



Landscape and Visual - Overview

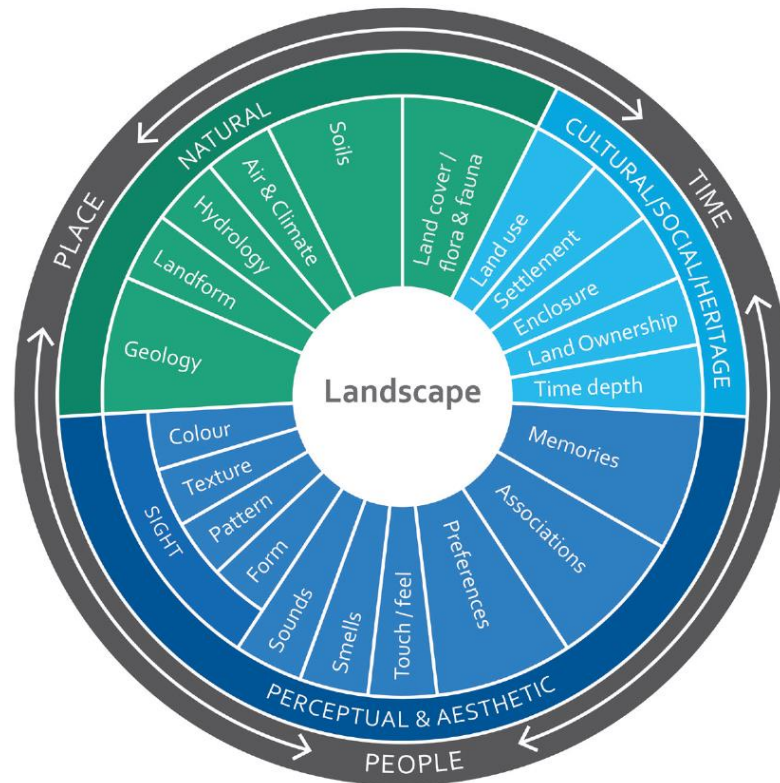
June 2016

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Definition of landscape

'...an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors.' (Council of Europe (2000), European Landscape Convention, Florence, October 2000)



HS2 approach to landscape & visual assessment

Guidance

- No existing legislation or prescriptive guidance for landscape and visual assessments.
- HS2 methodology has been developed using:
 - Guidelines for Landscape and Visual Impact Assessment Landscape GLVIA2 from the Landscape Institute and IEMA (2002)
 - Emerging guidance from GLVIA3 (eventually published in 2013) ; and
 - Design Manual for Roads and Bridges (DMRB), Volume 11 Section 3 Part 5: Landscape Effects (1993).

HS2 approach to landscape & visual assessment

Landscape Character Assessment

Assessment of landscape - the significant effects on the landscape as a resource – in this case the receptors are the elements of the landscape which contribute to its character (both physical and perceptual).

Visual Assessment

Assessment of visual effects - the effects on views and visual amenity as experienced by people – visual receptors are people located within the landscape.

HS2 approach to landscape & visual assessment

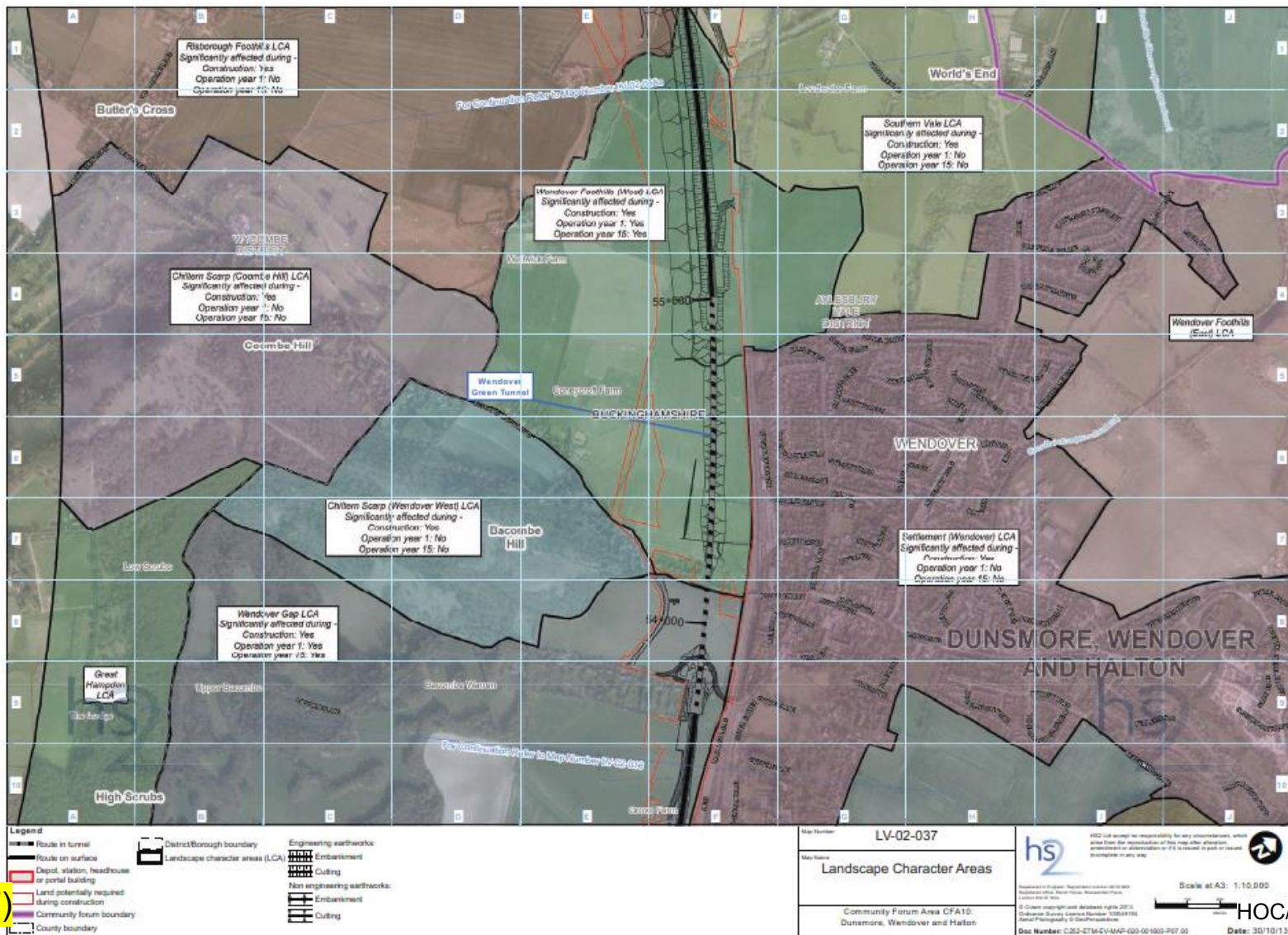
Landscape Character Assessment

Baseline



- Landscape character areas (LCAs) have been considered to assess the effects of the Proposed Scheme on the local landscape character.
- LCAs are areas which share similar landscape characteristics. They have been identified by county and local authorities as well as other bodies.
- The identification of LCAs takes into account character, condition, tranquillity and value of the landscape, which will determine the sensitivity of each LCA.

Landscape character areas

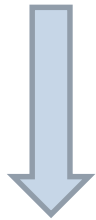


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HS2 approach to landscape & visual assessment

Assessment of effects

Assessing
magnitude



Assessing
significance

- Changes to the landscape as a result of the Proposed Scheme may give rise to effects on landscape character.
- The magnitude of such effects can be classified as high, medium, low or negligible.
- Significant effects are established taking into account a combination of the magnitude of the change introduced by the scheme and the sensitivity of the LCA.
- The significance of such changes is determined using professional judgement in accordance with the guidance.

HS2 approach to landscape & visual assessment

Visual Assessment

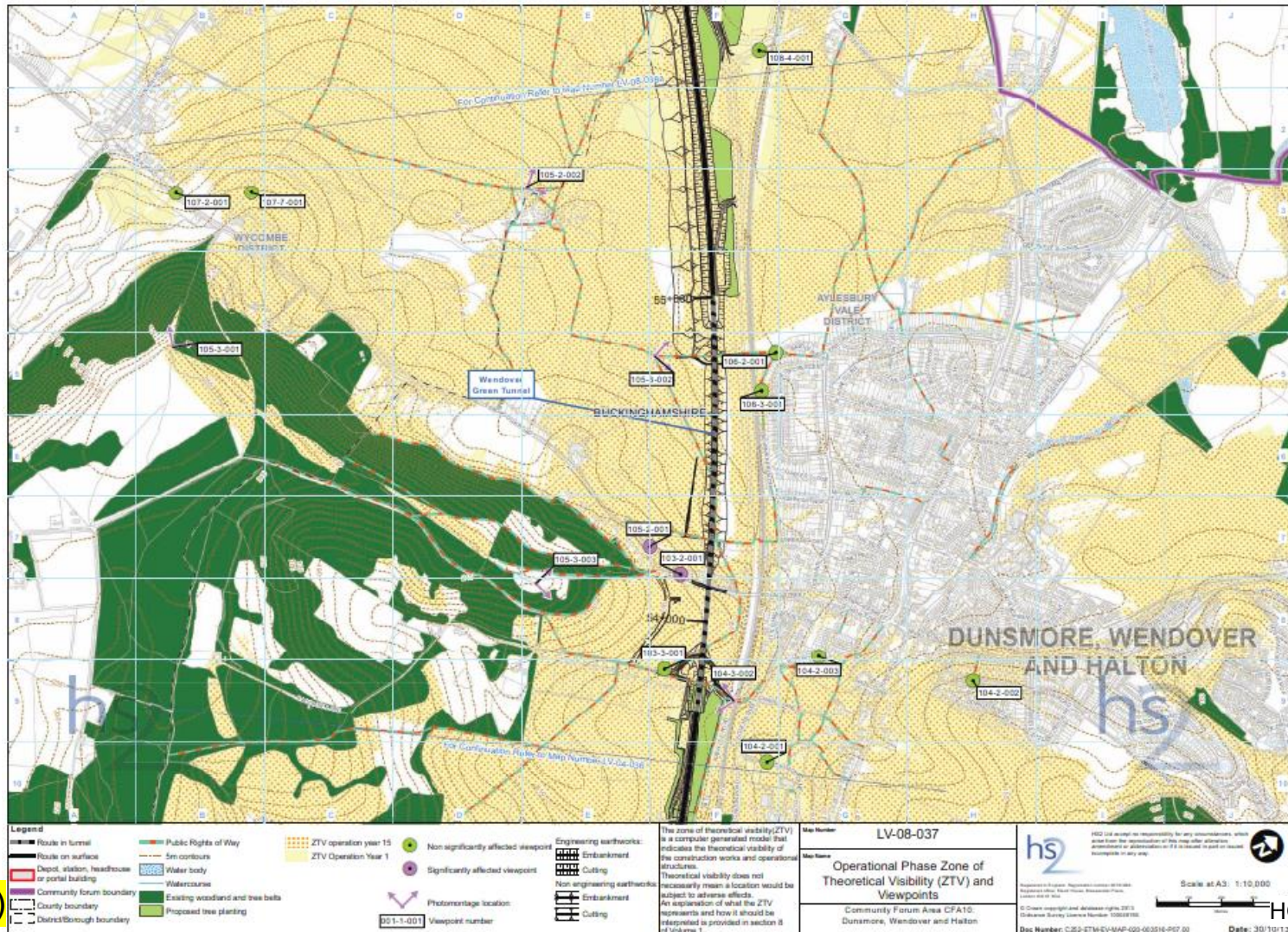
Baseline



- The study area is defined by the Zone of Theoretical Visibility (ZTV) which is the area over which the proposed construction & operational activities or the components of the Proposed Scheme (including trains) might be visible.
- A ZTV is a computer generated tool used to identify the likely (or theoretical) extent of visibility of a development. Therefore, the ZTV provides indication of where the Proposed Scheme could be viewed within a given landscape.
- This accounts for local topography and existing vegetation.

HS2 approach to landscape & visual assessment

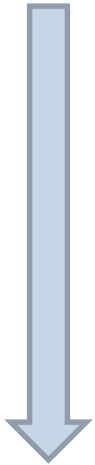
Zone of Theoretical Visibility – Wendover



HS2 approach to landscape & visual assessment

Visual Assessment

Baseline



- Representative viewpoints are identified to assess the visual effects on sensitive receptors (e.g. residential properties, schools, farms and sports facilities) within the ZTV.
- Local planning authorities were consulted on the locations of such viewpoints along the line of the route.
- Sensitivity of receptors is determined based on people's level of interaction with the landscape (e.g. those areas where existing transport infrastructure rural/urban landscape).

HS2 approach to landscape & visual assessment

Assessment of visual effects

Assessing
magnitude



Assessing
significance

- Changes to views as a result of the Proposed Scheme may give rise to effects on sensitive receptors.
- The magnitude of such effects can be classified as high, medium, low or negligible.
- Significant effects are established taking into account a combination of the magnitude of the change introduced by the scheme and the sensitivity of the viewpoint.
- The significance of such changes is determined using professional judgement in accordance with the guidance.

HS2 approach to landscape & visual assessment

Temporal assessment

- To account for the maturing of landscape mitigation planting an assessment is undertaken during construction, year 1, year 15 and year 60.
- Such assessment are supported by the production of verifiable photomontages.
- The proposed location of photomontages were shared with local authorities.

HS2 approach to landscape & visual assessment

- The basis for selecting the location of photomontages is:
 - Presence of viewpoints or areas highly sensitive to change and/or protected viewpoints identified in planning documents (e.g. London View Management Framework Supplementary Planning Guidance);
 - The effect on views cannot be easily assessed using other documents or techniques (e.g. plans, sections, elevations and 3D visualisations); or
 - Helping the reader to understand the visual effects of the Proposed Scheme.

HS2 approach to landscape & visual assessment

Photomontages on Wendover - Winter year 1

Current baseline (2013)



Operation Year 1 (2026) - Winter verifiable photomontage



HS2 approach to landscape & visual assessment

Photomontages on Wendover - Summer year 15

Current baseline (2013)



Operation Year 15 (2041) - Summer verifiable photomontage

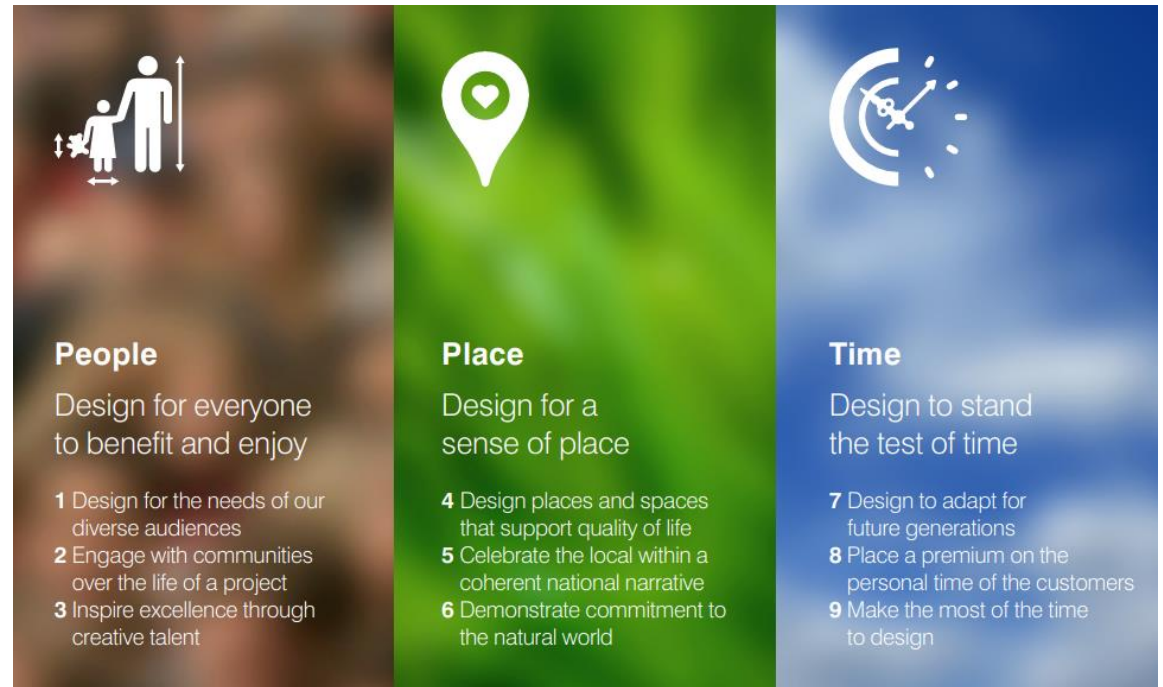


HS2 Landscape Design

HS2 Design Vision – making HS2 a catalyst for growth

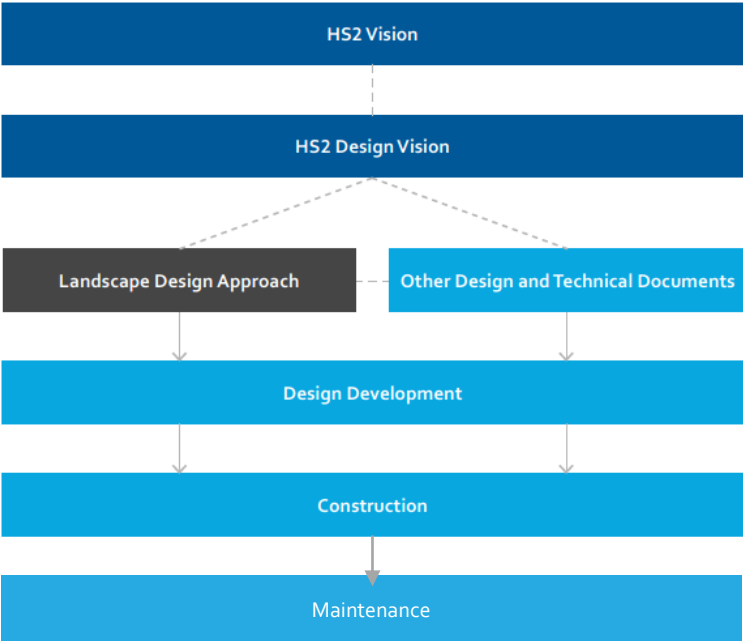
"HS2's principal objective is to deliver an inspired design, the best in worldwide design. The system will be delivered through all the designed elements coming together. Every design task is critical."

Simon Kirby - CEO, High Speed Two (HS2) Ltd



HS2 Landscape Design

HS2 Landscape Design Approach



HS2 Landscape Design

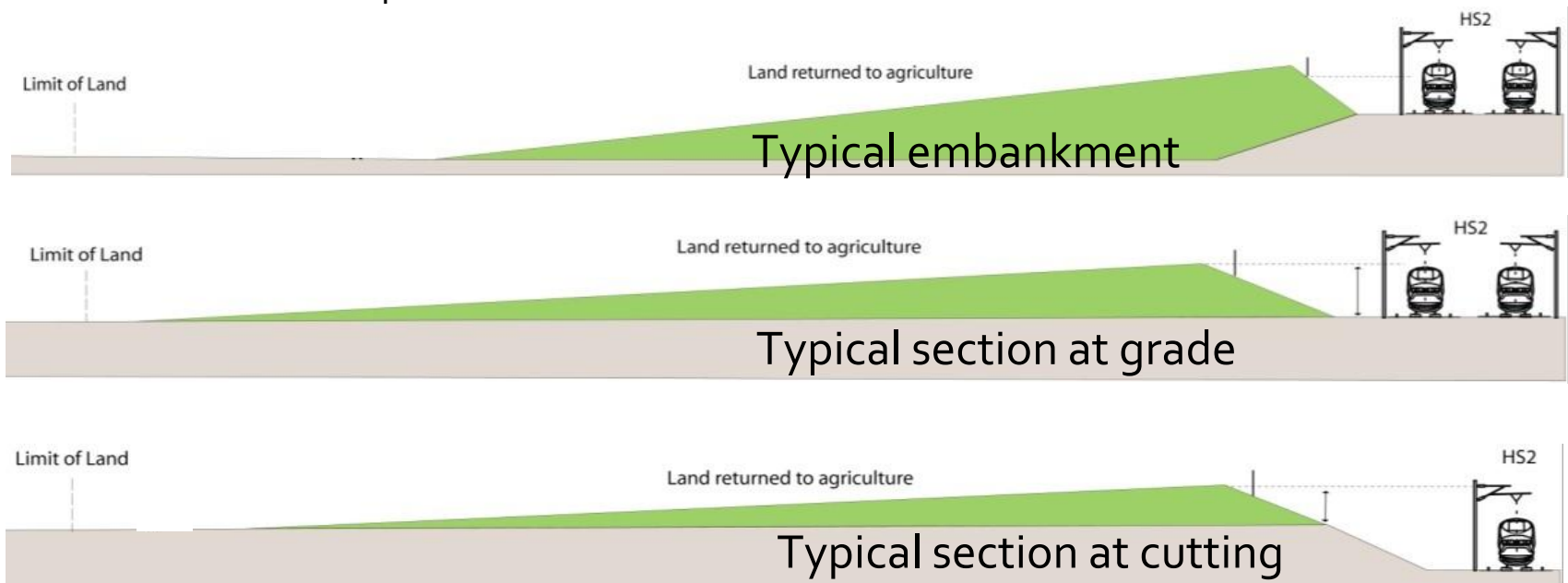
General approach to mitigation

- Landscape mitigation forms part of an integrated design approach that considers both engineering requirements and environmental considerations alongside best practice design.
- Mitigation has been considered firstly at a strategic scale with consideration given to the horizontal and vertical alignment to reduce landscape and visual effects (for example the Proposed Scheme has been kept as low in the landscape as possible).

HS2 Landscape Design

Individual elements

- Careful consideration has been given to the design of the individual elements of the Proposed Scheme, to ensure that they are sympathetic to the local landscape.
- This includes design of earthworks to achieve visual screening and integration of the route into the local landscape:



HS2 Landscape Design

Individual elements

- Provision of new planting and protection of important areas of existing vegetation to help integrate HS2 into the surrounding landscape.
- Design and setting of new structures such as bridges, viaducts and buildings, subject to approval of the relevant local authority.
- Design of areas of public realm associated with new stations and associated infrastructure.
- Landscape design associated with new, diverted or realigned roads and PRow.
- Design of noise mitigation, including earthworks and noise fence barriers.
- Design and appearance of fencing, including boundary and security fencing.
- Design of diverted watercourses and balancing ponds.

HS2 Landscape Design

Mitigation to reduce effects of construction

- Advance planting, temporary screening or earthworks will be identified during detailed design at appropriate locations.
- Temporary or permanent mitigation will be installed at the earliest opportunity where appropriate.
- Planting away from the route will also be established to reduce adverse landscape and visual effects.

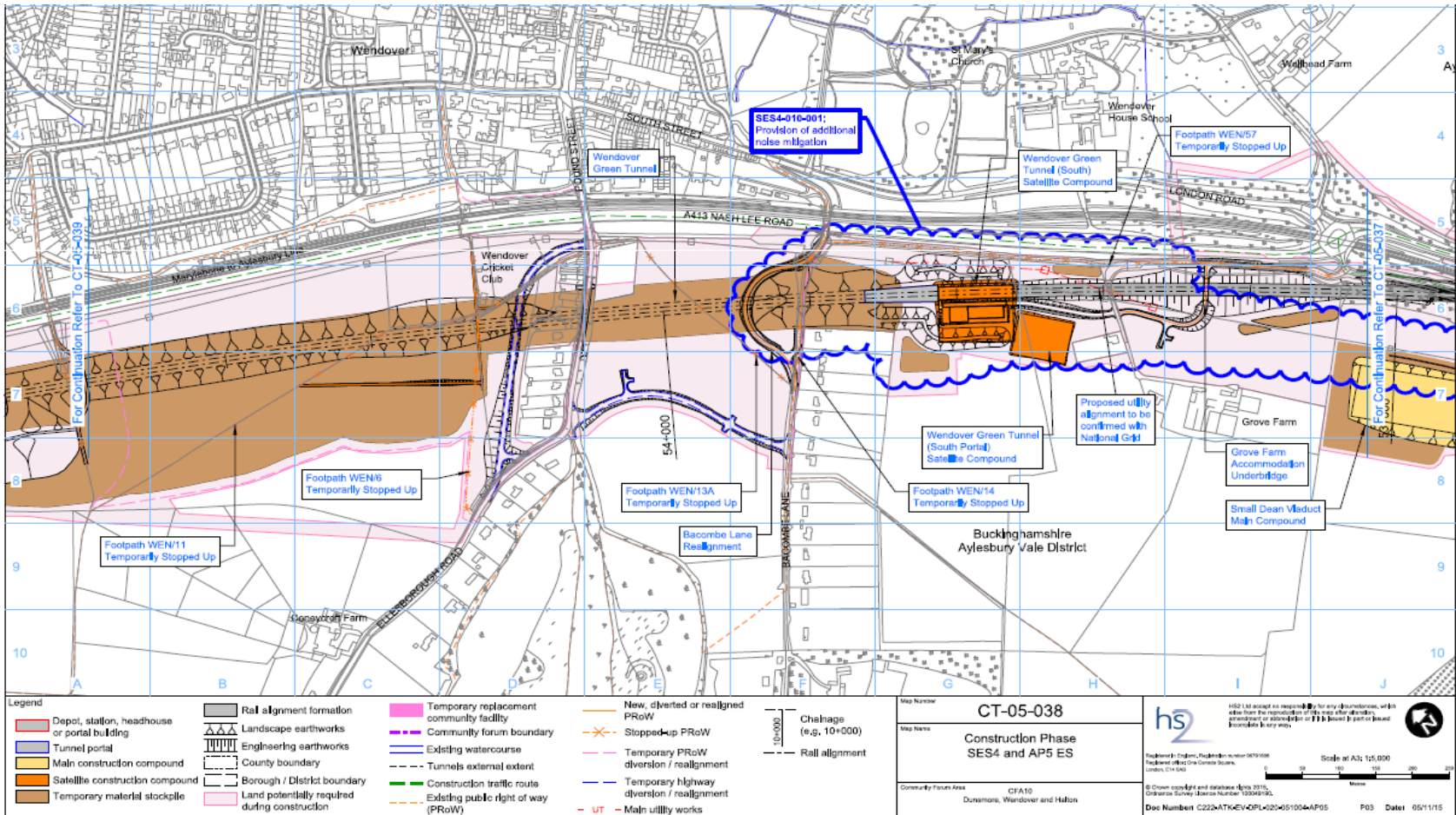
HS2 Landscape Design

Maintenance agreements

- The nominated undertaker will maintain landscaped areas within the rail corridor to an appropriate standard, and will ensure that the maintenance of other landscaped areas is secured through agreement.
- Areas of mitigation provided outside the rail corridor will, where reasonably practicable, be transferred to third parties, subject to agreements to ensure that the necessary management objectives are met.

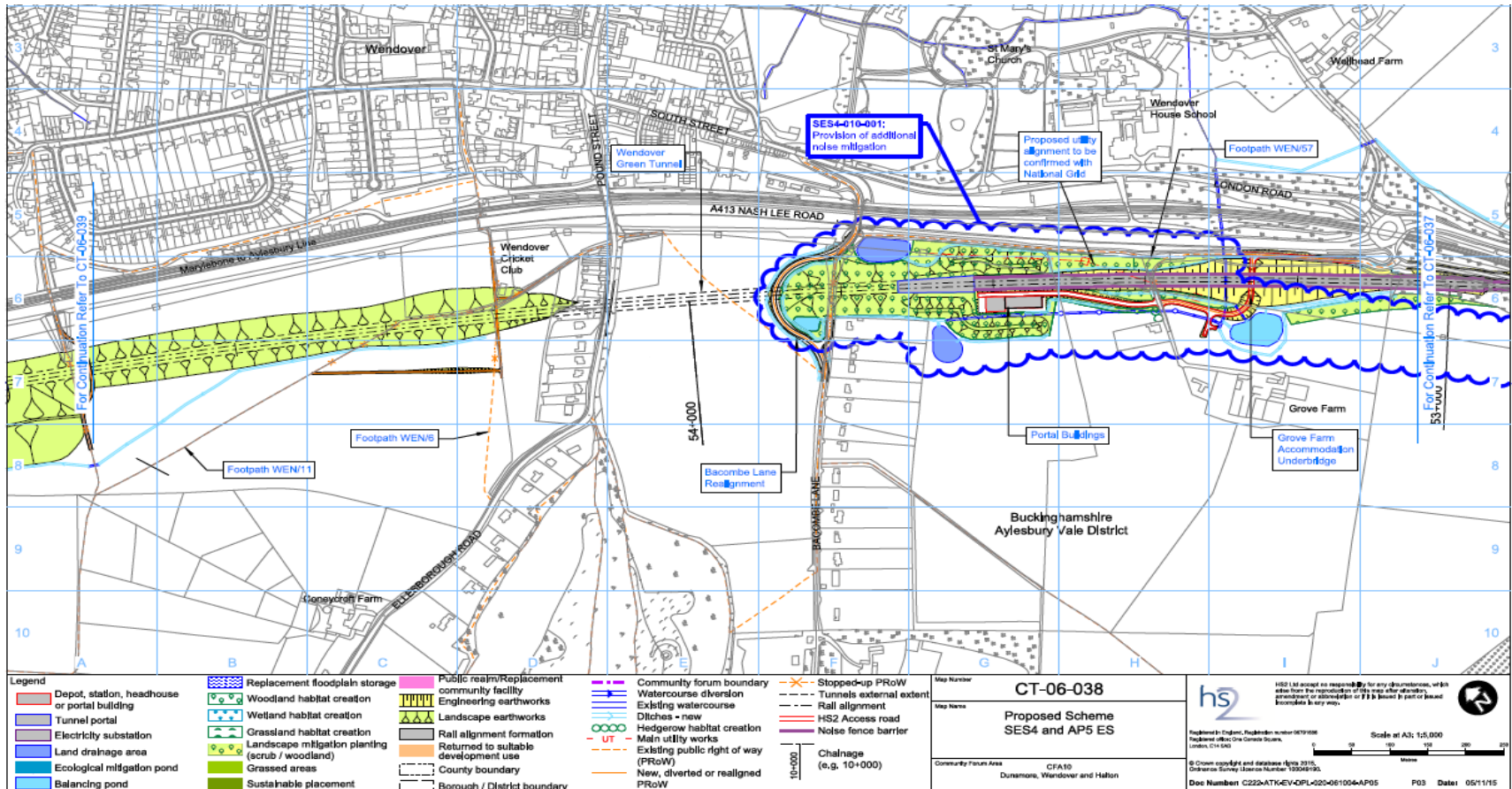
HS2 Landscape Design

Construction Wendover



HS2 Landscape Design

Operation Wendover



HS2 Landscape Design

The role of the Design Panel

- The Design Panel was established to guide HS2 to ensure the scheme meets the highest international design standards.
- They include experts in design fields who are considering key elements of the overall design as well as more site specific issues.
- The Interim Design Panel helped to establish the landscape vision and to raise the bar on design quality and the definition of key landscape design principles.

HS2 Landscape Design

The role of procurement

Developing detailed design

- The Nominated Undertaker will require contractors to prepare designs for the scheme in accordance with the Landscape Design Approach;
- There will be engagement with local communities on key design elements in accordance with the Promoter's Design Policy (IP D1);
- The Nominated Undertaker will submit draft designs for approval to local authorities in accordance with Schedule 17.

HS2 Landscape Design

Understanding & responding to local context

Conserve



A sensitive high value landscape is likely to require a landscape design approach that creates significant screening and integration of HS2, but also develops measures that will conserve and enhance the overall landscape character.

Enhance



A landscape in which HS2 may be potentially highly visible is likely to require a bold landscape design approach to create effective screening and integration, but also gives the opportunity for enhancement of local landscape character.

Restore



HS2 may traverse a landscape that has lost or is losing original features and qualities that provided its intrinsic landscape character. The opportunity is to restore and significantly improve existing landscape character.

Transform



Some areas through which HS2 is planned may be in very poor landscape condition. The opportunity for HS2 bringing transformation and wide reaching positive landscape change may occur both in rural and urban locations.

HS2 Landscape Design

The Landscape scale – from macro to micro

Route-wide: The vision and design principles



HS2 Landscape Design

Macro



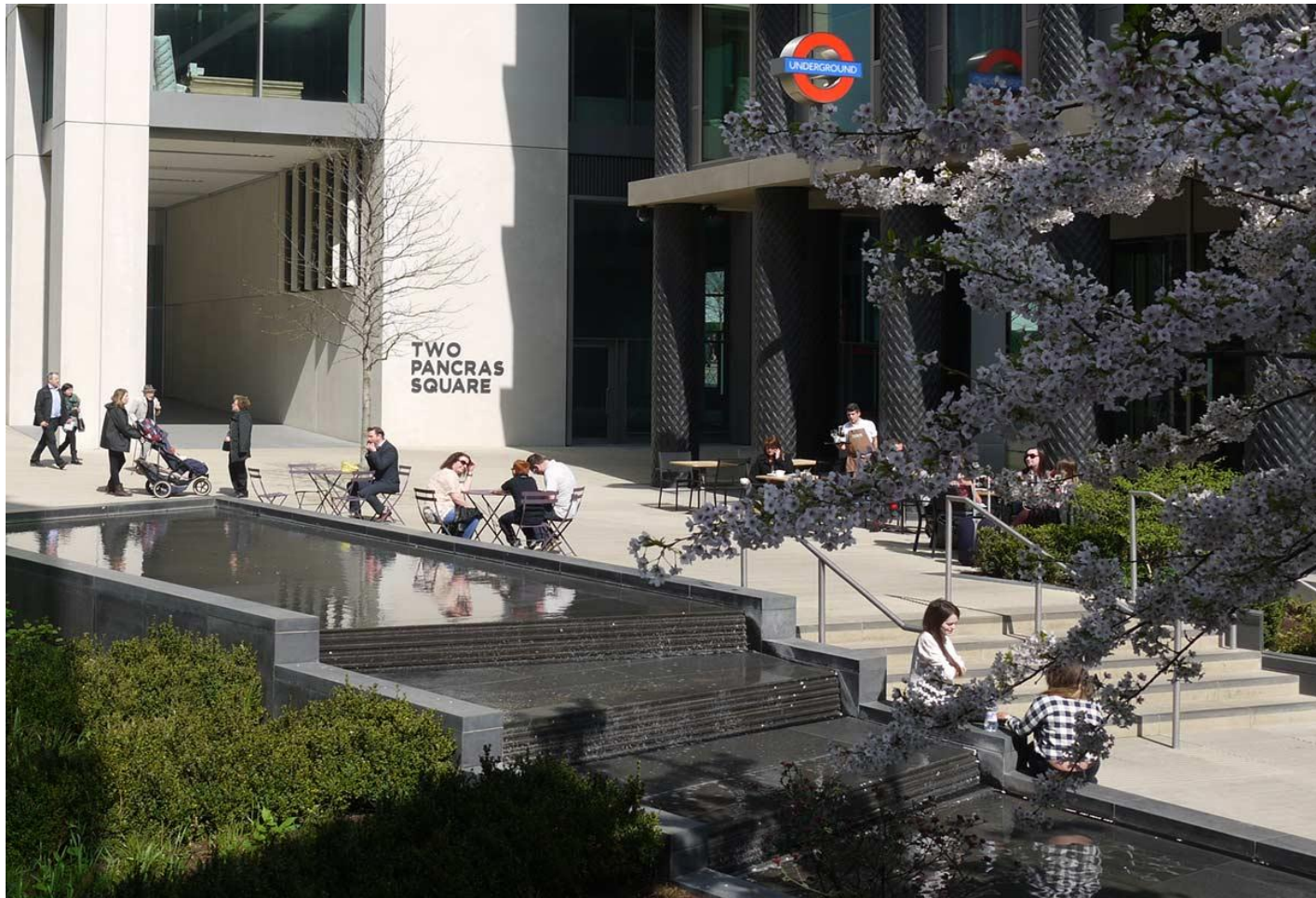
HS1 North Downs Tunnel Portal, Maidstone. Image courtesy of Network Rail



Image courtesy of HS1

HS2 Landscape Design

Micro



HS2 Landscape Design

Illustrative landscape restoration

LEGEND



Wet woodland habitat is associated with the floodplain of the River Colne. It is an uncommon and declining habitat Nationally and a reason for the designation of the Mid Colne Valley Site of Special Scientific Interest (SSSI), although its extent has been much reduced by gravel extraction. The creation of wet woodland will increase the extent of habitat in the Colne Valley as a whole and provide supporting habitat for nearby SSSIs. Once mature it may provide habitat for declining species such as marsh tit.



There are opportunities to use excavated material to create calcareous grassland (chalk grassland) on south facing slopes. The species composition of extensive areas of calcareous grassland will reflect that found in the Mid Colne Valley SSSI and the Chilterns as a whole. It will provide sufficient area of habitat for ground-nesting birds, reptiles and a diverse range of invertebrates. Natural colonisation of chalk grassland plants will be encouraged. An example of habitat creation on similar substrate is at 'Sampshire Hoe' on the Kent coast, created with spoil from the Channel Tunnel.



Beech is a dominant species of Chilterns woodland. Planting and management of woodland would aim to replicate species composition of nearby semi-natural woodland and natural colonisation would be encouraged. This species would also bring a distinctive sense of place to the Old Shire Country Park.



Wetland habitat will include extensive areas of marginal fen and reedbed and provide undisturbed areas for waterbirds including breeding species present in the Mid Colne Valley SSSI, such as reed bunting.



There will be numerous opportunities for the enjoyment of nature, including view points, trails and seating areas. There will be interpretation boards and routes around the park creating a more understandable environment to interact with. This is particularly important as the Colne Valley is a significant countryside asset to many people located to the west of London.



The access road makes use of the construction access from the A412 Denham Way and enables the car park to be located centrally at a hub of connecting paths providing access for visitors of all ages and abilities.



The HS2 viewing areas will enable visitors to see the trains as they pass in and out of the tunnel and across the Colne Valley viaduct. There will also be an opportunity for long distant panoramic views across the Colne Valley as promoted by the River Colne and Crane Area Framework.



The proposed footpaths will enable visitors to walk and enjoy the views across the parkland. The footpaths and bridleways are designed to connect to existing routes including the historic Old Shire Lane (P160).



Horse riding is an important pastime for many people in the locality. The park will promote and enable horse riders to utilise the facilities including a cross country route through the undulating parkland.

