

**TAG Landscape Impacts Worksheet**

Step 2		Step 3				Step 4	
Features	Description	Scale it matters	Rarity	Importance	Substitutability	Impact	Opportunities for Mitigation
Pattern	<p>The study area pattern is an undulating, clay-dominated, low-lying rural landscape that is centred on the Cotswold Escarpment with relatively little woodland cover. The area has a regular pattern of medium to large sized fields with field boundary hedgerows, hedgerow and individual trees and linear belts of shrubs and trees of a predominantly deciduous nature. There are some gaps in the vegetation which provide open, long-range views over the rural landscape.</p> <p>The landscape adjacent to the M4 is predominantly vegetated by linear belts of shrubs and trees to the north and south of the carriageway. As the M4 continues under the Stanton St. Quintin roundabout it traverses the landscape through a cutting with small to medium sized deciduous copse north and south of the carriageway.</p> <p>The River Avon flows through the landscape approximately 3.5km to the east of the study area and runs north/south. The river Avon is lined either side with scattered trees of a riparian and deciduous nature.</p> <p>A coherent pattern of landscape elements with some detracting features including power lines, farm and commercial buildings, roads and road junctions.</p>	Regional and local	Regionally and locally common	Medium regional and local importance	Highway's planting is substitutable in the medium term. (15 years for replacement planting to provide current cover)	<p>The widening of the road alignment coupled with any required de-vegetation and the elevated nature of the existing road corridor will allow the M4 J17 to become more apparent and open up the pattern of the landscape. However, over time the pattern will be restored through mitigation and enhancement measures. This will aid to minimise long-term impact on the landscape pattern.</p> <p>Based on the anticipated amount, location, quality and substitutability of the vegetation lost, this would result in a Moderate Adverse impact initially and reducing over time to a Slight Adverse impact post year 15 with the mitigation and enhancement measures in place.</p>	There would be benefits in strengthening the screening of the highway planting, by carrying out some off site planting, particularly if planting with a higher ratio of evergreen species. These would act as additional sound buffer and visual screen in the landscape framework.
Tranquillity	<p>In general the tranquillity directly adjacent to the M4 J17 is low as it is affected and disturbed by the M4. The surrounding landscape and nearby communities are afforded protection by established, mature vegetation including hedgerows with trees, small woodlands, and linear belts of shrubs and trees. The vegetation, albeit deciduous, helps to integrate the M4 J17 into the surrounding landscape and provides screening.</p> <p>Within the rural landscape, approximately 3.5km east of M4 J17, a river corridor possess a peaceful, undisturbed pastoral character.</p> <p>Approximately 1km North and 930m north-west of M4 J17, Lower Stanton St. Quintin and Stanton St. Quintin reside respectively. Residential properties, road networks and the MOD Hillington Barracks, approximately 1.3km north of M4 J17, are dominant features of the urban character reducing the level of tranquillity in these areas.</p> <p>Approximately 250m north-east of M4 J17 is predominantly agricultural with farm buildings and fields. South-east is predominantly agricultural with some commercial buildings along B4122 including Quintin Recycling Centre (Approx. 740m) and Wessex Auction Rooms (Approx. 1km), these reduce the level of tranquillity slightly.</p> <p>South-west of M4 J17 is predominately agricultural with some commercial buildings including Chippenham Pallet Company Ltd along the A350 (Approx. 630m) and C D Fencing along Stanton Lane (Approx. 950m). The effect on tranquillity is low due to the location of these commercial properties.</p>	Local	Typical for the area	High local importance	Not substitutable	<p>During the construction stage, the elevated sections of road as well as new sections of road corridor associated with the planned widening, would be visible within the landscape. This would result in a reduction in tranquillity in the areas directly adjacent. The tranquillity of these areas will be temporarily altered by the works and early operation of the improved junction. This would be considered in context with the various existing transport routes traversing across the landscape and the potential for minimising the adverse effects through adequate mitigation and enhancement measures.</p> <p>This proposal would directly affect the route corridor and land within it and would lead to a change in the tranquillity to the adjacent areas. Vegetation will be required to be removed to allow for the works thereby reducing the potential for tranquillity during construction and early operational phases. This would result in a Slight Adverse impact initially and reducing over time to a Neutral impact post year 15 with the mitigation and enhancement measures in place.</p>	During the construction phase also take into consideration noise and movement of vehicles in so far as it may affect the perception of tranquillity in the landscape, access arrangements and traffic movements and looking at methods of potentially phasing the development over the operational stage.

Cultural	<p>There are a number of historical features such as Listed Buildings (9 approx. 1km north-east, 23 approx. 1.3km north, 2 approx. 1.3km north-east, 2 approx. 1km south-east and 2 approx. 1km south-west) and a few Scheduled Monuments within the wider landscape (1 approx. 1.6km north-east, 1 approx. 1.8km south-east and 1 approx. 1.2km north-west) as well as Stanton St. Quintin Conservation Area, directly adjacent to M4 J17 northern side, which contribute to the landscape character.</p> <p>Nucleated villages with many retaining their traditional character. There is modern suburban housing within the larger villages, approximately 1km north and north-west.</p> <p>Stanton St. Quintin Site of Special Scientific Interest (SSSI) is in two parts across the study area with the larger half being located directly within M4 J17 and the smaller half being approx. 970m north-east.</p> <p>The surrounding countryside has several Public Rights of Way (PRoW) crossing agricultural land and alongside the local river network. The PRoW in close proximity to M4 J17 are:  North-west - SSTQ2 and SSTQ3 (Approx. 1km and 550m respectively).  North-east - SSTQ4 (Approx. 400m)  South-east - KLAN26, KLAN29, KLAN30 and SBEN14 (Approx. 640m, 605m, 680m and 790m respectively)  South-west - KSTM5 and KSTM7 (Approx. 1km and 700m respectively).  National Cycle Route 403 passes through Chippenham south of M4 J17.</p>	Heritage features matter at a regional and national scale	Regionally common	Regionally and locally common	Not substitutable	<p>Historical features that contribute to the landscape character and visual amenity including Listed Buildings, Scheduled Monuments, and Stanton St. Quintin Conservation Area would potentially be affected.</p> <p>The works will potentially result in an adverse effect on the visual amenity, upon several receptors including properties of Stanton St. Quintin to the north-west and Lower Stanton St. Quintin to the north of the works. Also, isolated farms and properties north-east, south-east and south-west of M4 J17 as well as users of the PRoWs adjacent would experience an adverse effect on visual amenity.</p> <p>However, through considered design and landscaping along the M4 J17, the road corridor could be increasingly contained, minimising impact on the surrounding cultural features and visual amenity. This would result in a Moderate Adverse impact initially and reducing over time to a Minor Adverse impact post year 15 with the mitigation and enhancement measures in place.</p>	PRoW - Ensure advanced notification of construction work for PRoW users. It is also recommended that reinstatement of the original route is undertaken.
Landcover	<p>The landcover adjacent to the M4 is predominantly vegetated by linear belts of deciduous shrubs and trees to the north and south of the carriageway. As the M4 continues under the Stanton St. Quintin roundabout the land goes into cutting where a small to medium sized deciduous copse lying north and south of the carriageway.</p> <p>The landcover just beyond the M4 J17 is characterised by agricultural fields with field boundary hedgerows. The trees are deciduous with some small-scale broad-leaved woodlands scattered throughout the landscape.</p> <p>The landscape is intensely farmed with a higher percentage of pasture to arable. The area's generally fertile soils and good quality agricultural land have supported a diversity of farming over a long period but, because of this, little semi-natural habitat remains. The River Avon and its flood plain is a distinctive feature running through the landscape. This is a major corridor for wildlife moving through the area and for supporting a variety of wetland habitats.</p> <p>There are a number of veteran trees approximately 1.5km east of the study area, both north and south of the M4.</p>	Regional and Local	Regionally and locally common	Medium regional and local importance	Arable land cover is substitutable in the short to medium term.	<p>Due to the widening and construction of new highway linear belts of deciduous shrubs and trees adjacent to the M4 will be lost.</p> <p>However, through mitigation and enhancement measures the adverse effects would potentially be minimised reducing the overall impact on the surrounding landcover.</p> <p>Based on the assumption that a certain amount of vegetation shall be lost and considering the location, quality, and substitutability of said vegetation it is reasoned that this will potentially result in a Moderate Adverse impact.</p> <p>The potential significance of effect is therefore deemed to be Moderate Adverse impact initially and reducing over time to a Minor Adverse impact post year 15 with the mitigation and enhancement measures in place.</p>	<p>Any adverse effects can potentially be mitigated through such measures as:</p> <ul style="list-style-type: none"> <li>- Vegetation removal should be kept to that necessary for the works and, where possible, avoid mature species;</li> <li>- Vegetation removed should be replaced on a like for like basis where possible, suitable alternatives should be proposed in the case that the species cannot be matched;</li> <li>- Where possible bunding with vegetative screening including evergreen species that fit with the local vernacular to aid screening to be established;</li> <li>- Enhancement of the environment along the Scheme to improve the experience for residents, pedestrians, cyclists, and vehicle users;</li> <li>- Retain and make best use of existing vegetation;</li> <li>- Prioritise the early re-establishment of vegetation within the highway boundary;</li> <li>- Use native species of local provenance wherever possible;</li> <li>- Plant species to benefit local conservation works;</li> <li>- Off-site planting to aid screening where possible, including woodland planting if possible. Evergreen species to be included that fit with the local vernacular;</li> <li>- Planting to comply with and support landscape management strategies set by local authorities for the landscape character area; and</li> <li>- Proposed Planting should provide visual interest and diversity including suitable evergreen species.</li> </ul>

Summary of character	<p>The area is low lying with an undulating topography having a regular pattern, allowing open long-range views in many areas.</p> <p>Within the study area there is a noticeable retention of tranquillity around the study area with the M4 J17 being less tranquil due to it being a major road corridor and Stanton St. Quintin Lower Stanton St. Quintin having a lower level of tranquillity due to its residential nature. The River Avon and wider countryside allows for a more tranquil setting.</p> <p>There are several listed buildings and a few Scheduled Monuments within the wider landscape and including Stanton St. Quintin Conservation Area, Stanton St. Quintin Quarry and Motorway Cutting SSSI resides within Stanton St. Quintin Roundabout.</p> <p>The surrounding countryside has several Public Rights of Way including National Cycle Route 403 running south of the study area through Chippenham, and alongside the local river network. There are several veteran trees to the east of the study area.</p> <p>The landscape is heavily farmed with the landcover being predominantly pasture. The River Avon and its flood plain is a distinctive feature running through the landscape.</p>	Regional and local	Regionally and locally common	Medium	Some opportunity for substitution	<p>The proposed widening of the M4 J17 has the potential to result in direct effects however, there are opportunities to mitigate and enhance the scheme design to avoid, minimise and offset these effects.</p> <p>There is some uncertainty given that the environmental design and mitigation strategy is still to be developed however, due to the existing nature of the scheme being a major motorway any additional works will have a Minor Adverse effect and reducing to Neutral post year 15 as long as mitigation and enhancement measures have been established.</p>
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#### Reference Sources

National Character Area 117: Avon Vales, (Natural England, January 2014)  
Wiltshire GIS data (<https://wiltscouncil.maps.arcgis.com/apps/webappviewer/index.html?id=43d5a86a545046b2b59fd7dd49d89d22>)  
Woodland Trust – Ancient Tree Inventory  
Natural England GIS Data  
English Heritage GIS Data  
Sustrans GIS Data  
OS Open Data  
Google Earth

#### Step 5 - Summary Assessment Score

Slight Adverse

#### Qualitative Comments

A 2km offset from the centre line of the road has been used for the study area within this local character area. It is considered that adverse effects are unlikely beyond this.

The overall assessment score for the Scheme has been determined with reference to sections 5.3.15 – 5.3.20 and 6.2 of TAG UNIT A3, Environmental Impact Appraisal, May 2019, Department for Transport, Transport Analysis Guidance as summarised below:

- Cumulative adverse effects. Where it is clear that there is a cumulative effect across a range of key environmental resources, then the scheme as a whole should be scored in a higher category than the key environmental resources in isolation. For example, a scheme may affect a number of key environmental resources, each of which is assessed 'slight adverse'. Where it is clear that there is a cumulative effect across the key environmental resources, the scheme as a whole would be assessed as 'moderate adverse'.

All measurements are approximate and have been taken from the centre of the study area.

It is noted that a precautionary principle has also been applied due to uncertainty with regards the environmental design and mitigation strategy.