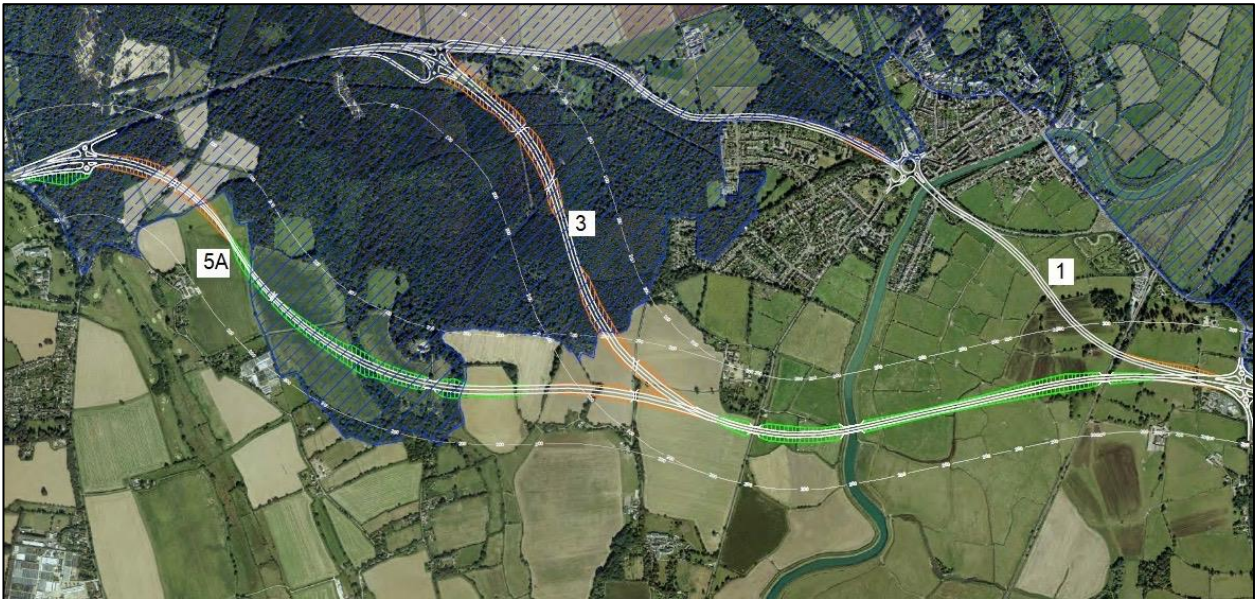


The A27

Route Options

Impact Comparison Table



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INTRODUCTION

This comparison of the A27 route options has been produced by MAVES in order to inform our response to the current consultation as regards the potential ecological impact of each route option.

This work is informed by two years of surveys carried out by a number of ecologists in the Mid Arun Valley area. With the exception of a stream and ditch network, only 'important' habitats, such as Ancient Woodland and Section 41 Habitats of Principal Importance as well as protected species are used in this assessment.

METHODS

For each route Option each habitat category is compared to the other two Options with factors such as relative size, relative quality and relative impact taken into account. A score of 0, 3, 6 and 9 is then allocated with 0 being no impact and 9 being the highest relative impact on a significant habitat, species or species assemblage.

All species and habitats considered have been recorded in the area (unless otherwise specified). Ten habitats and twelve species or species groups have been evaluated.

The habitat score is purely on the habitat and the intrinsic qualities of that habitat i.e. quality / whether it is replaceable, and the perceived magnitude of the impact upon that habitat. The 'impact' column gives additional details of how the loss or disruption of these habitats will impact upon protected species; however, this is not taken into account within the habitat score and is written in *italics*.

The scores for species are allocated in exactly the same way as that used for habitats with an explanation for each given.

This scoring system has been developed as a simple indicative method for the purpose of evaluating the combined effects of numerous differences between the ecological impacts of the three Options. It is not a substitute for detailed engagement with our full report.

RESULTS

The results are given in the table below and show that Option 5a is the most damaging to the species and habitats in the Mid Arun Valley, closely followed by Option 3. Option 1, though still damaging, is significantly less so.

Options 1 and 3 have fewer habitats than Option 5, seven and eight respectively. In order to adjust for this discrepancy, the given score can be taken as a fraction of 10 and multiplied up to give an equivalent score for the 10 habitats considered in Option 5a. Option 1 would score 34.3 ($24 \times 100 \div 70$) and Option 2 would score 67.5, though giving the same overall ranking.

Route Option	Habitats score	Species score
Option 1	24 (34.3)	60
Option 3	54 (67.5)	93
Option 5a	78	108

Option 1 scores lower and damage scores impact more on dynamic habitats that tend to be more replaceable. Option 3 scores highly, has slightly fewer habitats, but they are inherently highly valuable and irreplaceable. Option 5a scores highly and whilst it impacts less on irreplaceable habitat (by area) it does devastate the habitat matrix and dispersal corridors in turn impacting on species distribution and potentially long-term viability of some populations.

Habitat and species comparison table

Habitat / species	Option	Impacts / explanation	Score
Ancient woodland	Option 1	Smallest woodland loss with a slightly different species assemblage due to 'edge' woodland along the road and will therefore support a good range of species from different habitats. General diversity likely to be high though the potential for 'notable' or rare species low.	3
	Option 3	Largest area of direct habitat loss. Divide the largest block of woodland along the Sussex coastal plain into two; <i>impact 13 known bat species - will create a barrier across bat foraging grounds; create a barrier between known Bechstein's bats roost sites (Tortington Common and Stewards Copse); impact on 13 bat species foraging within the large block of woodland and surrounding area; traverse areas of breeding Dormice, traverse area of good Adder habitat; destroy habitat with high invertebrate diversity.</i>	9
	Option 5a	Slightly higher loss than Option 1 but good quality woodland with a smaller amount of road 'edge'. Road will divide the block of woodland to the west in two leaving a fragment sandwiched between two major roads that will ultimately lose species within due to fragmentation; impact an area of chalk spring fed wet woodland to the south due to junction damaging hydrology and woodland type / quality; <i>impact 13 known bat species - create a barrier between bat foraging grounds; create a barrier between Alcatloe roosts; isolate a major Badger sett between two roads; traverse Dormouse breeding habitat.</i>	6
Wet / deciduous woodland (HPI)	Option 1	Very small area of woodland loss along current A27.	3
	Option 3	No additional woodland loss.	0
	Option 5a	Additional good quality wet and dry woodland lost in The Lag and The Shaw.	9
Floodplain grassland (HPI) & associated ditches	Option 1	Loss of floodplain grassland. Fragment large expanse of floodplain grazing marsh / ditches; <i>impact of roads on breeding birds, Hare & some invertebrates; barriers for protected species moving across the landscape - Water Vole and European Eel, Otter if present.</i>	9
	Option 3	Loss of floodplain grassland (slightly larger area). Fragment large expanse of floodplain grazing marsh / ditches; <i>impact of roads on breeding birds, Hare & some invertebrates; barriers for protected species moving across the landscape - Water Vole and European Eel, Otter if present; road through major winter roost site for swans.</i>	9
	Option 5a	Loss of floodplain grassland (slightly larger area). Fragment large expanse of floodplain grazing marsh / ditches; <i>impact of roads on breeding birds, Hare & some invertebrates; barriers for protected species moving across the landscape - Water Vole and European Eel, Otter if present; road through major winter roost site for swans.</i>	9
River corridor (HPI)	Option 1	Small amount of habitat lost; some local disruption though there should be no long-term impact; <i>potential disruption to Otter if in area.</i>	0
	Option 3	Larger amount of habitat lost; <i>possible loss of rare plants; potential disruption to Otter if in area; impact of additional bridge to low-flying species such as swans; bridge just to north of large area of reedbed important for birds.</i>	3
	Option 5a	Larger amount of habitat lost; <i>possible loss of rare plants; potential disruption to Otter if in area; impact of additional bridge to low-flying species such as swans; bridge just to north of large area of reedbed important for birds.</i>	3
Hedgerows & ancient shaws (HPI)	Option 1	Loss of scrubby, very gappy hedgerow along A27 and 5 short gappy hedgerows / scrub lines.	3
	Option 3	Cuts through 1 gappy field hedge and 4 roadside hedges - Ford Road / Tortington Lane – <i>impact on breeding birds and Tortington Lane hedgerows serving as wildlife corridor from woodland - reptiles, amphibians, Hedgehog and possibly bats.</i>	6
	Option 5a	Cuts 5 hedges as above; also 3 species rich / 'important' hedgerows along the west side of Binsted Woods Complex and 3 ancient shaws radiating from the south – <i>impact breeding birds (including Nightingale in shaws), corridors for bats, Dormouse (possibly breeding in shaws), reptiles, amphibians, hedgehogs, invertebrates across large landscape area.</i>	9

Habitat / species	Road Option	Impacts / explanation	Score
Chalk streams (HPI)	Option 1	None.	0
	Option 3	None.	0
	Option 5a	1st originates in Hundred House Copse - stream and spring fed. 2nd originates in Sandy Hole Pond (spring-fed). 1st is Binsted Rife - <i>supports lowland fen HPI / rare plants SxRSI, RDB / Water Vole / reptiles / amphibians / foraging bats / less common birds i.e. Snipe.</i>	9
Streams and ditches	Option 1	Only those associated with floodplain grassland.	0
	Option 3	1st feeds into the Madonna Pond, 2nd into Tortington Rife, 3rd appears to feed ponds in Tortington.	9
	Option 5a	Additional to chalk streams. 1st feeding into ponds, 2nd feeds into wet Woodland and Tortington Rife along with 3rd. 4th possibly ponds in Tortington 2nd, 3rd and 4th cut off lower than Option 3.	9
Ponds (some HPI)	Option 1	There may be a scrape or ephemeral pond lost.	3
	Option 3	Potential to lose a number of stream-fed ponds. Madonna pond, 2 ephemeral wet woodland ponds, ponds in Tortington. <i>Madonna Pond - 1000's Toads breeding.</i>	9
	Option 5a	Potential to lose 2 (possibly more) ponds in Binsted, 2 ephemeral wet woodland ponds and possibly some ponds in Tortington.	6
Veteran Trees (HPI)	Option 1	Quantity unknown. Possibly several along A27.	3
	Option 3	Likely many within Binsted Woods Complex.	9
	Option 5a	Exact locations not calculated but many veteran trees in Hundred House Copse, The Shaw and notable trees in The Lag.	9
Lowland fen / swamp (HPI)	Option 1	None.	0
	Option 3	None.	0
	Option 5a	Distinctive habitat important at County Level (in association with chalk stream) with very little fen left. Loss / degradation of habitat due to junction severing stream and interfering with geology.	9
Badger	Option 1	Possibly setts in woodland to north of A27. If present some possible sett disruption though not territories.	6
	Option 3	Possibly setts throughout centre of woodland. If present territories would likely extend across proposed road corridor.	6
	Option 5a	Sett in path of road; sett to north of road in area of woodland to be fragmented between 2 roads. Known territories traversing path of road.	9
Bats	Option 1	Barrier already in existence.	3
	Option 3	Barrier between known Bechstein bats' roosts; barrier stopping bat foraging; barrier to bat dispersal through woods - 13 spp. found including 2 Annex II species and Alcahoses (only known maternity roosts in 3 counties).	9
	Option 5a	Barrier between known Alcahoses' roosts; barrier between woodland blocks - main woodland and Hundred House Copse and main woodland and Lake Copse, The Shaw and The Lag (combined); barrier to bats coming from surrounding villages to forage in high quality woodland habitat i.e. Serotines from Barnham.	9
Birds - wetland	Option 1	A barrier across the floodplain grassland may negatively impact wintering wildfowl and breeding birds.	6
	Option 3	A barrier across the floodplain grassland may negatively impact wintering wildfowl and breeding birds; road through a major swan winter roost (200-300); bridge adjacent to large area of reedbed with potential to support Bittern.	9
	Option 5a	A barrier across the floodplain grassland may negatively impact wintering wildfowl and breeding birds; road through a major swan winter roost (200-300); bridge adjacent to large area of reedbed with potential to support Bittern.	9
Birds	Option 1	Removal of trees - woodland edge. Small loss of farmland.	3
	Option 3	Major disruption - carriageway through centre of deciduous / coniferous woodland. Larger loss of farmland.	9

Habitat / species	Road Option	Impacts / explanation	Score
Birds contd.	Option 5a	Major disruption - carriageway through 3 areas of woodland and ancient shaws. Largest loss of farmland.	9
Dormouse	Option 1	Some possible disturbance along edge of Dormouse breeding areas.	3
	Option 3	Destruction of woodland known to be Dormouse breeding habitat. Disruption of dispersal ability through woodland.	9
	Option 5a	Destruction of 2 areas of woodland known to support breeding Dormouse; isolation of two areas of known Dormouse breeding habitat from main population. Major barrier between large Dormouse population and ability to disperse across the landscape.	9
Reptiles	Option 1	Some destruction of habitat - possibly all 4 common species in area.	6
	Option 3	Destruction of greater area of habitat - possibly all 4 common species in area. Destruction of known good Adder habitat in Binsted Woods Complex.	6
	Option 5a	Destruction of habitat for all 4 species of common reptiles; barrier to dispersal from hibernation to foraging / breeding areas; loss of dispersal corridors across greater landscape.	9
Water Vole	Option 1	Major barrier across Water Vole habitat.	9
	Option 3	Major barrier across Water Vole habitat.	9
	Option 5a	Major barrier across Water Vole habitat.	9
Brown Hare	Option 1	Causes a barrier with a low number of fields.	3
	Option 3	Causes a barrier with a high number of fields – forced into smaller area; road casualties.	9
	Option 5a	Causes a barrier with a high number of fields – forced into smaller area; increased road casualties.	9
Common Toad	Option 1	May be breeding in some of the floodplain grassland ditches.	6
	Option 3	May be breeding in some of the floodplain grassland ditches; road through hibernation sites forming barrier to breeding sites; possible disruption of ditches feeding into the Madonna Pond and Tortington Rife which are two major breeding sites.	6
	Option 5a	May be breeding in some of the floodplain grassland ditches; forms a barrier between two major breeding sites; is adjacent to two major breeding sites therefore will have high number of mortalities during breeding season; forms a barrier between breeding and hibernation sites; possible disruption to ditch feeding into Tortington Rife. Loss of corridors across landscape.	9
Harvest Mouse	Option 1	Edge habitat available along river corridor and some ditches.	6
	Option 3	Edge habitat available along river corridor and some ditches / field edges; possible but not so likely in wayleaves in woodland.	6
	Option 5a	Known large area of habitat in marshy grassland to south of route and suitable habitat to north of route; major barrier to dispersal.	9
Hedgehog	Option 1	Small amount of habitat loss; some disruption to movement.	6
	Option 3	Major habitat loss; major barrier to movement through woodland and to fringing areas.	9
	Option 5a	Some habitat loss; major severance of foraging corridors; major severance to dispersal corridors across landscape.	9
Invertebrates	Option 1	Some removal of mature trees / dead wood; some loss of habitat.	3
	Option 3	Significant removal of mature trees / dead wood known to support rare beetles; loss of corridors across floodplain; loss of corridors through woodland.	6
	Option 5a	Significant removal of mature trees / dead wood known to support rare beetles; loss of wet woodland; loss / degradation of wetland; loss of much good quality 'edge' habitat; loss of corridors across floodplain; loss of corridors through woodland; loss of corridors across greater regional landscape.	9