

# HS2

## Buckinghamshire Council

Transport, Environment and Climate Change Select Committee

30 March 2023

# Constructing HS2 in Buckinghamshire



Responsible for the delivery of:

- The Colne Valley Viaduct and the Western Valley Slopes
- HS2's Chiltern Tunnel
- Five shafts along the route of the tunnel
- The north portal of the tunnel, located near Great Missenden

Responsible for the delivery of:

- HS2 between Great Missenden and Turweston in Buckinghamshire
- A number of key design features inc Wendover Green Tunnel, Small Dean / Wendover Dean Viaducts
- The interface with East West Rail and the HS2 Infrastructure Maintenance Depot
- Stoke Mandeville Relief Road



# HS2

## Works update

David Emms

Project Client, HS2

# Align Works Update



# Align Works Update



# EKFB Works Update

- Internal site access road almost complete through Buckinghamshire
- All eight main compounds established
- Utility diversions underway
- 16M m<sup>3</sup> of excavation completed to date



**Bulk Earthworks**



**Permanent Bridges**



**Temporary Bridges**



**Buried Culverts**

# EKFB works in 2023

- Handover of track to East West Rail through Calvert
- Handover of Chiltern Tunnel North Portal site to Align
- Earthworks season recommences in March 2023 with 12M m<sup>3</sup> excavation planned this year
- Upgrade of Princes Risborough to Aylesbury railway line



**Continuation of Earthworks**



**Road Diversions**



**Viaduct Construction**

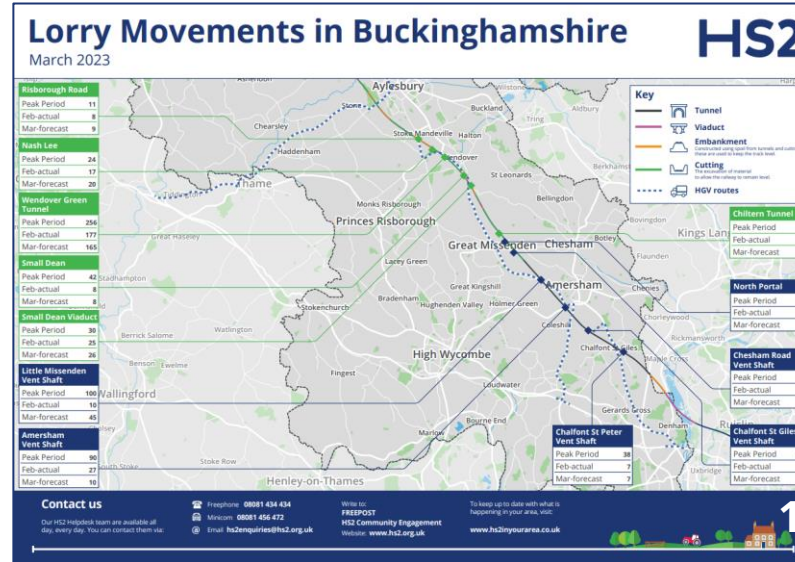


**Bridge Construction**

# Engagement

Communities & Localism Select Committee held on 17 January.

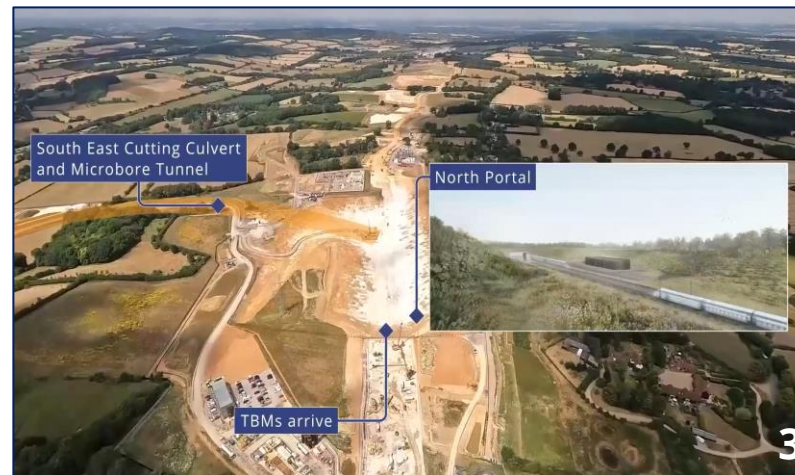
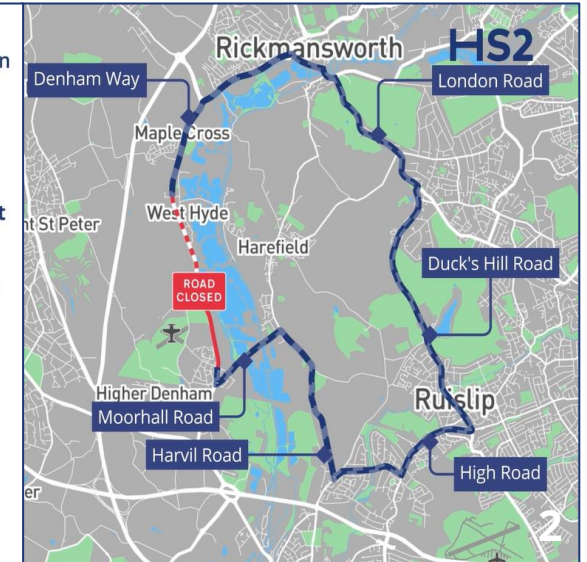
1. Monthly update on lorry movements within Bucks
2. Video mapping of works with impact on road network
3. Annotated aerial footage used to bring impacts to life
4. Mobile Visitor Centre launched with multiple events taking place each month



The A412 will be closed in both directions between West Hyde and Denham every night from 10pm to 6am.

These works are due to take place from 19 August until 25 October 2022.

A temporary diversion will be in place when the road is closed.





# HS2

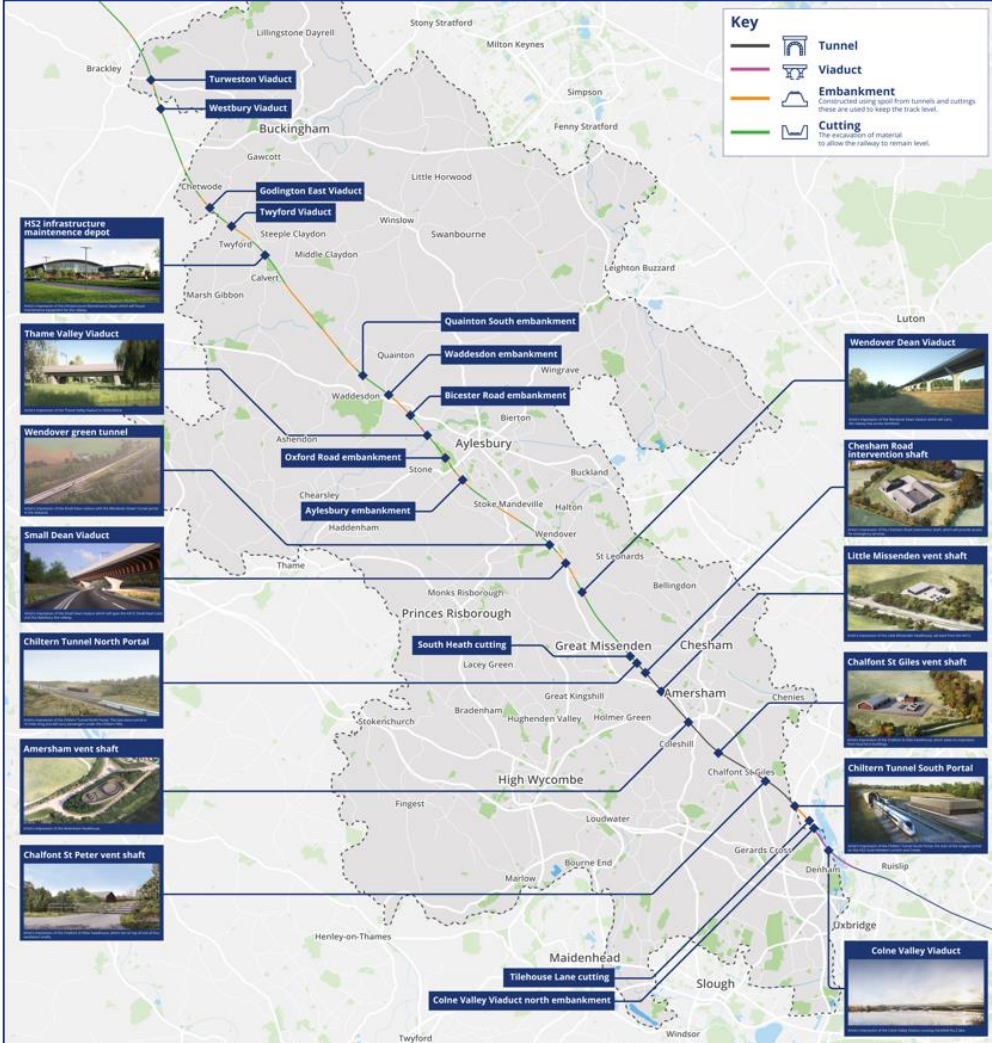
## Roads

Aaron Heer

Traffic Manager, HS2

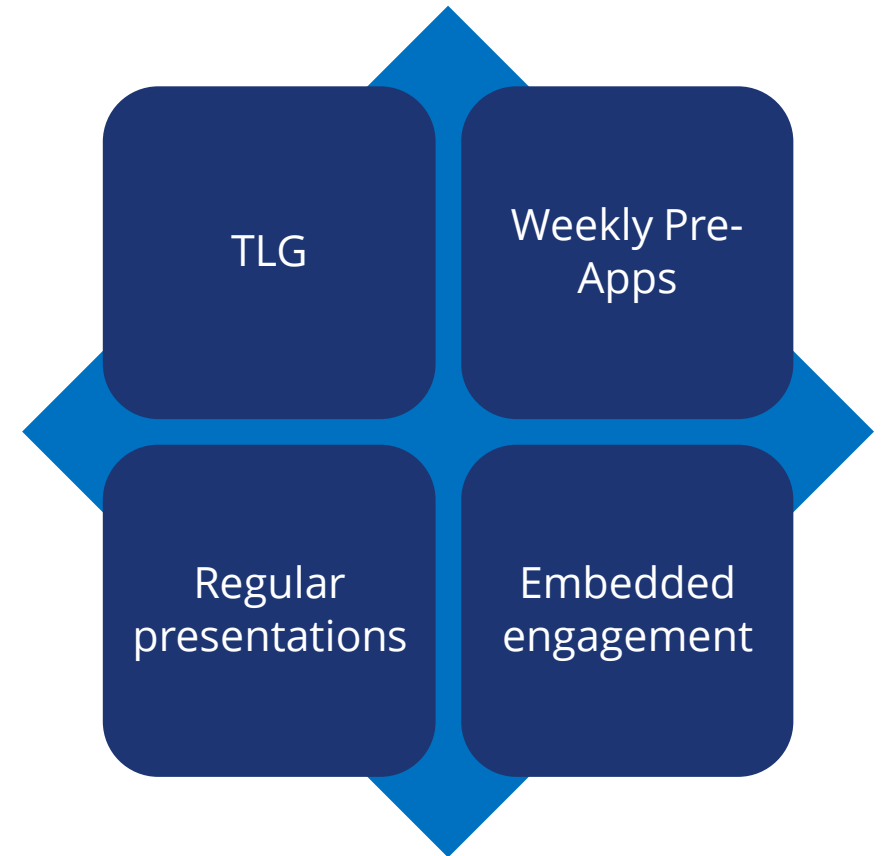
# Context - HS2 in Bucks

- 206 live and planned consents on the Buckinghamshire network
- Since our consents process moved to Street Manager (Q4 2020), 765 traffic consents have been utilised and closed out and 583 forward plan notices have been raised



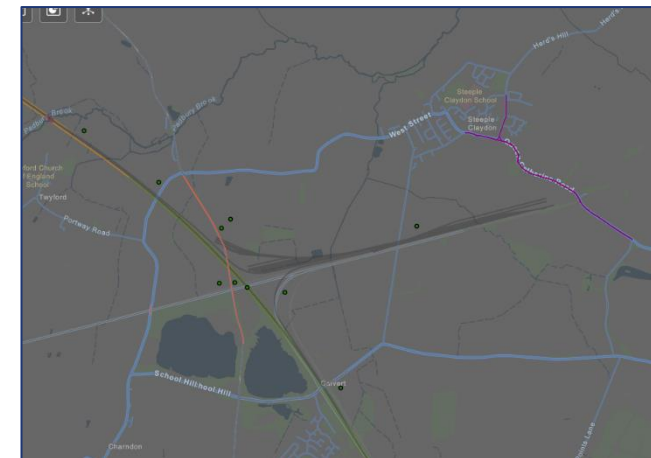
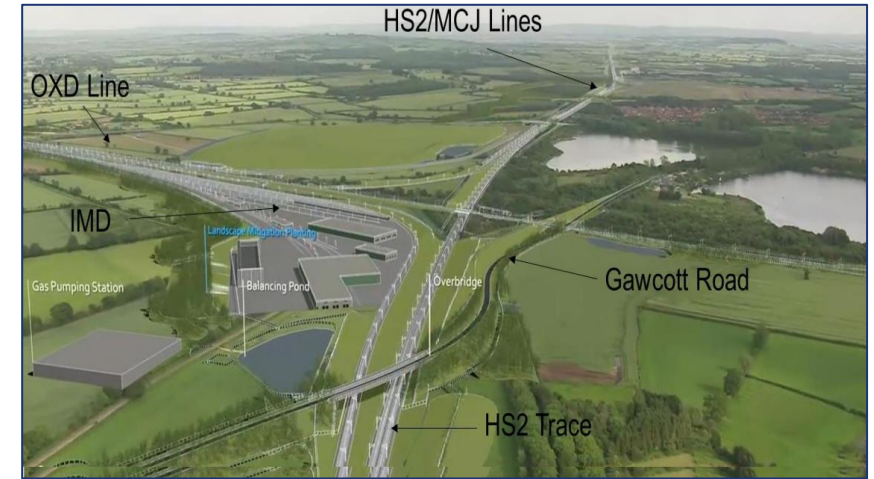
# Engagement with Buckinghamshire Council

- Monthly traffic liaison group (TLG) meeting
- Weekly pre-application meetings attended by HS2, EKFB and the Buckinghamshire Council HS2 consents team
- Presentations to members and community groups on a regular basis
- Engagement teams are embedded in local community forums



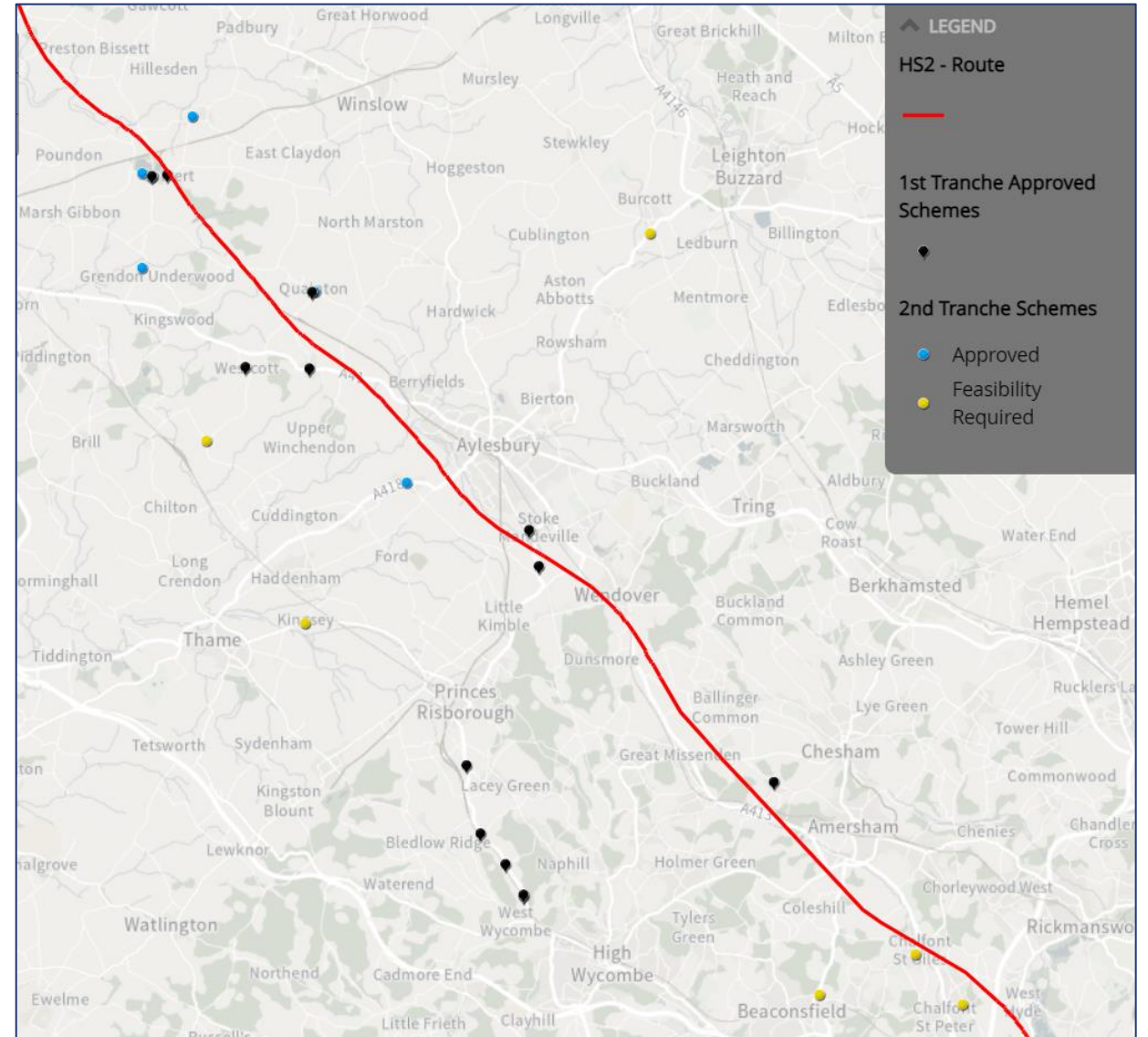
# EWR Interface

- TLG attendance
- Monthly Programme and Planning meeting
- Attendance at BC's fortnightly coordination meeting
- EWR share their confirmed programme of works with HS2 every week, which is imported into the HS2 GIS Portal for clash detection
- HS2 Engagement & EWR both attend local briefings with the community and local councillors, answering questions and updating on programmed works



# Road Safety Fund

- Buckinghamshire has an HS2 Road Safety Fund of £3.95 million, which will be allocated in a series of tranches up to 2026.
- Seventeen road safety schemes have now been approved for delivery from the first tranche of funding launched in 2021



# Road Maintenance

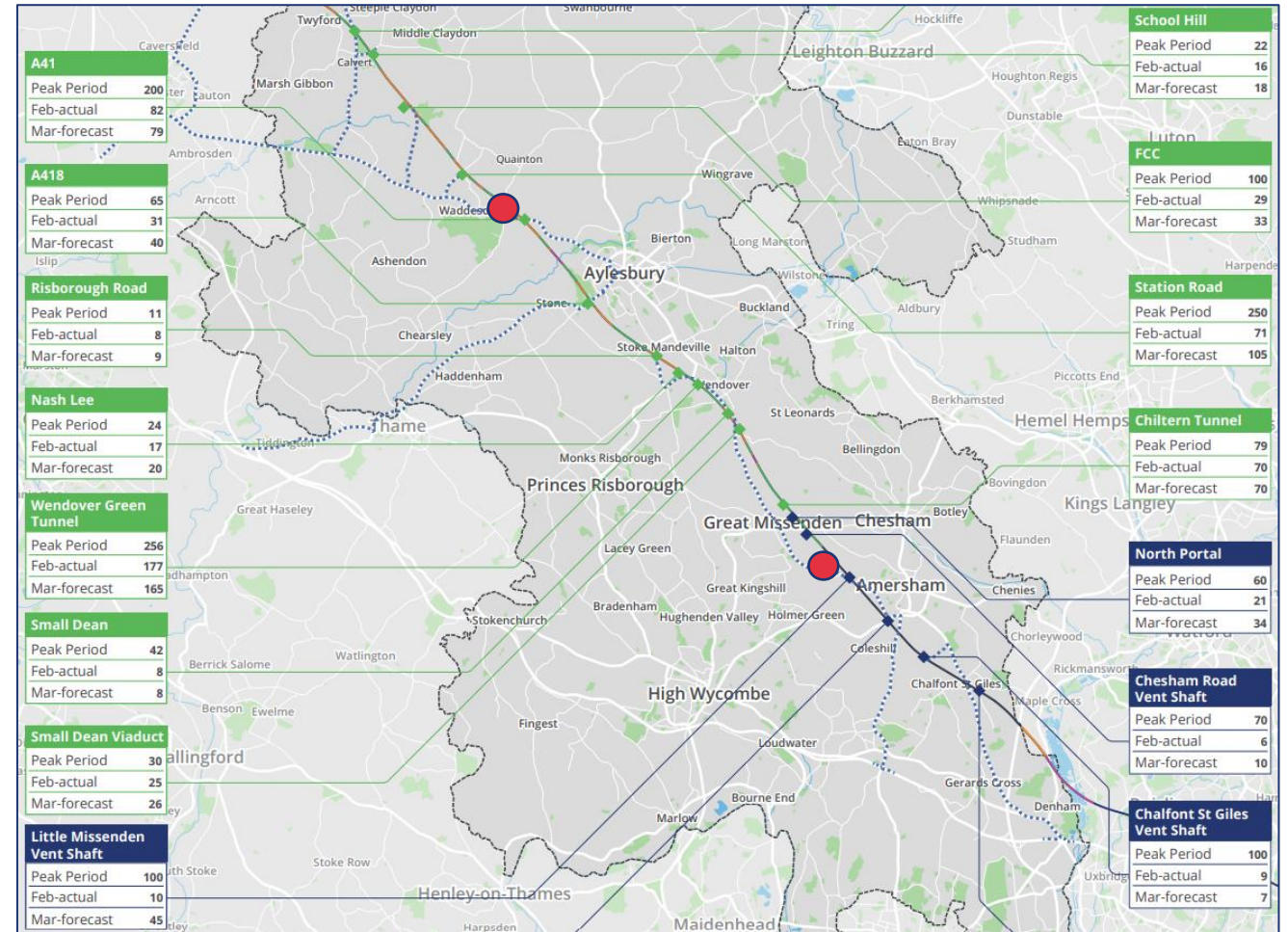
- Maintenance schemes delivered by HS2:
  - Align Moorfield Road ~ £180k
  - EKFB Station Road ~ £160k
- Maintenance schemes contributed towards by HS2:
  - 31% of a £250k scheme for the reconstruction of A40/A412 junction in Denham
  - 100% of £280k scheme for resurfacing of Quainton Road – being delivered by EKFB in 2023
  - Annual pothole fund of £98k
- Discussions ongoing re Pilot Scheme for preventative maintenance



# Vehicle Numbers

- Baseline traffic count data recorded at A41 & A413 throughout 2022
- HS2 lorry movements in 2022 recorded at the same location
- Data only taken on days HS2 are working – weekly percentage would be lower

	Vehicles per day	HS2 HGVs per day	% of total traffic
A41	17335	309	1.8%
A413	22859	203	0.9%



# Quainton Railhead

- Ability to deliver 3m tonnes of aggregate by rail into site – the equivalent of 300,000 lorry movements between now and 2025
- In the past two years 800+ trains have delivered **1.4 million tonnes** of aggregate, avoiding the requirement for more than **140,000** truck journeys on the road, and preventing an estimated 13,100 tonnes CO<sub>2e</sub> in Buckinghamshire
- Ongoing movement by Internal Site Access Road





# HS2

# Environment

Alasdair Hassan

Head of Engineering and Environment, HS2

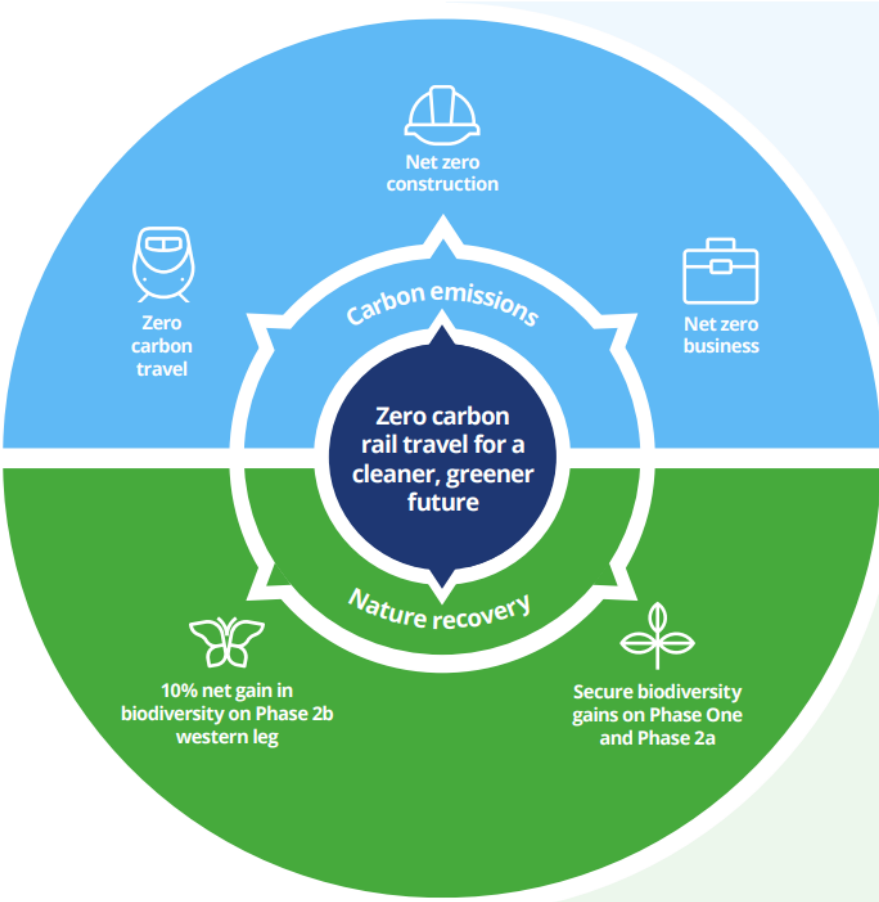
# Environmental Update

- Carbon
- Tree Planting
- Flood Risk



# Journey to Net Zero

## Sustainability Vision:



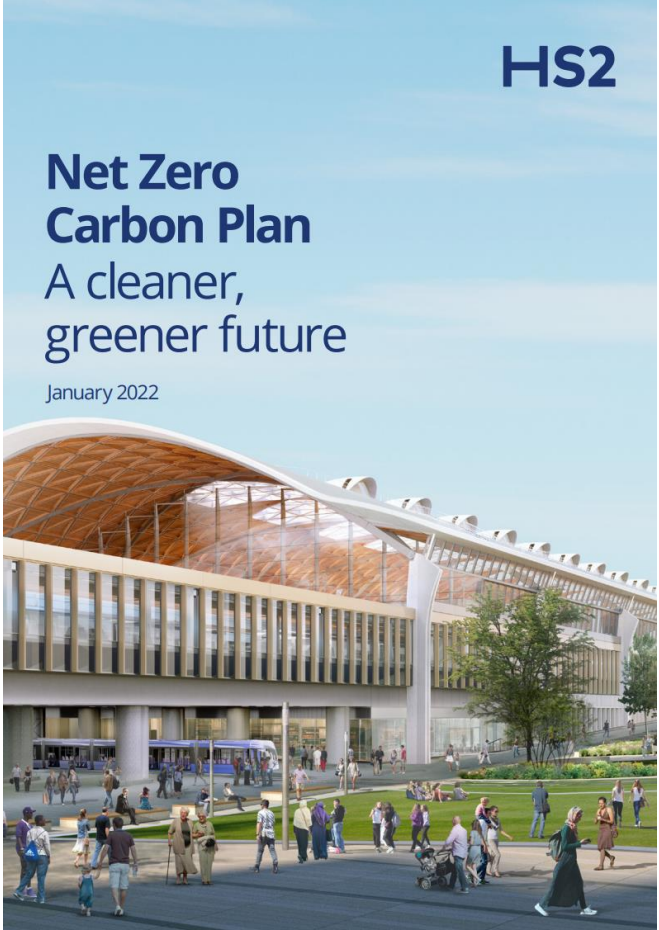
### Our vision for cutting carbon emissions

- Zero carbon electricity powers the dedicated HS2 network**
  - HS2 trains, stations, depots and rail infrastructure will use zero carbon energy
  - 50% cut in emissions from concrete and steel by 2030
  - 50% cut in all emissions by 2030
- Carbon emissions from construction removed or offset from 2035**
  - 11% reduction in HGV emissions by 2027
  - Contracts awarded to net-zero committed suppliers from 2022
- HS2 Ltd net zero from 2025**
  - First diesel-free works site in 2022 – and all sites by 2029
  - Net zero emissions from heating and powering our offices – and running our vehicles – by 2025

- Seek to achieve a 10% net gain in biodiversity on Phase 2b western leg**
  - Planting seven million trees and shrubs for the Green Corridor along Phase One
  - £7 million funding to plant new woodlands and improve existing woodlands along Phase One and 2a
  - Minimising the loss of ancient woodlands – and the land needed for HS2
- Secure biodiversity gains on Phase One and Phase 2a, moving beyond no net loss**
  - £45 million earmarked for funds including local environment projects
  - £2 million to enhance biodiversity on Phase 2a
  - Managing, monitoring and maintaining new habitats for at least 30 years
  - Supporting innovations in nature recovery and the way biodiversity is monitored
  - Developing route-wide partnerships to boost biodiversity gains

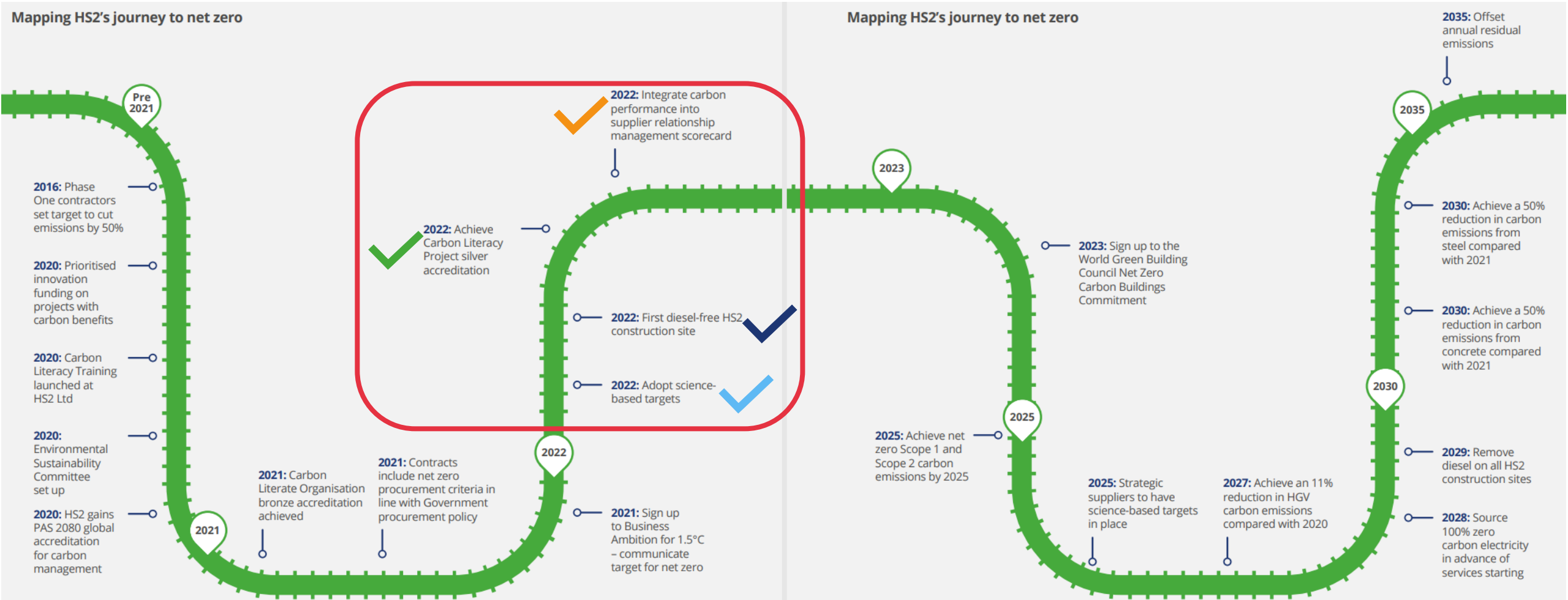
### Our vision for boosting nature recovery

## Net Zero Carbon Plan:



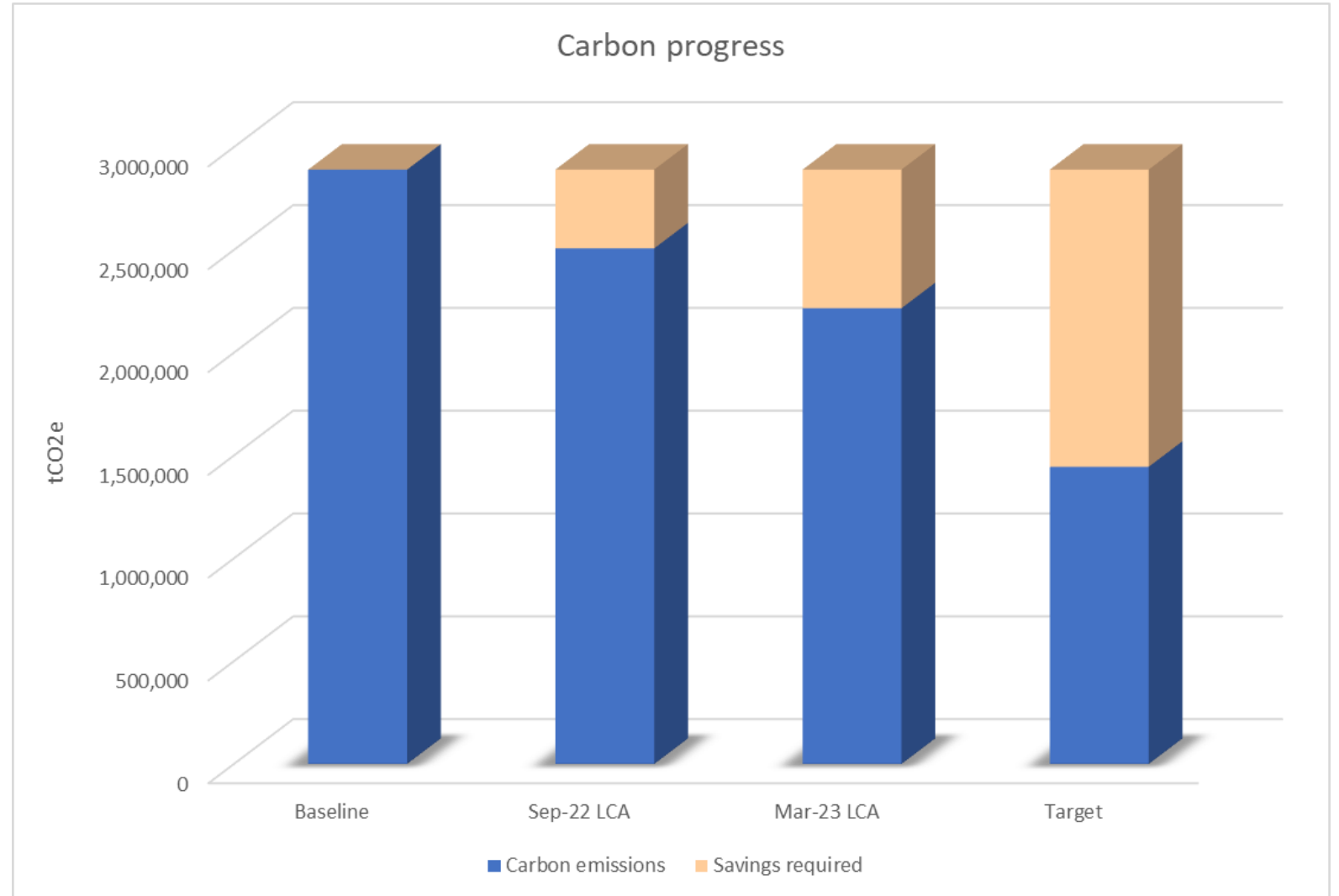
[Net Zero Carbon Plan](#)

# Performance against 2022 objectives



# EKFB – Carbon Mitigation

- The latest carbon footprint estimate for the C23 scheme equates to 2,216,111 tCO<sub>2</sub>e
- This is an approximate 23% decrease compared to the latest agreed baseline
- Key carbon hotspots lie in:
  - Materials (42%)
  - Construction activities (23%)
  - Transport (22%)
- Further mitigation efforts focused in these areas in design and construction



# Carbon Reduction - Design

## Optimised Earthworks

Optimised concentrations of lime treatment for earthwork stabilisation from 2.5-3% down to 1.5%



## Volume Reduction

Reduction in volume of material required for pre-cast segments, re-design of green tunnels



## Detailed Design Improvement

D-wall optimisation, double composite viaducts, optimised pile lengths, reduction in heaved slab etc.



# Carbon Reduction - Construction

## Renewable Energy

Such as CCTV, Lighting, Pump, Cabin and monitoring stations



## HVO alternative fuel

Switch from diesel to HVO bio-fuel



## Lower Carbon Transport

Transportation of imported aggregates through the four railheads by RSS



# Carbon Reduction Strategies

## Calcareous Grasslands

65,000 trees and nearly 3.5km of new hedgerows will be planted. Also providing a localised net biodiversity gain and carbon sequestration of 52k tonnes of CO<sub>2</sub>.





# Ecology and Biodiversity

**845,000  
trees  
planted  
across  
Phase 1**

**120 wildlife  
sites  
created  
across  
Phase 1**

**190 new  
ponds  
planned  
across  
Phase 1**

**15ha ancient  
woodland soil  
translocated  
across Phase 1**

**Other ecology e.g  
Sheephouse  
Wood Bat  
Structure, two  
bat houses and  
multiple green  
overbridges**

**Largest grassland  
translocation  
ever carried  
out at Grendon  
and Doddershall  
Meadows Local  
wildlife site**



# Tree Planting

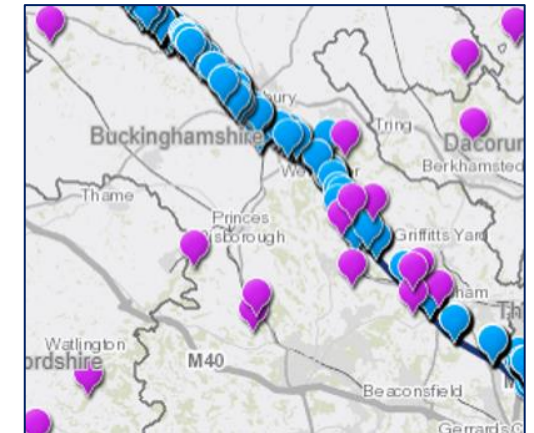
- Across the Buckinghamshire area the majority of tree removals has been completed
- EWC planted 230,000 trees in mitigation sites within the central section of the project
- Align will re-landscape all of their sites and plant approximately 85,000 trees and plants
- Similarly EKFB plan to plant 2.25 million trees and plants as part of their landscape design
- Biodiversity net gain showing in both Align and EKFB areas with in particular net gain in linear / area habitats



# HS2 Woodland Fund

To support HS2's ecology programme, the HS2 Woodland Fund is a £5 million grant scheme aimed at helping landowners to restore Plantations on Ancient Woodland Sites (PAWS) and create new native woodland, at 100% of standard costs.

- 21.7ha PAWS Restoration Sites
- 1.9ha Woodland Creation Sites
- 18.3ha Joint PAWS and Woodland Creation Sites



# Water Resource and Flood Risk

Overarching aim mirrors **National Planning Policy Framework** (NPPF)

**Early consideration of flood risk through specialist input at all stages of design development**

**Early focus on complex waterbodies; minimising risk to the railway, risk to third parties and WFD impacts**

**Continued Engagement with EA and Lead Local Flood Authorities (LLFAs) for consents.**



# Questions

