovation and infrastructure; build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation.</b>  The new crossing is providing much-needed resilience to the existing Dartford Crossing. The lack of a reliable connection means the River Thames is a barrier, limiting growth of local and regional economies. The new crossing will improve journeys and boost the economy by providing a reliable new connection between people and jobs, businesses and customers, and the region's key ports, manufacturing centres and distribution hubs.
<b>11 SUSTAINABLE CITIES AND COMMUNITIES</b> 	<b>Sustainable cities and communities; make cities and human settlements inclusive, safe, resilient and sustainable.</b>  In building the new crossing, we will connect communities with new opportunities and the countryside to improve local quality of life. This includes access to green open space, connecting footpaths and cycleways, better routes for walking, cycling and horse riding, as well as the conservation and interpretation of local heritage assets.
<b>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</b> 	<b>Responsible consumption and production; ensure sustainable consumption and production patterns.</b>  Our ambition and plan to deliver UK's greenest road means challenging how we have delivered major construction programmes in the past. This includes building more sustainably both through eliminating and reducing high-carbon materials or using more sustainable alternatives. We will be working with our direct and wider supply chain to better understand the value chain and how it can be made more sustainable.
<b>13 CLIMATE ACTION</b> 	<b>Climate action; take urgent action to combat climate change and its impacts.</b>  Our relentless focus on carbon reduction through procurement and in our contracts is supporting tackling climate change and its impacts. Our continuous drive to reduce carbon on our programme sits at the core of how we work with our supply chain, with incentives specifically designed to enable this. In addition, we are sharing our learning with the wider industry and other infrastructure clients, so that they can benefit and together change the construction industry to build more sustainably.
<b>15 LIFE ON LAND</b> 	<b>Life on land; protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.</b>  We will deliver landscape-scale environmental enhancement and accelerate the decarbonisation of the construction industry through bigger, better-connected habitats.

# Community projects

We have invested in a variety of community initiatives over the years, including the following:

## Completed initiatives:

**Warley Place, Brentwood:** We invested £221,000 in Warley Place, Brentwood, to help the community better connect with their heritage. Completed in April 2024, this donation was part of a two-year project that looked to restore various structures, including the historic brickwork in the site's Grade II listed walled garden, the eastern extension and boundary walls and the conservatory.

**Royal Society for the Protection of Birds:** We provided £143,000 to support the Royal Society for the Protection of Birds to improve wildlife habitats at Rainham Marshes and Northward Hill Reserve. Work was completed in March 2023.

Through another £240,000 investment, we are finishing our work with the Royal Society for the Protection of Birds to support wetland habitat improvements at Shorne Marshes.

**Dagnam Park, London Borough of Havering:** The London Borough of Havering completed heritage restoration works at Dagnam Park in Havering using £92,000 of funding provided by the Lower Thames Crossing. In collaboration with Friends of Dagnam Park, footpath improvements have been made around the Round Pond to increase access for visitors to the site.

**Conservation grazing and wildlife towers:** Our investment of £350,000 to support local landowners to introduce conservation grazing and install new wildlife towers to house owls and bats in Luddesdown is almost complete. Much of the grazing infrastructure work has now been finished and several public events on wildlife have taken place with the last Butterfly for Beginners scheduled and the remaining physical works will be completed in Autumn 2024.

**Cobham Woods:** We gave West Kent Downs Countryside Trust £85,000 to improve Cobham Woods for visitors. Work undertaken across part of the 242ha site included thinning trees to let more light in and improve views, and work to improve access routes by repairing the track and clearing scrub, and supporting biodiversity by increasing foraging opportunities and creating new ponds.

**Strategic Cycle Routes feasibility studies:** We invested £50,000 of funding towards Strategic Cycle Routes feasibility studies, reviewing the proposed interventions on alignment, design and future use potential within both Essex and Kent. Work was completed in the summer of 2023.

**Shorne Woods Country Park, Gravesend, Kent:** In 2023, we provided £180,000 of funding to Kent County Council to help establish conservation grazing in a section of the wood at Shorne Woods Country Park. The funding was also used to help create new display cases with key findings from the park, new interpretation panels and a new booklet that covers the history and archaeology of the park. It has also allowed the park to engage more with local groups, schools and volunteers. In Spring, 2024 we completed work to improve habitats at the site for protected species including dormice and bats.



The cellar steps, one of the unearthed archaeological features of the old Dagnam Manor house



Warley Place, image of original house and gardens

## Ongoing projects due to be complete in 2025

**North West Kent Countryside Partnership:** In the spring of 2022, we provided £28,000 to support the North West Kent Countryside Partnership to restore woodland at Telegraph Hill, Higham. The seasonal work has been underway for the last two years, with the final phase to be completed in the Autumn/Winter and due to be completed in early 2025.

**Forestry England:** To support Forestry England and create new wildflower meadows at Jeskyns Community Woodland in Gravesham, Kent, the Lower Thames Crossing provided £113,000 of funding. The final phase of work is due to start in late 2024 and be completed by early spring 2025.

**Essex Wildlife Trust:** We provided £94,000 to support Essex Wildlife Trust in undertaking scrub clearance and wetland habitat management at Chafford Gorges Discovery Park in Thurrock. We are now on to the last part of this ongoing seasonal work, which is due to begin in autumn 2024 and be completed by early 2025.

**Essex County Council:** £350,000 has been provided to Essex County Council to introduce and extend conservation grazing within its country parks. Bat surveys have been undertaken and proposals for the tree management are now in place. The infrastructure and tree work will take place over Autumn/Winter 2024 and be completed by the end of March 2025.

**National Trust:** £110,000 has been provided to the National Trust to relocate young, self-set oak trees and increase woodland cover at Cobham Woods. The initial prep work on the oaks has now started, which will be re-located in autumn 2024. Copping of the beech has also started and expected to be completed by spring 2025.

**Early enhancements to the coastal path:** In 2021, we awarded £900,000 to improve 7km of the England coastal path from Coalhouse Fort to Stanford-le-Hope. Phase one of this project (Two Forts Way) was started in 2021 and completed in 2022. Phase two of this project is ongoing, with the section between Coalhouse Fort and Thameside Nature Park due for completion in the autumn and work from Thameside Nature Park to Fobbing Marshes expected to be complete by early 2025. Plans to complete to Stanford-le-Hope have been scaled back due to rising costs over the last four years.

**Vange and Fobbing marshes:** We invested £600,000 for the re-wilding of a 20ha site that will improve connectivity of nearby Vange and Fobbing marshes SSSI in Essex. New planting has now started, and there will be a new grazing regime across the site. Work will enter the final phase this autumn and will be complete by the spring 2025. After then, the landowner will manage the site.

**Improve habitats for water voles:** We provided £220,000 to help improve habitats for water voles across Essex. Work to monitor and record the water voles is well underway, with all equipment in place and yielding good results. Work on this phase will be complete by spring 2025.

**Thames Estuary Festival:** We're investing £225,000 to the Thames Estuary Festival to support the design and programming of the 2025 Arts Festival, the only large-scale festival that connects across the Thames Estuary.

**Kent County Council:** Completing feasibility and modelling work for a Gravesham Flood and Water Management Plan started from our £70,000 investment to Kent County Council.



Scrub and small tree clearance at Chafford Gorges Nature Discovery Park

## Preserving and improving access to heritage through our designated funds:

**Audience mapping project:** Last year, we donated £45,000 to help support the Museum of London Archaeology (MOLA) and archaeologists from the Lower Thames Crossing to organise a series of workshops with two under-represented groups in archaeology. Completed in spring 2024, the first group, English for Speakers of Other Languages (ESOL) students from Thurrock Adult Community College, visited Bata Heritage Centre in East Tilbury. As well as learning about the heritage of the area, they attended sessions to help learn and improve their English. Special Educational Needs' (SEN) learners from Link19, a care and education organisation in Gravesham, were taken to Shorne Country Park, where they explored the park's archaeology. For their third session, they were asked to write a reflection piece based on four different activities.



SEN learners listen to LTC archaeologist on during tour of Shorne Country Park

**Restoring Tithe Barn:** Earlier this year, the Lower Thames Crossing Designated Funds team enabled a grant of £650,000 for the London Borough of Havering to undertake the restoration work needed for Tithe Barn in Upminster. Approved by Havering Council in April 2024, essential re-thatching, structural repairs and electrical works has now started to give the barn a new thatched roof, repair its timbers, and restore its brickwork.



Upminster Tithe Barn, image taken from Historic England

**Pop-up heritage exhibition:** We invested £98,000 to Gravesham Borough Council to host a pop-up heritage exhibition. Planning and development work is currently underway with work expected to be completed by spring 2025.

**Heritage outreach programmes:** Delivering a wider community archaeology and heritage programme for Kent and Essex, including workshops, training, community digs, guided walks, talks and heritage site visits. These are ongoing and will conclude in spring 2025.

**Tin Tabernacle meeting room:** Through our donation of £150,000 to Cobham Parochial Parish Council, urgent restoration work on the Tin Tabernacle meeting room is now proceeding and building works will be completed in early 2025.

**Digital Hub:** Funding has been given to develop a digital hub to showcase heritage sites in close proximity to the Lower Thames Crossing development area. It uses 3D effects, photos, interactive content and mini games to enable members of the public to view and engage with archaeological features and finds. Proof of concept has been successful with design and implementation currently ongoing and expected by spring 2025.

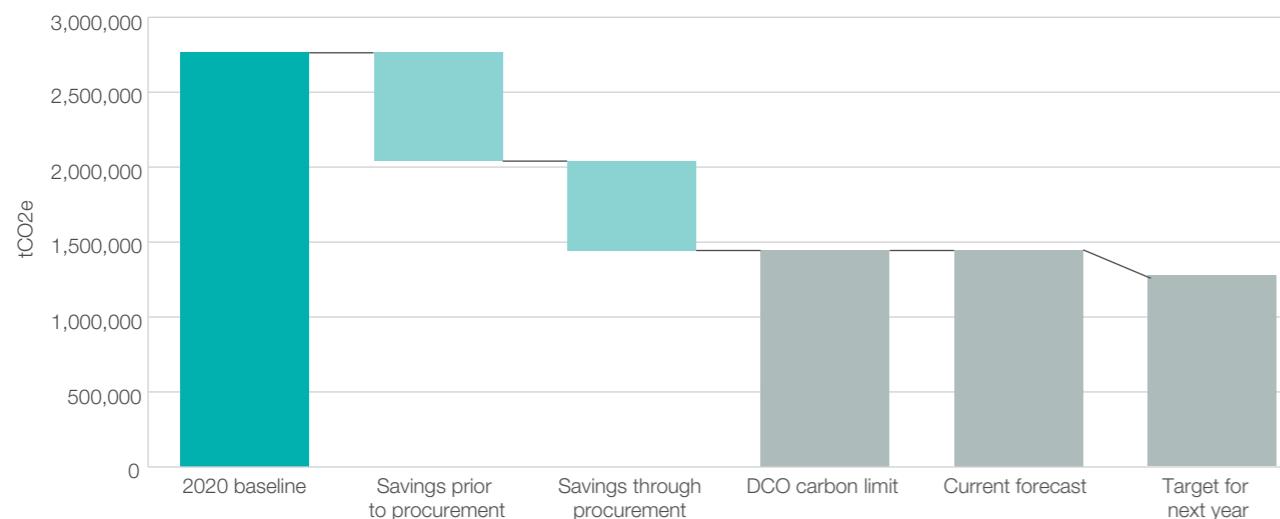


Archaeology volunteering day held at Shorne Woods Country Park

# Lower Thames Crossing's carbon emissions

Status	Construction carbon emissions (mtCO <sub>2</sub> e)
2020 baseline*	2.76
DCO carbon limit	1.44
Carbon forecast this year	1.44
Carbon forecast last year	1.76
Carbon forecast for next year	1.21

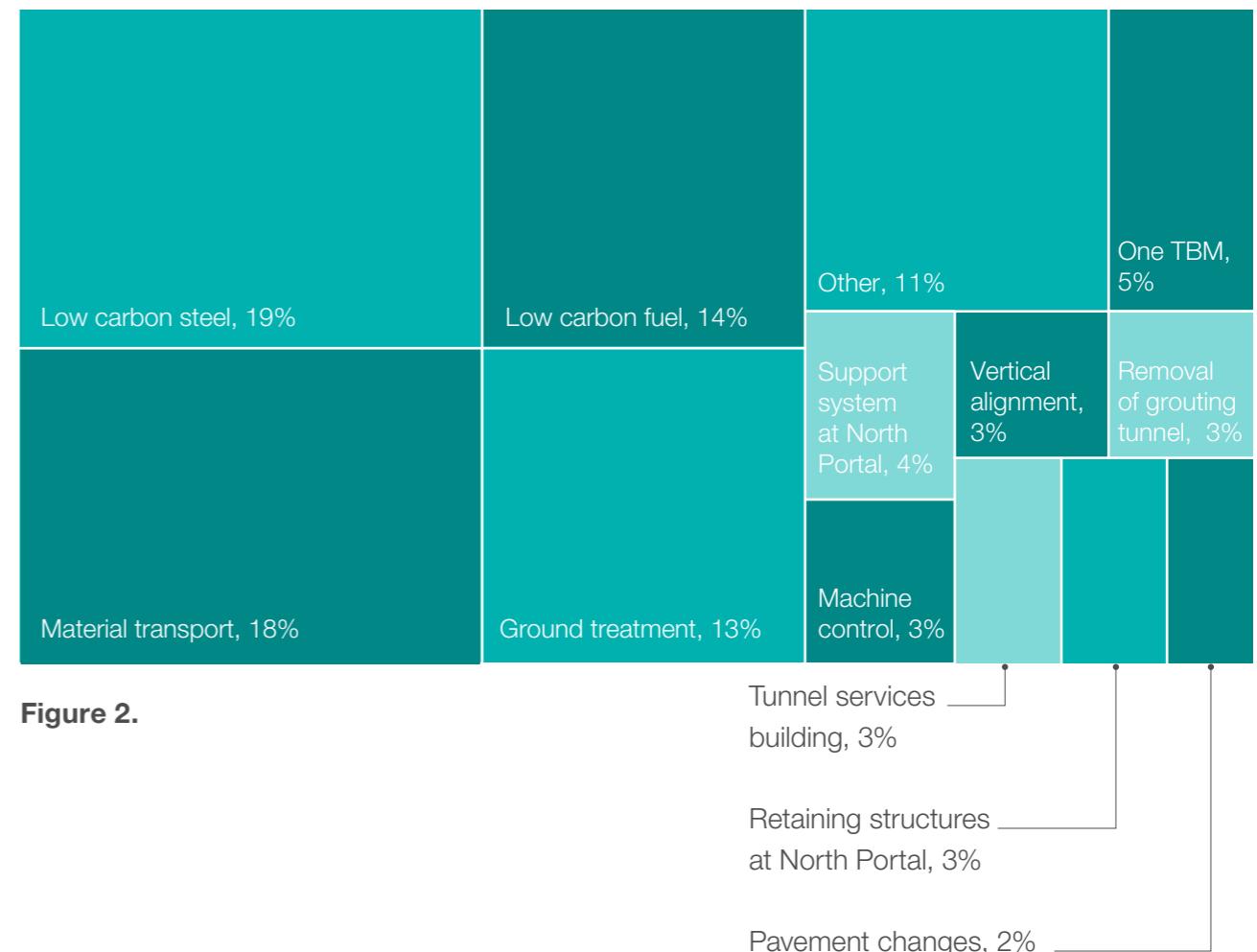
**Reduction in Lower Thames Crossing's construction carbon emissions**



**Figure 1.**

Figure 1 shows that the Lower Thames Crossing has been able to reduce its construction carbon emissions by around 50% from its 2020 baseline. This was done by saving carbon both before and during the procurement process. The first iteration of the Carbon and Energy Management Plan in our DCO application set out the savings made prior to procurement and the next section of this report sets out the savings made through procurement and the forecast we are targeting for next year. The carbon reduction achieved through the procurement process enabled us to commit to a lower DCO carbon limit of 1.44 mtCO<sub>2</sub>e.

## Carbon reductions achieved through the procurement process



**Figure 2.**

Figure 2 shows the key carbon reduction measures that contribute to the reduction in construction carbon emissions shown in figure 1. We have updated our DCO carbon limit to reflect these savings and our new limit is around 50% lower than our 2020 baseline (2.76 mtCO<sub>2</sub>e).

\*The term “2020 baseline” refers to a baseline set on a consistent basis with those used on other National Highways schemes. It provides a point of reference for comparison and measurement purposes.

## To achieve this carbon limit, our Delivery Partners have focused on:

### Designing out carbon

- **Reducing material transport:** our Delivery Partners will source more local materials and use alternative, lower-carbon modes of transport to get the materials to site. For example, for Roads North, Balfour Beatty will source its concrete from within 30km and for Tunnels, Bouygues TP Murphy JV will use river transport for key materials including concrete and steel.
- **Ground treatment:** at the northern tunnel entrance, Bouygues TP Murphy JV will use a construction approach that:
  - uses less materials
  - reduces the volume of ground treatment required so less cement needs to be mixed into the soil to create a stable base.
- A variable density Tunnel Boring Machine (TBM) design will be used to construct the two tunnels. This allows tunnelling through varying conditions without extensive ground treatment.
- **Support systems at the northern tunnel entrance:** Bouygues TP Murphy JV has redesigned the construction approach at the northern tunnel entrance by changing the shape to a caterpillar shape as opposed to a rectangle shape and by replacing some of the underground walls, known as diaphragm walls with temporary sheet piles and lighter grout curtains. Some of the diaphragm walls designed by Bouygues TP Murphy JV will be permanent structures so that additional reinforced concrete walls will not be required.
- **Machine control:** Balfour Beatty will use machine control technology to operate plant in the most effective way, reducing the amount of equipment required onsite and to enable smaller equipment to be used.
- **Vertical alignment:** Bouygues TP Murphy JV has also reduced the length of tunnelling that is required in soft alluvium by adjusting the vertical alignment slightly. This means less ground treatment is required.
- **Road surface changes:** On Kent Roads, Skanska will assess and prioritise the use of existing pavement by identifying areas that can be resurfaced only, as opposed to having a full reconstruction in some areas.

### Reducing the carbon intensity of materials

- **Low carbon steel:** our Delivery Partners will use steel reinforcement bars that have a lower-than-average carbon emissions factor. For example, the reinforcement bar in the Tunnels contract area will have an emission factor 50% below that of average UK reinforcement bar. Such a low emission factor is possible because the reinforcement bar is produced by an Electric Arc Furnace, powered by renewable electricity and uses a minimum of 98% scrap steel.
- **Low carbon fuel:** our Delivery Partners will use sustainably sourced Hydrotreated Vegetable Oil (HVO) and hybrid and electric equipment as alternatives to diesel.
- **Other low carbon materials:** our Delivery Partners will reduce carbon emissions by using lower-carbon concrete and a low-carbon grout needed to fill the gap between the tunnel lining and the soil.

### Current forecast by material

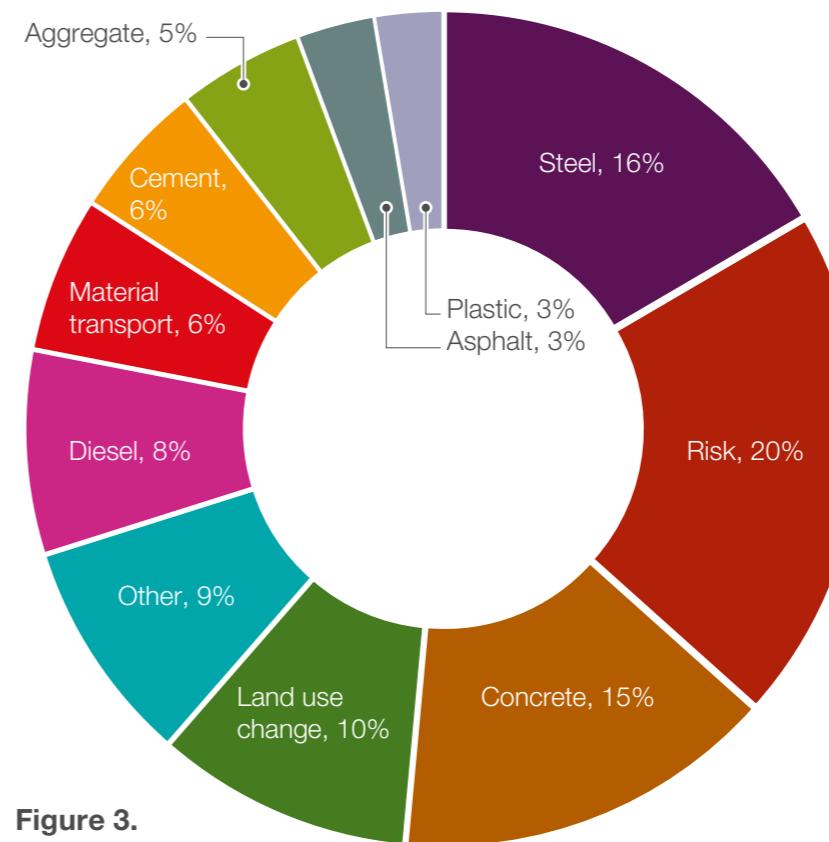
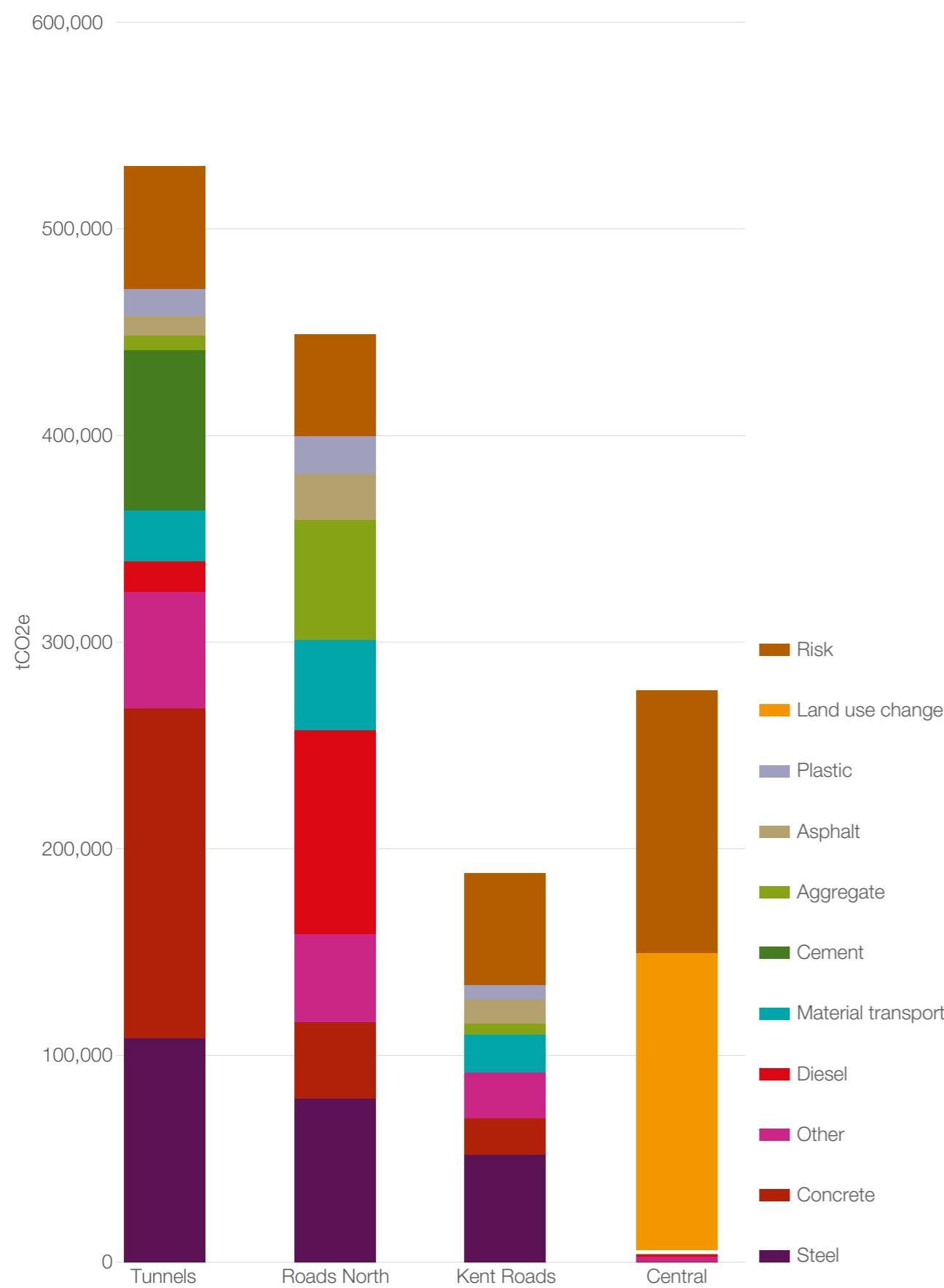


Figure 3.

Figure 3 shows how steel, carbon in risk items and cement (including the cement in concrete) account for 57% of the 1.44 mtCO<sub>2</sub>e construction emissions.

## Current forecast by contract



**Figure 4.**

The 1.44 mtCO<sub>2</sub>e carbon limit has been apportioned between the three design and build contracts and emissions that are central (i.e., not contract-specific).

- The Tunnels contract accounts for 37% of the emissions with the main emission sources being concrete, steel and cement (for ground improvement)
- The Roads North contract accounts for 31% with the main emission sources being diesel, steel and aggregate
- The central emissions account for 19% and consist mainly of land use change and risk
- The Kent Roads contract accounts for 13% and the emissions from steel are a key component of this (Figure 4).

## Forecast for next year

The current forecast presented above represents the Lower Thames Crossing's carbon limit, and we are supporting our Delivery Partners as they develop their plans to reduce emissions well below this.

In April 2024, we signed up to the Construction Leadership Council's Five Client Carbon Commitments. As part of this, we are focusing on tackling our key emission sources, and from 2025, we have committed to:

- Not using fossil fuels to power equipment at our construction sites. Diesel consumption at our construction sites currently accounts for 8% of total construction carbon emissions.
- Using concrete that is C-rated or better. Two of our three Delivery Partners have already committed to using concrete that meets this standard.
- Using long steel that is B-rated or better and 'other' steel that is C-rated or better. Achieving this standard will result in carbon savings across all three contracts.

We forecast that these actions will reduce our construction carbon emissions by 200,000 tCO<sub>2</sub>e. More details about the Five Client Carbon Commitments, including the rating scales and the organisations that have signed up, are available [here](#).

## Independent review of our carbon data

The UK Collaboratorium for Research on Infrastructures and Cities (UKCIRC)’s research consultancy services company, UKCIRC Limited, was asked to examine the Lower Thames Crossing carbon calculator to provide an independent opinion on whether it is fit for purpose; whether it correctly accounts for the likely carbon emissions of the project; and whether the proposed commitment to a maximum emissions level is a feasible limit to be delivered by the contractors, considering the project’s timeline.

### Review

To assess fitness for purpose, the review team compared the Lower Thames Crossing carbon calculator with the expected main requirements and outcomes from a whole life cycle carbon analysis as defined by “PAS 2080:2016 - Carbon Management in Infrastructure”. The quality of the analysis of each life cycle stage carbon module has been critically analysed by reviewing methodologies, data, processing and assumptions. In addition, the methodology, system boundaries, data used, applied assessments and the interpretation and reporting of the results have been checked for consistency. Assumptions that could be challenged by reference to good practice for carbon assessment have been identified and critical recommendations for the future phases of the LTC project have been proposed by the review team.

Published information on carbon intensity of technologies, processes and construction industry approaches were used to assess the accuracy of the estimated maximum emissions level.

### Summary of review findings

In our opinion:

- The Lower Thames Crossing carbon calculator is fit for purpose, and its method (including the emissions factors and calculations) represents good practice for carbon assessment.
- We consider the maximum emissions level of 1.44 mtCO<sub>2</sub>e to be within the range of good practice that accommodates uncertainties at this stage of the project relating primarily to land use allocation. The target is consistent with the supplier information and for the scale of works.

## What is Scope 1, 2 and 3?

Scope 1, 2 and 3 are categories used to classify the source of greenhouse gas (GHG) emissions.

- **Scope 1 emissions** are “direct emissions” from sources that are owned or controlled by a company or organisation such as transport from fleet vehicles and the manufacturing of materials.
- **Scope 2 emissions** are “indirect emissions” from the use of purchased energy, such as the emissions caused when generating electricity used in a building.
- **Scope 3 emissions** include all other indirect emissions linked to an organisation’s activities, such as employee business travel in transport not owned by the company.

# DCO sustainability commitments

## Carbon commitments

Taken from the Carbon and Energy Management Plan within our DCO application, the Applicant (National Highways) has listed 22 carbon commitments for the Lower Thames Crossing:

1. The Applicant will include carbon as a key criterion in the evaluation of tenders for the three design and build contracts.
2. The Applicant will require Contractors to have corporate net zero plans setting out how they will reach a net zero position that aligns with the 1.5°C reduction of the Paris Agreement (United Nations, 2015) and the UK's commitment to be net zero by 2050. The plans must include science-based targets for emissions reduction.
3. The Applicant will ensure that formal regular collaborative carbon reduction workshops are held with representatives of all Contractors present.
4. The Applicant will develop and, where appropriate, implement measures to avoid / prevent, reduce and remediate emissions arising from the construction of the Project to ensure that net construction emissions do not exceed 1.44 million mtCO<sub>2</sub>e.
5. Contractors will be required not to exceed a carbon limit which is aligned to the level set out in CBN04.
6. The Applicant will require Contractors to provide Environmental Product Declarations for the ten construction products contributing the most to carbon emissions in their contract. The Environmental Product Declarations must show that the emission factor for the product being used is better than European average.
7. The Applicant will require Contractors to procure renewable electricity throughout construction to meet any demand that is not met through onsite renewables and will provide Renewable Energy Guarantee of Origin (REGO) certificates covering the total amount of electricity consumed.
8. The Applicant will require Contractors to provide and maintain electric vehicle charging facilities, using zero carbon electricity for 30% of parking capacity in each compound, increasing this as necessary to satisfy demand.
9. The Applicant will require Contractors to use zero tailpipe emission vehicles for all staff movements within working areas and to and from public transport hubs.
10. The Applicant will require Contractors to promote the use of active transport for personnel to and from the compounds and to provide managed electric charging facilities for e-bikes at each compound, in covered cycle parking areas, to satisfy demand.
11. The Applicant will provide commercial incentives for Contractors to reduce emissions below their carbon limit.
12. The Applicant will include a contractual mechanism that allows Contractors to be paid the additional costs of implementing agreed carbon reduction technologies, together with an incentive payment to further encourage their identification and adoption.
13. The Applicant will obtain PAS 2080 certification for the Project from an independent, third-party certification body by the end of 2023 and will maintain the certification annually.
14. The Applicant will require Contractors to obtain PAS 2080 certification from an independent, third-party certification body within 52 weeks of the contract starting date and will maintain the certification annually.
15. The Applicant will require Subcontractors to obtain PAS 2080 certification within 52 weeks of appointment, unless otherwise agreed by the Applicant.
16. The Applicant will publish an annual carbon report that will include information on forecast life cycle carbon emissions, carbon reductions and progress against carbon commitments as well as key actions and targets for the following year.

17. Carbon data published by the Applicant in the annual carbon performance report will be independently reviewed prior to publication.
18. The Applicant will deliver carbon literacy training and achieve silver certification from the Carbon Literacy Project by the end of 2023.
19. The Applicant will require Contractors to develop the carbon literacy of their workforce working on the Project to Carbon Literacy Project level silver within 52 weeks of the contract starting date.
20. The Applicant will require Subcontractors to develop the carbon literacy of their workforce working on the Project to Carbon Literacy Project level silver within 52 weeks of their engagement.
21. The Applicant will require Contractors to appoint a director responsible for carbon.
22. The Applicant will publish a third iteration of this Carbon and Energy Management Plan explaining how carbon emissions will be managed and minimised during the operation and maintenance of the Project to support the Applicant's carbon policies, plans and strategies. This would include measures such as the use of low energy lights.

## Biodiversity and wider environmental sustainability

The Project has been developed to avoid or minimise significant effects on the environment. The measures adopted include landscaping, noise mitigation, green bridges, floodplain compensation, new areas of ecological habitat and two new parks.

Commitments about biodiversity and other environmental sustainability considerations have been embedded throughout the project. Within the DCO application, our Code of Construction Practice (CoCP) and Register of Environmental Actions and Commitments (REAC) sit within a suite of documents known as the control plan, which is the framework for mitigating, monitoring and controlling effects of the project. It is made up of a series of 'control documents' which present the mitigation measures identified in the application that must be implemented during design, construction and operation to reduce the adverse effects of the Project.

The CoCP and REAC are an Appendix of the Environmental Statement (ES), which is a control document. The REAC presents the good practice and essential mitigation commitments identified for each environmental topic in the in the ES. The ES itself reports the findings of our Environmental Impact Assessment (EIA), which determines the likely significant environmental effects of the construction and operation of the Project. The environmental topics reported are:

- Air quality
- Material assets and waste
- Cultural heritage
- Noise and vibration
- Landscape
- Population and human health
- Terrestrial biodiversity
- Road drainage and the water environment
- Marine biodiversity
- Geology and soils
- Climate

There will be additional topic management plans developed for environmental subjects that require further measures and controls to be implemented during the construction phase, and this will include air quality, ecology, noise and vibration, soils, contaminated land, substances hazardous to health and pollution prevention controls.

The Project's environmental commitments follow three main themes:

- 1. Embedded mitigation:** measures that form part of the engineering design, developed through the iterative design process.
- 2. Good practice:** standard approaches and actions commonly used on infrastructure development projects to avoid or reduce environmental impacts, typically applicable across the whole Project.
- 3. Essential mitigation:** any additional Project-specific measures needed to avoid or reduce potential impacts that could otherwise result in effects considered significant in the context of the EIA Regulations. Essential mitigation has been identified by environmental topic specialists and through consultation with stakeholders, taking into account the embedded and good practice mitigation.

## Community

### Skills, Education and Employment (SEE) strategy

To achieve our skills legacy, we have worked with our local stakeholders to set a series of SEE targets for the construction of the project. These targets were included in our DCO application. The SEE strategy targets, as well as its aims and objectives, are written into all Delivery Partner contracts, the specialist contracts (for example, utilities or archaeology) and their supply chain. Each will be required to produce an annual Employment and Skills Plan that aligns with their key performance indicators (KPIs) and our SEE strategy.

As part of our DCO, we've committed to some main deliverables before and during construction. These include:

1. Delivering a skills legacy by creating a higher-skilled community and changing training standards for building low-carbon infrastructure.
2. Creating new jobs by breaking down barriers to employment and providing new and inclusive opportunities.
3. Inspiring future careers through effective engagement with local students and educators.
4. Supporting business growth by providing the tools to win new work and maximise economic benefits.

To meet our ambitions, each of our Delivery Partners will contribute to, and be measured against, the minimum targets listed below:

- Training for local communities – minimum target of 350 people
- Returners to work – over 500 people
- Work placements for 470 people
- Industry skills for 500 people
- Pre-employment programmes for 650 people
- SME spend of £1 in every £3 of our construction budget
- Engaging 437 apprentices

- Education engagement 5,000 hours
- Business upskilling 1,000 businesses
- 291 graduates/trainees
- Provide 2,000 hours support to educators
- Supply chain payment within maximum of 30 days

### **Community Fund**

We have committed to provide £1.89 million of funding over 7 years, with 7 annual contributions of £90,000 south of the Thames and £180,000 north of the Thames. This is intended to help mitigate intangible and residual impacts of the Project by enhancing the quality of life of communities. The amounts will be index linked to maintain value. The allocation of spend by borough on each side is as follows:

- South of the Thames: Gravesham 75%, Medway 25%
- North of the Thames: Thurrock 75%, Havering 15%, Brentwood 10%

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