national highways

Lower Thames Crossing

Nature Plan

Our ‘greenest road’ ambition and legacy

Introduction

Our vision for nature

The Lower Thames Crossing is an infrastructure project creating connection and supporting the economy, as well as a catalyst for ecological renewal.

We will create a landscape where biodiversity is resilient and flourishing, where natural habitats are improved, and where people are reconnected with their local environment.

Our vision looks beyond mitigation to net gain, striving for a legacy of environmental enhancement that will benefit generations to come.

We will redefine infrastructure construction and become a beacon of sustainable development, demonstrating how major infrastructure can truly work in harmony with nature.

Our ‘greenest road’ ambition and legacy

The Lower Thames Crossing will be the greenest road ever built in the UK. Not only will it improve journeys and give millions of people more choice on where they live, work and spend their valuable time, it will:

- Create a bigger, better, more joined up ecosystem across the region with species rich habitats that can thrive in a changing climate.
- Connect people to the countryside and bring them closer to nature.
- Collaborate with expert partners to ensure the long-term professional management of these spaces so that they grow and flourish far into the future.

We’ll do this by :

Protecting existing habitats

Creating new and improved green spaces

Connecting landscapes and people

The Lower Thames Crossing will not only drive growth, it will pave the way for a greener, more sustainable future for infrastructure that leaves a legacy of benefits for people and nature for the long term.

Why nature matters

Nature matters, profoundly. Protecting it is not just an environmental issue, but one that affects our economy, health, and well-being.

Our natural environment, provides us with:

- **Essential life support -** the very basics for survival. Our air, the water we drink, and the food we eat all originate from healthy ecosystems. Forests and plants produce the oxygen we breathe, while rivers and wetlands supply and filter our water. Fertile soils are crucial for growing crops.
- **Economic prosperity -** a healthy natural environment underpins many sectors of the UK economy. Agriculture, tourism, even industries like pharmaceuticals and biotechnology depend on nature. The concept of "natural capital" recognises the immense economic value of these natural assets and the services they provide.
- **Physical and mental health -** spending time in nature has been proven to have significant benefits for our health. It reduces stress, anxiety, and depression, while increasing feelings of well-being. Green spaces encourage physical activity, improve concentration, and can even boost our immune systems.
- **Climate regulation -** natural habitats play a vital role in regulating the climate. Forests absorb carbon dioxide, a major greenhouse gas, helping to mitigate climate change. Wetlands and other ecosystems help to regulate water cycles and reduce the risk of flooding.
- **Intrinsic value and beauty -** beyond its practical benefits, nature has an inherent worth. The diverse landscapes and the myriad of species that call the UK home are sources of wonder, inspiration, and cultural identity.
- **Biodiversity is key -** the variety of life – biodiversity – is what makes these ecosystems resilient and functional. A diverse ecosystem is better able to adapt to changes, resist diseases, and provide the services we rely on.

Given the fundamental importance of nature, protecting it is crucial to:

- **Safeguard our future.** By protecting natural habitats and biodiversity, we ensure the long-term provision of essential resources and services for future generations.
- **Address environmental challenges** such as biodiversity loss, climate change impacts (like increased flooding and extreme weather), and pollution.
- **Conserve the unique landscapes and wildlife** of the UK. Many habitats, like ancient woodlands and wetlands, are particularly important for biodiversity and carbon storage.
- **Meet our national and international obligations** to protect biodiversity and address climate change. By taking strong action to protect nature as part of our work we will be contributing to these global efforts.
- **Enhance the quality of life of all of us.** Access to green spaces and a healthy environment significantly enhance our lives, providing opportunities for recreation, relaxation, and connection with nature.
- **Support sustainable development** ensuring that economic progress does not come at the expense of the environmentand future well-being.

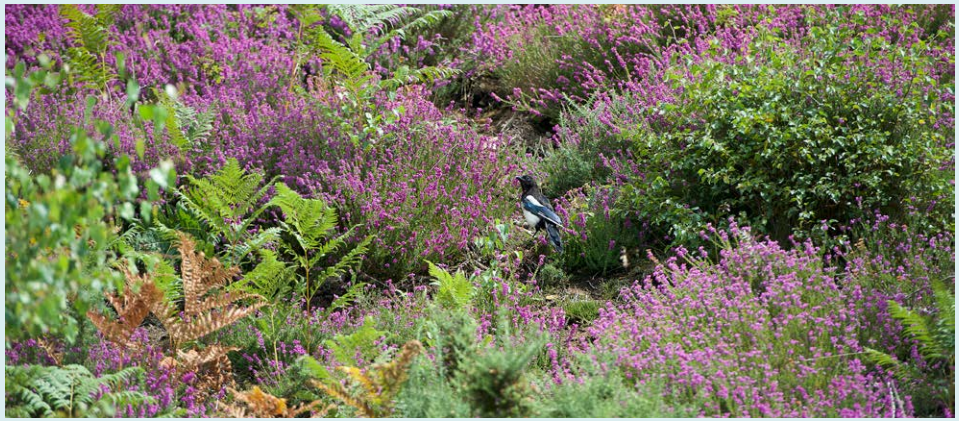
Key Policies driving the way we work

In 2024, Environment Secretary, Steve Reed, announced that Britain is on the international stage for nature and for the climate and listed as one of his key priorities a focus on speeding up nature recovery and working with people and businesses to restore and protect our natural world.

The UK government's nature and biodiversity policies are built upon a long-term vision outlined in the 25 Year Environment Plan, aiming for "cleaner air and water, plants and animals which are thriving, and a cleaner, greener country for us all." This plan, along with the Environment Act (2021), sets ambitious targets and outlines pathways to achieve them.

- **Environment Act 2021:** includes several key biodiversity targets aimed at halting the decline of nature and enhancing it. These targets are legally binding and set a framework for action in England. Targets by 2042 include restoring or creating in excess of 500,000 hectares of a range of wildlife-rich habitats, reducing the risk of species extinction and achieving an increase in overall species abundance of at least 10%.
- **Biodiversity Net Gain (BNG):** since February 2024, most new developments in England are legally required to deliver a 10% BNG. As a Nationally Significant Infrastructure Project, we are not currently mandated to deliver BNG but have voluntarily adopted the 10% target.
- **Local Nature Recovery Strategies (LNRS):** these strategies are designed to foster the conservation and recovery of natural habitats and species at the local level. Local authorities are leading the preparation of these strategies and we are working closely with them to ensure our plans align and support their LNRSs.
- **30 by 30:** this target aims to protect 30% of land and sea by 2030 and improve the quality of existing protected sites.
- **Species Recovery Programme:** helping to recover threatened species and preserve vital habitats. Examples include the Hazel Dormouse and the Bittern.
- **Tree Planting Initiatives:** The government has committed to planting millions of trees across the UK.

It's important to note that environmental policy is a constantly evolving area, with new regulations, targets, and initiatives being introduced regularly.



Key Policies driving the way we work

Lead Environmental Regulator

In addition to the above government policies, the Lower Thames Crossing is the first major UK infrastructure project to trial the innovative Lead Environmental Regulator approach.

Under this new system, which aims to provide a more streamlined and efficient process for securing environmental planning permissions and approvals, we will benefit from a single, clear point of contact for all environmental matters that are regulated by Defra. This is designed to end the delay and conflicts which can arise arising from developers dealing with multiple, often overlapping, authorities.

Natural England will assume the crucial role of the Lead Environmental Regulator for the project, working seamlessly with the Environment Agency and the Marine Management Organisation to provide joined-up advice. The trial period will be followed by a period of evaluation to inform the Lead Environmental Regulator approach for major UK infrastructure.

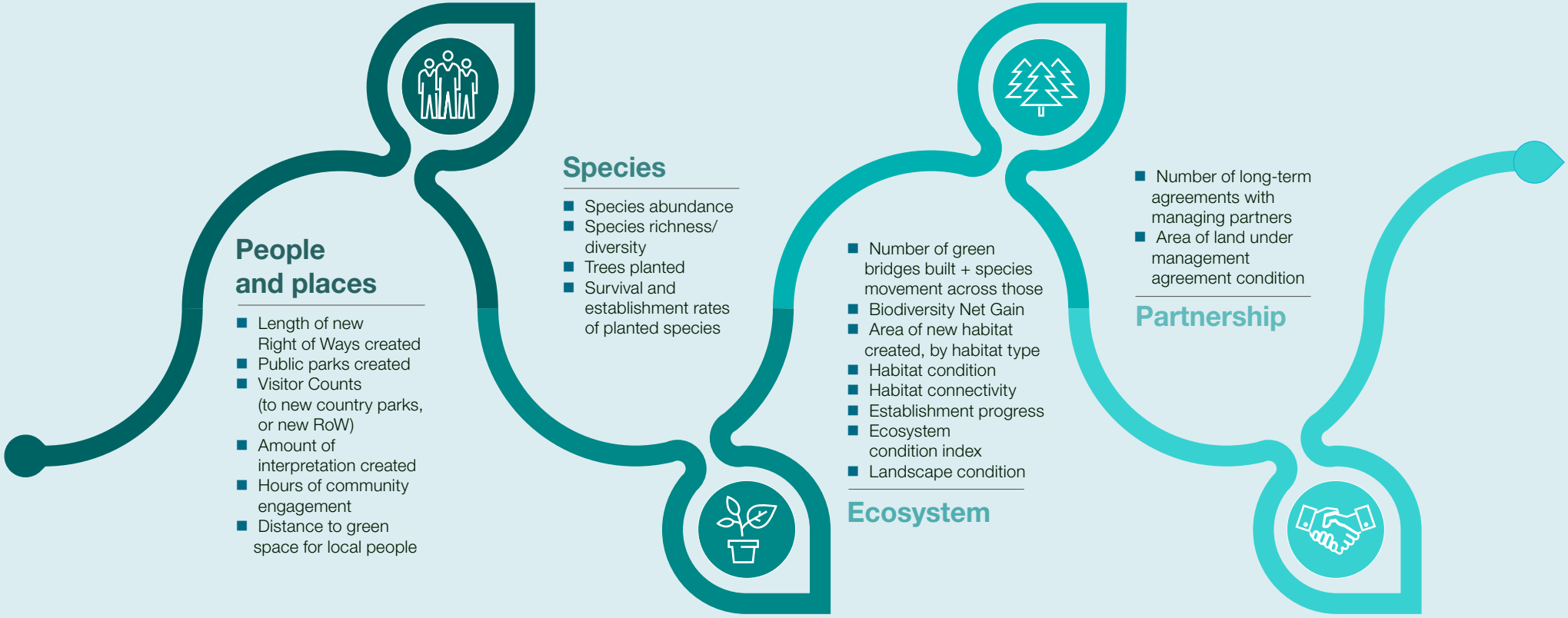
By facilitating greater collaboration and stronger oversight within Defra and its arm's-length bodies, this model aims to overcome barriers and keep the project moving at pace. One of the first areas benefiting from this approach will be the environmental mitigation area at Coalhouse Point where the Lead Environmental Regulator is providing oversight of the consenting requirements to allow works to commence without delay.

Measuring our impact

We plan to measure the impact of our work using framework of measures that will allow us to monitor the state of the natural spaces we create and tell us about the species that use them as well as the people who will connect with them.

We are already targeting a net gain in biodiversity across the programme area and as the programme develops, we will be putting in place a monitoring framework using the type of data listed below.

As soon as this is ready, we will publish it to enable you to keep a track of our progress.



Overview of Lower Thames Crossing

The Lower Thames Crossing will provide a new road crossing of the River Thames, located to the east of the existing Dartford Crossing. The new road will improve journeys, enhance connectivity between Kent and Essex, and boost economic growth in the region and nationally.

The project includes around 14.5 miles of new roads and significant upgrades to existing roads to connect to the tunnel. This involves:

- New three-lane carriageways in each direction for most of the route.
- Approximately 50 new bridges and viaducts.
- New and redesigned junctions, including with the A13 and A1089.
- We aim to make this the "greenest road ever built in the UK," with a focus on carbon-neutral construction methods, extensive planting (over a million trees), new green spaces (community woodland, public parks), and numerous pathways for walking, cycling, and horse riding.

The benefits of the new crossing include:

- **Reduced congestion:** The primary driver is to alleviate the severe congestion and delays experienced at the Dartford Crossing, which costs the UK economy an estimated £200 million annually in lost productivity. The LTC is projected to take over 13 million vehicles away from the Dartford Crossing each year.
- **Improved journey times and reliability:** The new crossing aims to provide quicker, safer, and more reliable journeys across the Thames and on connecting routes.
- **A boost to economic growth:** By improving connectivity for businesses and freight, we will stimulate economic activity and add billions to the UK economy. It's also projected to create thousands of new jobs.
- **Enhance local connectivity:** The scheme includes provisions for improved local access and connectivity on both sides of the river, including better facilities for pedestrians and cyclists.
- **Increase road capacity:** The Lower Thames Crossing will nearly double the road capacity across the Thames east of London.

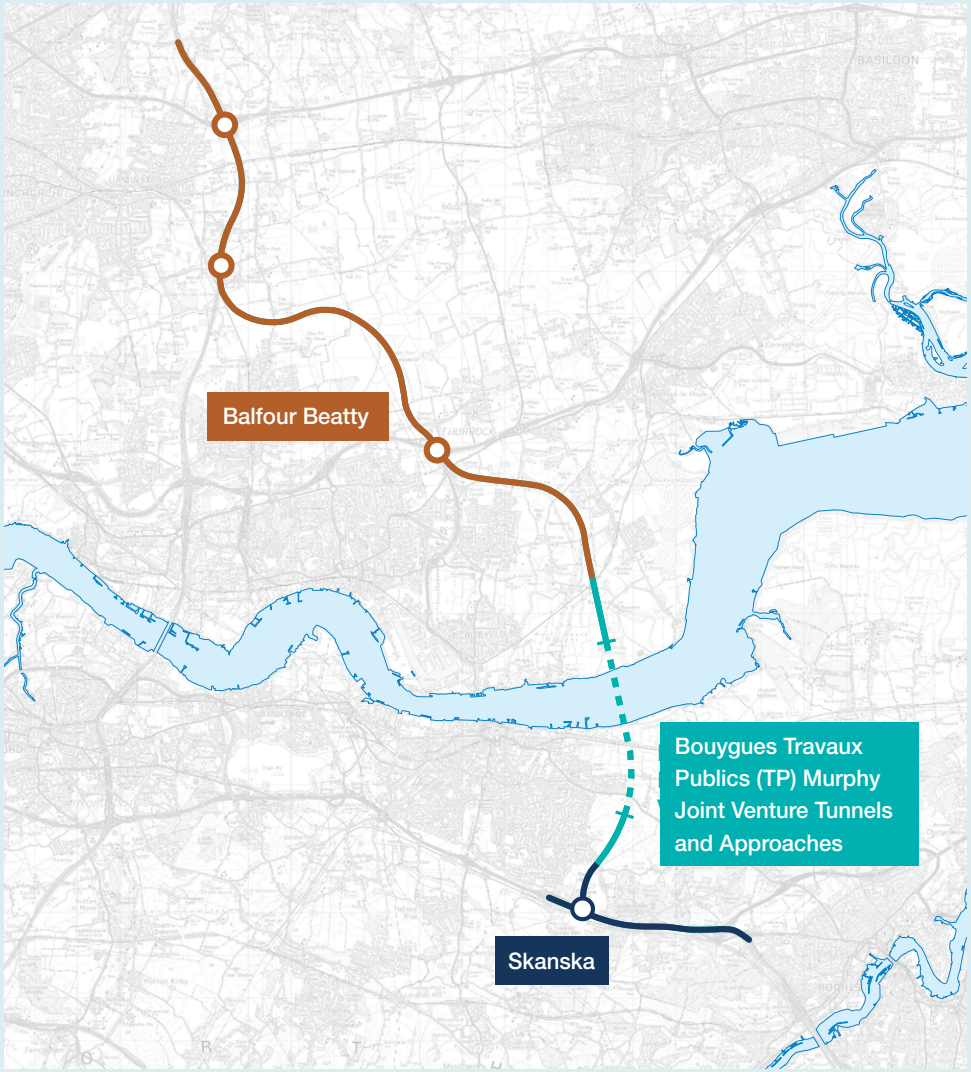
Our Delivery Partners

Using their extensive experience in delivering major projects around the globe, our world class delivery team has been working hard on the design of the project, helping to reduce impacts on the existing habitats that the new road will be passing through.

Prior to the main phase of construction, our Delivery Partners are focusing on making our design more efficient, working with utility companies to reduce the amount of works needed, reducing carbon through the design and beginning to deliver early habitat mitigation works.

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. As well as delivering 10 miles of new road north of the Thames up to Junction 29 of the M25, and a number of new link roads and junctions to connect with the M25, A13 and A1089, they will be responsible for 49 structures, including bridges and major viaducts. Alongside a range of varied habitat mitigation works north of the Thames, at Hole Farm near Brentwood, Balfour Beatty are already underway creating a multi-purpose community woodland which will provide significant ecological benefits, enhance public access to nature, and serve as a demonstration of sustainable construction practices. You can read more about our Hole Farm project on page 17 of this report.



Our Delivery Partners

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. Skanska is delivering the Kent Roads section of our programme that will connect the southern part of the A2/M2 route to the tunnel approach and includes the construction of Europe's widest green bridge, a new public park and 12 miles of new or improved pathways for walkers, cyclists and horse riders. Skanska will be looking to lead the way in new low carbon construction techniques and mitigate environmental impact, delivering green space benefits for the local people in the Gravesham area.

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. Murphy is a leading international, multi-disciplined engineering and construction company who take a holistic approach to sustainability and social responsibility.

Together they 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. Part of their remit includes the delivery of new habitat areas at each of the portals to the tunnel. To the north of the river will be Tilbury Fields and Coalhouse Point, and to the south, Chalk Park. You can read more about these sites on pages 18-20 in this report.

Delivering for Nature

Our plan for Nature has three overaching objectives:

- Protecting existing habitats
- Creating new and better habitats
- Connecting people with place

1. Protecting existing habitats

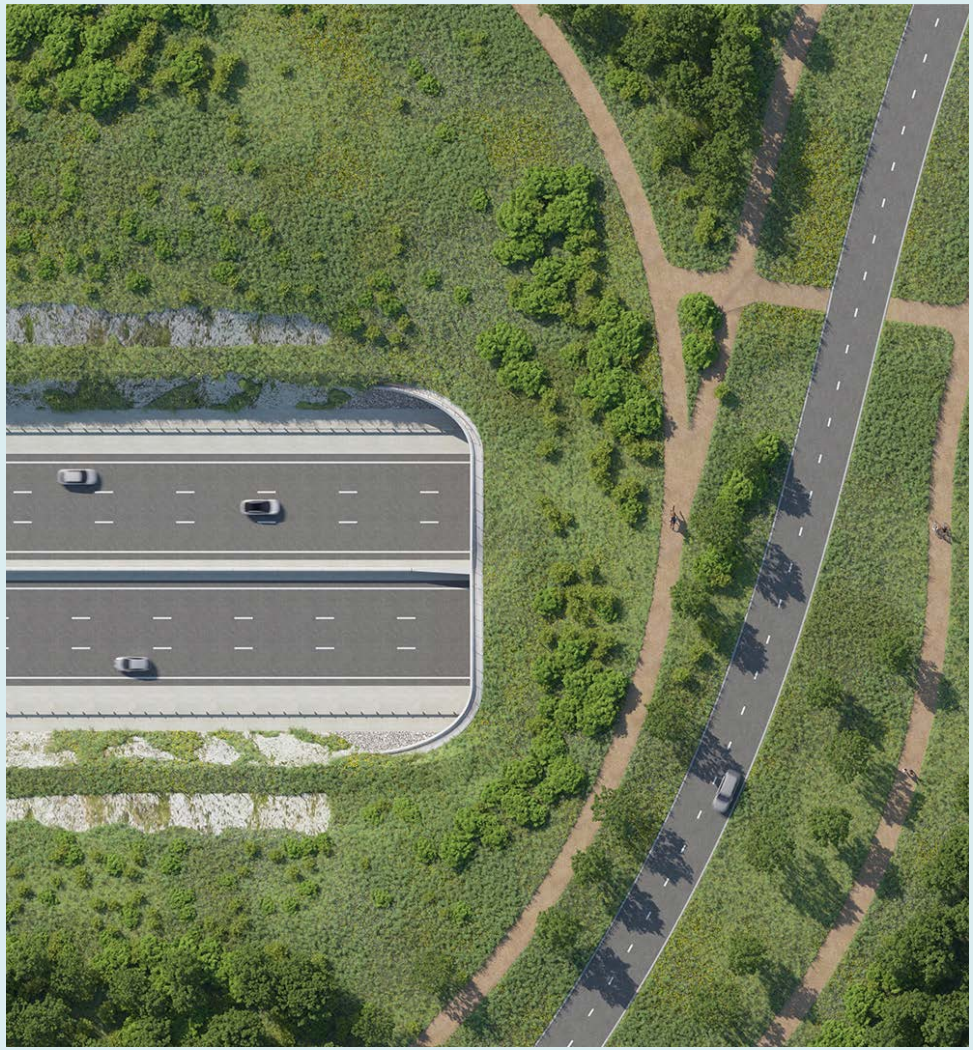
We'll reduce the effect of our works on nature by being "green" by design.

The scheme will be designed to minimise impacts, reducing the land we need to use to deliver the new road.
By championing nature, we will ensure a nature-first approach is hardwired into decision making for the design and delivery of the crossing.

Green by design

The Lower Thames Crossing has been designed in a way that reduces our impact and enhances the local environment.

- We have refined the route to avoid homes and protected areas.
- By building a tunnel rather than a bridge, and extending it, we'll avoid protected wetlands on the banks of the River Thames.
- Using cuttings and embankments, we'll blend the route into the surrounding landscape
- Seven new green bridges – including Europe's widest – will let people and wildlife move easily and safely between new and existing habitats and green spaces.
- Sensitively designed viaducts will protect flood plains.
- Almost 40 miles of new or improved pathways for walkers, cyclers and horse riders will better connect the community with these green spaces.
- The route of the crossing has been adjusted to avoid ancient woodlands where possible, with refinements to the design reducing the impact on ancient woodland by over 70%.



2. Creating new spaces

We will create new accessible green spaces and develop a network of well managed habitats that help with connectivity.

- We will create new, bigger and more joined up habitats
- We will create sites and specialised habitats to help protect species

Create new and bigger habitats

We will create over a thousand hectares of semi-natural habitats – six times more green space than road. Our plans include:

- Planting one million additional trees across Kent, Thurrock, Essex, Havering, and Brentwood to enhance woodland cover and biodiversity
- Creating a new wetland for migratory birds at Coalhouse Point
- Creating and enhancing green spaces and investing in the development of two new landscaped public parks overlooking the River Thames – Chalk Park near Gravesend and Tilbury Fields in Thurrock – to provide green spaces for people.
- Creating a 100-hectare community woodland at Hole Farm in Brentwood, which will be home to 150,000 trees and include visitor facilities.
- Creating over 12 miles of new species-rich hedgerows to aid wildlife movement and soften views, as well as new wildlife ponds and watercourses to support wetland species and improve climate resilience.
- Protecting and enhancing specific species and habitats. Examples include working with organisations like Essex Wildlife Trust to protect native species and install features like owl boxes, improving dormice habitats within Shorne Woods Country Park and providing bat hibernation sites.

Create unique and specialised habitats to help protect species

Across these sites we'll create unique and bespoke habitats to help protect wildlife, including:

- 50 new ponds
- Towers for bats
- In the Mardyke Valley, lush vegetative ditches will provide cover for water voles, and Barn owl boxes will provide sanctuary for populations away from the new road.
- In Shorne Woods, seven bat barns and hundreds of bat boxes will be built as well as enhanced habitats for dormice.
- Green bridges, culverts and fruiting plants along the route will facilitate safe passage north and south of the A2 for species like badgers and hedgehogs.
- Post-industrial areas including the Tilbury Fields site will act as havens for rare invertebrates through the creation of 46 hectares of dedicated brownfields.

We will create these sites early, and in partnership with specialist wildlife organisations, to ensure the safety and well-being of protected species in the area.

3. Connecting people and places

We know that nature is important for health and wellbeing. We want to leave a legacy for local people as well as for the wildlife and species that call the area home. We will:

- Connect habitats to the existing landscape with green corridors
- Create new pathways that help bring people closer to nature
- Connect with local and national partners for the long-term management of these sites

Connecting habitats

To create habitats that work together and are more resilient to climate change, extreme weather, and future diseases we will:

- ensure the new green spaces we create will be built to join up with existing areas, connecting through green corridors including 12 miles of hedgerows, ditches and watercourses, scrub, grassland, and woodland made up of native and species adapted to different climates.
- Improving connectivity for wildlife and people by constructing seven new “green bridges,” to allow wildlife and people to move safely between habitats and green spaces. These will be vegetated structures designed to allow wildlife to safely cross severance points.
- ensure extensive landscaping and planting, which will create new habitats and connect existing ones. This includes planting trees across the region, which will contribute to woodland connectivity over time and creating species-rich hedgerows, which act as corridors for many species. develop new wildlife ponds and watercourses, which can connect wetland habitats.
- create buffer zones around ancient woodlands to reduce edge effects.
- restore and connect grassland and wetland habitats.
- working with partners to protect native and protected species.

3. Connecting people and places

Connect people with nature

Our plans have been shaped by the most comprehensive programme of consultation ever undertaken for a road in the UK, and we'll continue to work with our neighbours to develop opportunities to access and use the spaces we create. To support this, we will:

- create almost 40 miles of new or improved pathways for walkers, cyclists, and horse riders – approximately three miles of path for every mile of road – to promote sustainable transport and access to nature.
- engage with local people to gather their views and get their involvement in the design and function of the new spaces we're creating.
- seek volunteering opportunities for local people to get hands-on with nature and be involved in the programme.
- Investigate, via our Skill Programme, the development of landscape management skills, engaging and inspiring future generations in this field of work.

Connecting with local and national partners for long term management

Our plans have been designed in partnership with experts - Forestry England, Natural England, Environment Agency, Essex Wildlife Trust, Buglife, and local experts to name but a few.

But our stakeholder engagement does not stop there. We want to work closely with partners in the conservation and wildlife sector to ensure that the habitats we create, and those already in existence, are managed for the long-term to leave a legacy for people as well as nature.

We will do this through our Landscape and Ecological Advisory Group and by building direct partnerships with relevant organisations.

Our Landscape and Ecological Management Plan (LEMP) is a crucial document that outlines how the landscapes within and surrounding the project will be developed, maintained, and managed to promote biodiversity and ecological health. The LEMP ensures that green spaces meet planning and regulatory requirements while providing long-term environmental and community benefits.

An outline version of the LEMP has been prepared in consultation with statutory environmental bodies, local authorities, community groups, and affected landowners and businesses. This forms the basis for the detailed LEMP that will now be developed.

The LEMP Advisory Group includes representatives from local planning authorities, contractors, landowners, Natural England, and relevant groups and will be set up to inform decision-making throughout the LEMP's duration. This group will advise on habitat management, review monitoring data, and help ensure the ecological integrity of the sites in the long term. The LEMP is a living document that will guide the environmental stewardship of the Lower Thames Crossing project, ensuring that landscape and ecological considerations are integrated throughout its lifecycle and in the future.

Case studies

Hole Farm, near Brentwood in Essex, is being transformed from an arable farm into a thriving, multi-purpose community woodland designed to provide significant ecological benefits, enhance public access to nature, and serve as a demonstration of sustainable construction practices linked to a major infrastructure project.

The 100-hectare community woodland will be the largest in the east of England, creating a mosaic of habitats, including woodland with rides and glades, wildflower meadows, and wet woodland areas, to support a wide range of wildlife from mammals and invertebrates to birds and fungi.

A key commitment for the Hole Farm project, is to be entirely diesel-free during construction. This involves using hydrogen, electric, biofuel, solar, and wind power for machinery and equipment, making it a model for low-carbon construction.

Hole Farm is being delivered in partnership with Forestry England, who will professionally manage the woodland in perpetuity, ensuring its long-term health and benefits for wildlife, people, and the climate.

We want this to be an inspiring place for people to visit and learn about nature, with future plans for interpretation strategies to increase awareness of the value of woodlands.

Key statistics:

- Over 150,000 trees have been planted, including native species such as black poplar, oak, hazel, and hornbeam. The species mix has been carefully chosen in consultation with Forest Research to suit the site's geology, soil, and climate, ensuring a healthy broadleaf woodland.
- Three new ponds are attracting local wildlife like geese. These contribute to new wetland habitats.
- A network of both surfaced and unsurfaced paths is being constructed, including a fully accessible loop designed for people of all abilities, to encourage walking, cycling, and exploration of the woodland.

Coalhouse Point, adjacent to the western boundary of Coalhouse Fort in Thurrock and not far from the northern entrance to the tunnel, will be the site of a new wetland ecosystem.

Here we will be creating a significant wetland area over 80 acres in size. To do so will require the excavation of “scrapes” (shallow depressions) and interconnecting channels within the low-lying, relatively flat area. These are designed to hold controlled water levels, creating diverse a wetland habitat.

A crucial element of the wetland is a new self-regulating water inlet structure through the low-level tidal River Thames flood defence embankment. This structure allows for a controlled supply of river water into the wetland area when needed, ensuring the wetland remains hydrated.

The ambition is that the wetland will become a home for estuarine loving species, particularly birds and invertebrates. Enhanced public access to this natural and historic environment is also planned, connecting people with nature along the foreshore.

Case studies

Chalk Park is one of the major public parks being created as part of the Lower Thames Crossing. Located near Gravesend in Kent, it will be adjacent to the southern tunnel entrance.

The work at Chalk Park will provide a landscaped, public green space making use of the excavated chalk material from the road cutting to the south of the tunnel.

Offering views over the Thames estuary, this valuable recreational area will give local people access to a chalk grassland habitat whilst providing separation between the new tunnel entrance and Gravesend, helping to blend the infrastructure into the surrounding landscape.

New footpaths and cycle paths will link to the wider surrounding network of existing and improved routes making it easier for people to experience the area and use it in their daily lives.

By reusing excavated chalk material from the road cutting, the project significantly reduces the need for off-site disposal, thereby minimising environmental impact and transportation logistics.

Ecologically, the establishment of species-rich chalk grassland, a habitat native to chalky soils, will supports a diverse array of wildflowers and grasses. Planting will prioritise native species, appropriate to the local context, to support wildlife connectivity and ensure the long-term ecological health of the park.

Case studies

Like Chalk Palk, Tilbury Fields is another of the major new public parks being created as part of the project, located on in Thurrock, Essex.

Similar to Chalk Park, Tilbury Fields is a significant component our environmental and community legacy, aiming to provide extensive green space, enhance biodiversity, and offer recreational opportunities for local residents. The new park will include a recreational hub and its creation is a direct response to the need for more public green spaces in the area, contributing to community health and well-being.

By reusing spoil from the tunnel, a varied topography will be created including mounds which will offer elevated viewpoints over the River Thames. The park will include a mosaic of habitats including species-rich grasslands, wetlands, and areas of new tree and shrub planting. This diverse planting aims to support local wildlife and enhance ecological resilience. This design for Tilbury Fields aims to create a larger, more coherent ecological network, linking to existing habitats such as Mucking Flats and Marshes and Thameside Nature Reserve. Emphasis will be placed on using native plant species in all landscaping and habitat creation to ensure ecological appropriateness and support local fauna.

The space will feature a network of accessible footpaths and cycle paths, designed to encourage active travel and provide easy access for people of all abilities. These paths provide improved connections to nearby heritage sites, such as Coalhouse Fort and East Tilbury Battery, further enhancing recreational and educational opportunities.

Vehicle emissions, particularly from exhaust fumes, release nitrogen oxides into the atmosphere. This atmospheric nitrogen can then "deposit" onto land and water, a process known as nitrogen deposition.

To help manage and reduce the effects of this we will be creating or enhancing habitats specifically designed to buffer the effects of excess nitrogen.

We have identified several parcels of land, in strategic locations near the proposed route and within areas sensitive to nitrogen deposition. These sites, where tree and shrub planting will occur, have been chosen to be in close proximity to, or to help link with, existing ancient woodlands, Sites of Special Scientific Interest (SSSIs), and other protected habitats.

Once established, these sites will require long-term management to ensure they develop and maintain their intended ecological function. This includes ongoing planting, invasive species control, and appropriate land management techniques. Regular monitoring of nitrogen levels in the air and soil, as well as vegetation surveys, will be crucial to assess their effectiveness.

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