Case Study 4

Lower Thames Crossing

Landscape Institute

SITE: Lower Thames Crossing

SIZE: 23km

LOCATION: Essex, Kent, Thurrock

DATE: 2026

CLIENT: National Highways

DESIGN TEAM: Fereday Pollard

Project Description

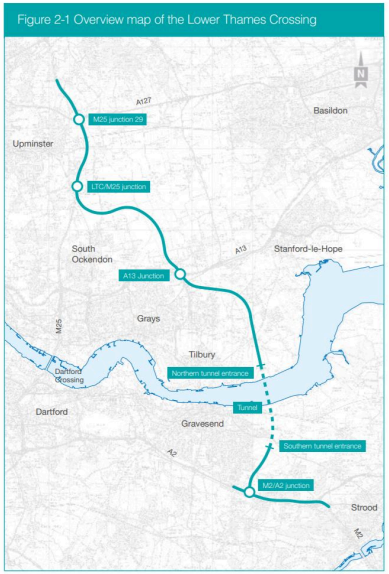
The Lower Thames Crossing is a proposed new section of road and tunnel beneath the River Thames that will connect Kent, Thurrock, Essex and Havering. The aim is to ease congestion across the south-east and boost economic growth through improved connections. The project includes extensive environmental improvements across the region, both on-site, along the roadsides, and offsite, as part of a substantial compensatory package.

Approach to Low Carbon

This is the first infrastructure project to put a legally binding limit on carbon emissions due to construction – setting it at 1.8 Mtonnes CO2e in the Development Consent Order (DCO) submission. As a designated Pathfinder project, procurement processes have been used to significantly reduce embedded carbon emissions and achieve the global carbon management standard, PAS 2080.

Links

Bar raised with 70% carbon target as industry responds to net zero challenge - National Highways



THINK LIFECYCLE

- Almost a third of all sands, gravels and other aggregates to be used in the construction of the new crossing will come from recycled or secondary sources.
- Soil, chalk and other rubble removed from the ground will be used to create cuttings and new public open spaces.
- Existing vegetation removed will be turned into mulch and deposited on the ecological mitigation sites to ensure nutrients are returned to the soils.
- The project contributes significantly to a regional scale legacy landscape.

PROTECT CARBON STORES

- Protection, enhancement and creation of woodlands, grasslands, scrublands and wetlands to contribute to the regional scale South Essex Estuary Park.
- Although 7 Ha of Ancient Woodland will be lost, this is 70% less than originally intended, with commitment to further reduce losses as detailed plans are developed.
- Compensatory planting means that three time as many trees will be planted as lost, with 1 million trees and 20km of hedgerows to be planted in total.

DESIGN RESPONSIVELY

- 22 new ponds will be created to minimise flood risks associated with the road construction and to enhance biodiversity.
- For every mile of road being built, almost 3 miles of path for pedestrians, cyclists and horse riders are being provided to encourage active travel and create better links for local communities.

LESS HARD, MORE SOFT

- Environmental enhancements include over 80 Ha of compensatory planting and, in total, 768 Ha of improved semi-natural habitat.
- Green bridges are being built along the road, to connect existing and proposed habitats at critical points.

SPECIFY LOW CARBON

- Low-carbon hydrogen will displace diesel used in construction equipment on-site and electricity will be used from renewable sources.
- Modular construction techniques will enable structures to be built offsite, minimising the number of lorry movements and reducing carbon emissions.
- Alternatives to carbon intensive materials, such as concrete and steel will be used where appropriate.