A358 Taunton to Southfields Dualling Scheme

Preliminary Environmental Information Report - Appendix 3.1
Route Options - Stages 0-2

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3 Route options – PCF stages 0-2

3.1.1 This appendix provides further details of the alternatives explored during Project Control Framework (PCF) stages 0-2.

3.2 Stages 0 and 1 options appraised

3.2.1 A total of 28 options were originally identified as part of the options identification stage during PCF stage 1 in 2016 to ensure a broad range of alternatives were considered. These can be broadly classified as central, northern, or southern routes:

- Central: option 2, option 2/2A, option 2/2B, option 2A/2B, option 2D, option 2/2D (with single carriageway 'Henlade Bypass), option 2/2D (with dual carriageway 'Henlade Bypass), option 2A/2D (with single carriageway 'Henlade Bypass), option 2A/2D (with dual carriageway 'Henlade Bypass), option 3, option 7, option 8, option 8/8A, option 8/8B, option 8A/8B, option 9, option 13, and option 16.
- Northern: option 4, option 4/4A, option 11, option 11C, and option 12.
- Southern: option 1, option 1/1A, option 1/1B, option 14, and option 15.

Sifting of options

3.2.2 The 2016 PCF stage 1 sift was divided into two phases covering the five cases of the option assessment framework contained in Appendix A of *Transport Analysis Guidance – The Transport Appraisal Process* or 'WebTAG' [1]. In Phase 1, the alternatives were scored against the strategic case within *Early Assessment Sifting Tool* (EAST) [2]. At the end of this phase, two alternatives (options 3 and 16) were discounted due to having a significantly lower score than the others. Phase 2 measured the options against the economic, financial, managerial, and commercial aspects of EAST.

3.2.3 Phase 1 considered potential impacts on environmental constraints, including statutory environmental designations such as the Blackdown Hills Area of Outstanding Natural Beauty (AONB), nearby Sites of Special Scientific Interest (SSSI), Local Wildlife Sites (LWS) and Ancient Woodland. Phase 2 considered impacts of the alternatives on statutory and non-statutory environmental designations and on air quality, noise, the natural environment, heritage and landscape, and streetscape and urban environment.

3.2.4 The remaining 26 options demonstrated a wide spread of results following the Phase 2 sift. The highest scoring options were all similar in nature and it was considered that a broader range of solutions was required to take forward for further assessment. A list was compiled of features that were considered to be important, to include in the range of shortlisted options and these are set out in Table 3-1. This was based on how well the options met the scheme objectives. Four options were selected such that these features were contained within at least one option.

3.2.5 Following Phase 2, the four options recommended to be taken forward for further appraisal were options 1, 2/2D, 8A/8B and 13, which ranked 12th, 3rd, 5th and 4th respectively following the Phase 2 sift. These options were selected as important elements as detailed in Table 3-1 were contained in at least one option.

Table 3-1 Important features to be included in the shortlist

Feature	Why was this considered important
Fully off-line route	This would ensure that an option is considered that facilitates simple construction with minimal disruption of existing traffic flows on the existing A358.
Southern loop	This would lie roughly within the existing road corridor and provide an opportunity for re-use of the existing A358 corridor which is considered to comprise a suitable alignment for online widening.
Cross country at Rapps	This is considered to comprise a high speed, direct route.
Retention of Ashill Bypass	This would lie roughly within the existing road corridor and provide an opportunity for re-use of the existing A358 corridor which is considered to comprise a suitable alignment for online widening.
Retention of Hatch Beauchamp Bypass	This would lie roughly within the existing road corridor and provide an opportunity for re-use of the existing A358 corridor which is considered to comprise a suitable alignment for online widening. This would also provide the opportunity for retention of large bridge crossing (Griffin Lane).
A way of connecting to the M5 (all movements) that does not require the use of junction 25	This would ensure an option is considered in the shortlist that enables all traffic travelling between the new scheme and M5 motorway to be directed away from junction 25.
A separate Henlade Bypass	This would provide a way of managing all traffic travelling between the new scheme and M5 motorway and local traffic separately.
Route that passes through Stoke Road, Henlade	Route passes in a cutting reducing visual intrusion and noise effects.
A route that passes south of Stoke Road, Henlade	This would provide the opportunity to explore a corridor away from the Air Quality Management Area (AQMA) in Henlade.

3.2.6 The cost estimates for the four options to be taken forward were found to be significantly higher than those prepared for the Strategic Outline Business Case and for the strategy, shaping and prioritisation stage (PCF stage 0) Order of Magnitude Estimate (OME). Therefore, a further review was undertaken to identify rationalisations that could be introduced to the options without compromising the scheme objectives. Refinements were made to the four options including the removal of a free-flowing connection to the A303 Ilminster Bypass, a separate Henlade Bypass, using the Hatch Beauchamp Bypass to a greater degree, and rationalisation of the local road network. At this stage, option 13 was dropped as the rationalised version was no longer fundamentally different from option 8A/8B.

3.2.7 Alternative solutions were investigated that might alleviate congestion at junction 25 whilst providing a new route away from the AONB. The most viable of these was a new junction south of M5 junction 25 further north than option 1. A potential junction location in the vicinity of Killams Avenue was identified which could avoid direct impacts on a nearby property and would not require a southerly route. This location was found to be compatible with possible variations of option 2 or 8. An alternative version of option 8 was, therefore, developed to enable consideration of this alternative new junction providing an alternative to option 1 that would not raise the same environmental concerns. This new proposal was added to the shortlist and was called ‘option 8/8B+NFS’.

Shortlisted options

3.2.8 The resulting rationalised options recommended to be taken forward for further appraisal were:

- Option 1/1B + North Facing Slips (NFS)
- Option 2A/2B
- Option 8/8B+J25
- Option 8/8B+NFS

3.2.9 Overall, option 1 would have the greatest impact on the environment. Option 1 would have a highly significant impact on the landscape due to its proximity to the Blackdown Hills AONB. It would be more visible from the higher ground than the other options and would introduce a new road corridor in a tranquil area. Option 1 would also have a greater impact on biodiversity than the other options as it would have a Large Adverse effect on Thurlbear Wood and Quarrylands SSSI. Due to these environmental impacts, it was decided that option 1 should not be taken forward to public consultation in 2017.

3.2.10 The final three shortlisted options were as shown in Table 3-2. The options were renumbered to ensure they could be separately identified during the option appraisal process. Suffixes were used during the rationalisation process to distinguish between variations with a link to the north via the M5 junction 25 or via north facing slip roads directly onto the M5 (NFS). This numbering system was later amended again to reduce confusion and the three options renamed as the Pink, Blue and the Orange options.

Table 3-2 Final shortlisted options for PCF stage 1 assessment and reporting

Original option	Rationalised option reference	Revised option reference
2/2D	2A/2B	Pink
8A/8B	8/8B+Jct25	Blue
8A/8B	8/8B+NFS	Orange

3.3 Stage 2 Further assessment of selected options

3.3.1 In 2017, the Orange option was taken to initial public consultation by Highways England and was presented as the proposed route as it met the scheme brief and was the most affordable. The outcome identified some key areas of importance including the concern about the scheme's impact on the countryside and open space in light of the new motorway junction. A general request for further options to be considered was also made; therefore, Highways England further developed the three shortlisted route options (Pink/Blue/Orange) for presentation at the second public consultation in 2018.

- **The Pink option** commenced at a new junction on the M5 approximately 1.2 miles (2km) south of junction 25. South-facing slip roads from the M5 combined to become the new dual carriageway, which continues eastwards to the north of Stoke Hill. Here a limited-movement junction was proposed with east-facing slip road connections to the new road which would allow traffic to travel between the new A358 and junction 25 via a new 0.9 mile (1.5km) dual carriageway link past the planned Nexus 25 development site. The proposed route would then follow the existing A358 to Southfields roundabout enabling the existing road to be upgraded from a single to a dual carriageway. The total

length of the Pink option was 9 miles (14.6km), plus the 0.9 miles (1.5km) spur leading to the M5 junction 25.

- **The Blue option** commenced at the M5 approximately 1.2 miles (2km) south of junction 25 and runs eastwards on a more southerly alignment. At Stoke Hill a junction was proposed similar to that with the Pink option which would allow traffic to travel between the road and junction 25 via a new 1.2 miles (2km) dual carriageway link past the planned Nexus 25 development site. The road would then continue in a south easterly direction to West Hatch Lane, where an all-movement, grade-separated junction was proposed to allow access to Hatch Beauchamp, Henlade and surrounding communities, and the A378. This option was identical to the Pink option from this point onwards to Southfields roundabout. The total length of the Blue option was 8.7 miles (14.1km), plus the 1.2 miles (2km) spur leading to M5 junction 25.
- **The Orange option** commenced at the M5 approximately 2.1 miles (3.5km) south of junction 25 at a proposed new 2-bridge roundabout which would form a new all-movements junction between the new A358 and the motorway. The proposed road initially took a north-easterly course towards Henlade before arcing around the north of Stoke Hill. In contrast to the Blue option, there was no link to junction 25 from this location, and therefore no junction at Stoke Hill; this option was identical to the Blue option from this point onwards. The total length of the Orange option was 9.5 miles (15.3km).

Assessment of Pink, Blue and Orange options

3.3.2 The Pink, Blue and Orange options were subject to further traffic, economic and environmental assessment to help inform the preferred route option as detailed below.

Economic assessment

3.3.3 A Benefit to Cost Ratio (BCR) value was calculated for each of the options considered in the assessment. This is used to assess the value of a transport project by weighing the benefits against the costs to indicate whether it is value for money and considers a wide spectrum of impacts.

3.3.4 In April 2018, it was determined that the Pink option had the highest BCR of 1.43 despite being the most expensive option. This was compared to the Blue option BCR of 1.23 and the Orange option BCR of 0.97.

Traffic assessment

3.3.5 It was determined that all three route options would reduce traffic in Henlade in the opening year (2023) and design year (2038) at the time of assessment in 2018. The Pink option performed the best and was the most favourable, with an 89% reduction in traffic flows in both the opening and design years. All three route options would provide reduced journey times in the design year for both AM and PM peaks. The Pink option and Blue options performed the best, with the Orange option the least favourable in relation to traffic.

Environmental assessment and design

3.3.6 An environmental assessment was carried out for each route option to identify the environmental impacts and help inform the preferred route decision. Table 3-3 outlines a summary of the environmental effects anticipated for each of the options.

Table 3-3 Potential effects from PCF stage 2 options

Option	Conclusions of the PCF stage 2 environmental assessment
Do nothing	This comprises the baseline option against which the three options were compared. In essence the existing traffic and environmental issues experienced for the current road would occur, and in some cases, such as those associated with climate change, increase.
Pink	This option has the potential for Significant Adverse environmental effects however, it would have the least effect to ecology and landscape in comparison to the Blue and Orange options. There would be a Moderate Adverse effect to ecology during construction due to the loss of Road Verges West of Hatch Beauchamp LWS and part of Jordans LWS. There would also be a Moderate Adverse effect to ecology during operation due to the potential loss of veteran trees from Jordans LWS. This option is also expected to have a Moderate Adverse effect on bats during construction but is not anticipated to impact Ancient Woodland. For all options, a Slight Adverse effect is predicted on barn owls (*Tyto alba*), hazel dormice (*Muscardinus avellanarius*), badgers (*Meles meles*), otters (*Lutra lutra*), water voles (*Arvicola amphibius*), great crested newts (*Triturus cristatus*) and white-clawed crayfish (*Austropotamobius pallipes*) due to habitat loss and fragmentation. There would be Moderate Adverse effects to landscape and visual amenity during construction and impacts are the least for this option due to its proximity to the existing A358. Furthermore, although this option is anticipated to produce the greatest noise benefit along the existing route compared to the other two options, it is expected to expose the greatest number of new receptors to moderate or major noise increases in comparison to the Blue and Orange options. The construction of this option also has the potential have Large Adverse effect to the archaeological remains of a recorded Roman settlement and is anticipated to have a Large Adverse effect upon Grade II* listed ‘Musgrave Farmhouse and Outbuilding with wall adjoining south-east corner of Haydon House’. The alignment of this option is also anticipated to cause Slight Adverse effects to the water environment as it requires a permanent diversion of the River Ding. However, effects for all environmental aspects are likely to be lessened by the implementation of mitigation.
Blue	As with the Pink option, this option has the potential to cause significant environmental effects. This option is anticipated to have Large Adverse effects to ecology in comparison to the Pink option and the same effects as the Orange option due to the loss of Huish Copse East LWS, ancient woodland used by bats including two rare species (barbastelle (*Barbastella barbastellus*) and Bechstein's bat (*Myotis bechsteinii*)) during construction and operation. For all options, a Slight Adverse effect is predicted on barn owls, hazel dormice, badgers, otters, water voles, great crested newts and white-clawed crayfish due to habitat loss and fragmentation. There would also be Large Adverse effects to landscape and visual amenity during construction due to the larger distance between this option and the existing road in comparison with the closer Pink option and the intrusion on the countryside south and west of Henlade. It is also likely that this option (and the Orange option) would have significant effects due to the requirement for the partial removal of a Mineral Safeguarded Area (MSA) for building stone, where the Pink option is anticipated to avoid this completely. The construction of this option also has the potential to have a Large Adverse effect on the archaeological remains of a recorded Roman settlement and is anticipated to have a Moderate Adverse effect on one Grade I Listed Building (Church of St Aldhem and Eadburgha) and one Scheduled Monument (Cross in St Aldhelm and St Eadburgha) as with the other options and have a Large Adverse effect upon Grade II* listed ‘Henlade House and Outbuilding with wall adjoining south east corner of Haydon House’. It is also has the potential to effect a Grade II* listed Cross in St Aldhelm and St Eadburgha churchyard. This option is also expected to cause the greatest number of noise increases in the short-term but has a lessened effect compared to the Pink option but a larger effect compared to the Orange option. The alignment of this option is also anticipated to cause Slight Adverse effects to the water environment as it requires a permanent diversion of the River Ding. However, effects for all environmental aspects are likely to be lessened by the implementation of mitigation.
Orange	As with the Pink and Blue options, this option has the potential to cause significant environmental effects. This option is anticipated to have Large Adverse effects to ecology in comparison to the Pink option and the same effects as the Blue option due to the loss of

Option	Conclusions of the PCF stage 2 environmental assessment
	Huish Copse East LWS, ancient woodland used by two rare species of bat (barbastelle and Bechstein's bat) during construction and operation. For all options, a Slight Adverse effect is predicted on barn owls, hazel dormice, badgers, otters, water voles, great crested newts and white-clawed crayfish due to habitat loss and fragmentation. There would also be significant Large Adverse effects to landscape and visual amenity during construction due to the larger distance between this option and the existing road in comparison with the closer Pink option and the intrusion on the countryside south of Henlade and west of Stoke St Mary. It is also likely that this option (and the Blue option) would have the largest effects for materials due to the requirement for the partial removal of an MSA for building stone, where the Pink option is anticipated to avoid this completely. Furthermore, the alignment of this option is anticipated to cause Slight Adverse effects to the water environment as it requires a permanent diversion of the River Ding the Black Brook and is, therefore, expected to have the largest effect to the water environment in comparison to the Pink and Blue options. However, although the construction of this option has the potential to have a Moderate Adverse effect on one Grade I Listed Building (Church of St Aldhem and Eadburgha) and one scheduled monument (Cross in St Aldhelm and St Eadburgha) as with the other options and Grade II* listed 'Henlade House and Outbuilding with wall adjoining south east corner of Haydon House' in similarity to the Blue option. It is also has the potential to affect a Grade II* listed Cross in St Aldhelm and St Eadburgha churchyard. However, it is not anticipated to affect the archaeological remains of the nearby Roman settlement and would cause the least predicted effects to heritage in comparison to the Pink and Blue options. This option is also expected to cause the smallest number of significant effects in relation to the exposure of receptors to increased noise. However, effects for all environmental aspects are likely to be lessened by the implementation of mitigation.

Similar environmental effects

3.3.7 All three options were expected to have the same effects on air quality due to the production of construction dust and vehicle emissions (nitrogen dioxide (NO_2)) during the operational phase. Effects on air quality on human health and designated ecological site receptors were predicted to be Slight Adverse. Effects were predicted to be not significant during construction and operation of all three options. All options are expected to have both beneficial and adverse effects to population and human health, where both types of effect are expected to be the same for all options. All three options are not expected to cause significant effects to, or be vulnerable to, changes in climate. All three options are also expected to cause a slight increase in greenhouse gas (GHG) emissions due to an increase in journey length, although journey times are shorter.

Residual combined effects

3.3.8 The residual combined effect during construction and operation for the Pink, Blue and Orange options is anticipated to be Not Significant Adverse, and therefore residual combined effects were considered not significant.

Residual cumulative effects

3.3.9 Construction of all three route options were considered to cause Significant Adverse effects to the cultural heritage, landscape and the biodiversity of junction 25 of the M5 verges, Nexus 25, Land at Coldharbour Farm and Killams Drive. No other effects were considered significant.

3.3.10 Although operation of all three route options were considered to cause Significant Adverse effects to all three schemes to the cultural heritage, landscape and biodiversity of junction 25 of the M5, Nexus 25, Land at Coldharbour Farm and

Killams Drive, overall, operational effects were deemed to be Not Significant Adverse.

Further options considered following 2018 consultation

3.3.11 As a result of the 2018 consultation three alternative route options were proposed by the public and a Parish Council, a brief description is provided below:

- A combination route with elements from the original Pink and Orange options (**Pink/Orange**) – would be approximately 16km long between the M5 and Southfields roundabout connections. It would include an additional 1.5km dual carriageway link between the proposed dual carriageway and junction 25 of the M5.
- A combination route with elements from the Blue and Orange options (**Blue/Orange**) – would be approximately 15.3km long between the M5 and Southfields roundabout connections. It would include an additional 2km dual carriageway link between the proposed dual carriageway and junction 25 of the M5.
- Ruishton and Henlade Parish Council proposed an option (named the **Green option**) – this contained elements of the Pink and Orange options, with a novel element between the A358/A378 junction at Mattock's Tree Green and coarsely follows the same corridor as the other three options. There would be three junctions along Section 1 comprising Junction F (Killams), Junction D (Henlade) and Junction C (Mattock's Tree Green).

Method used to identify the preferred route option

3.3.12 The methodology employed to appraise the Pink, Blue and Orange options from the 2018 consultation plus the three alternatives identified by consultees was based on the elimination process outlined in the *Design Manual for Roads and Bridges* (DMRB) and comparing option in pairs against the main categories of the Appraisal Summary Table (AST). The option with the least number of significant advantages was eliminated. The remining option was taken forward for comparison with the next option.

3.3.13 The Pink option performed significantly better than the Blue and Orange options in the elimination process in terms of economics and landscape and was the most favourable option. All other options were compared to the Pink option to establish if the options identified as part of the consultation process offered benefits greater than the best performing option (Pink). A summary of the conclusions of this appraisal is provided in Table 3-4.

Table 3-4 Potential impacts from PCF stage 2 additional consultation options

Option	Key conclusions of the PCF stage 2 environmental scheme report
Pink	The Pink option would be the least expensive of all the schemes costing £521m (million pounds) and has the highest BCR of 1.43. This option was estimated to cause a Moderate Adverse impact to the landscape, which would cause the least level of impact of the options. In relation to air quality, this option would reduce NO_2 by 1005.9 and particulate matter (PM_{10}) by 356.5 and lead to the removal of Henlade AQMA. Traffic would also be reduced by 91%. Noise impacts were estimated at a net disbenefit of -£2.3m and GHGs (change in carbon over 60 years) were estimated at -£25.880m. This option also avoids Huish Copse Ancient Woodland with Neutral severance.
Blue/Orange	The Blue/Orange option would be more expensive than the Pink option costing £534.1m with a lower BCR of 1.10. This option was anticipated to have a Large Adverse impact to

Option	Key conclusions of the PCF stage 2 environmental scheme report
	the landscape. This option would cost more in relation to air quality compared to the Pink option (£0.8m compared to £0.3m respectively). This option would perform better in relation to noise costs with a net benefit of £0.6m compared to the net disbenefit of the Pink option. This option shows a smaller cost in relation to GHGs (-£24.189m) but a smaller reduction in traffic (-77%) compared to the Pink option. This option would cause permanent loss of Ancient Woodland at Huish Copse and would cause Slight Adverse severance.
Pink/Orange	The Pink/Orange option would be more expensive than the Pink option costing £533m with a lower BCR of 1.28. This option was anticipated to have a Large Adverse impact on the landscape. This option would perform marginally better than the Pink option in relation to air quality (£0.6m compared to £0.3m respectively) and noise (with a net benefit of £0.2m). This option shows a higher cost in relation to GHGs (-£28.2m) and a smaller reduction in traffic (-90%) compared to the Pink option. This option would avoid Huish Copse Ancient Woodland but would cause Slight Adverse severance.
Green	The Green option would be more expensive than the Pink option costing £550m with a lower BCR of 1.20. This option was anticipated to have a Large Adverse impact on the landscape. This option would perform marginally better than the Pink option in relation to air quality (1069.7 reduction in NO_2 and 459.9 reduction in PM_{10}) and noise (with a net benefit of £0.5m). This option shows a higher cost in relation to GHGs (-£28.9m) and a smaller reduction in traffic (-87%) compared to the Pink option. This option would avoid Huish Copse Ancient Woodland but would cause Slight Adverse severance.

3.3.14 The Pink option performed significantly better than the Blue/Orange, Pink/Orange and Green options in terms of economics and landscape. All three options were more expensive than the Pink option and caused more significant environmental damage. Where these options did perform better than the Pink option, the differences were not considered to outweigh the economic and landscape advantages of the Pink option. Therefore, all three of the options identified by consultees at the 2018 consultation (i.e. Blue/Orange, Pink/Orange and Green) were not taken forward.

Development post-2018 consultation – Pink Modified option

3.3.15 All three options were within budget set for the scheme prior to the 2018 consultation. However, following this consultation, the proposed routes were re-costed to accommodate for further design developments, the change in the scheme delivery programme for the 2018 consultation and the delayed opening year for the scheme. Further scheme risks were also identified. This resulted in two of the proposed route options (Pink and Blue) exceeding the budget. Further work was therefore taken to review the updated costs and deliver a route option within the budget, whilst still in compliance with the UK government's *Road Investment Strategy* (RIS) [3] and second *Road Investment Strategy* (RIS2) [4] objectives.

3.3.16 The Pink option was the most expensive option, but as the best performing of the three options and the option attracting strongest support from the 2018 consultation, it was therefore trialled for modification to reduce the cost. Further modifications were therefore made to produce the '**Pink Modified'** option.

Description of the Pink Modified option

3.3.17 The Pink Modified option takes a similar route to the Pink option for the majority of the alignment. This option follows a single alignment to connect into the gyratory at the M5 junction 25 and would be approximately 13.6km in length between the M5 and Southfields roundabout connections. This option retains the bypass at

Henlade, connects with the A378 and connects directly to junction 25 on the M5. Additional assessment work on M5 junction 25 was also undertaken to develop the design and mitigate the impact to junction 25. Removing Junctions A and B and the new link road in-between delivers the right balance between the Scheme objectives and cost. It also responds to the public feedback concerning the impact that these junctions and the road in-between, might have on homes, public open space and the countryside.

Assessment of the Pink Modified option

3.3.18 The PCF stage 2 economic, traffic and environmental assessment of the Pink Modified option in comparison to the Pink, Blue and Orange options is summarised in Table 3-5.

Table 3-5 Economic, traffic and environmental assessment of PCF stage 2 Pink Modified option

Aspect	Pink Modified option
Economic assessment	
Affordability and BCR	Modifying the Pink option decreased the footprint of the works and reduced the area of land impacted by a new route, responding to concerns raised during the consultation about minimising the impact on the countryside. The removal of the link and junctions would also generate a more affordable option and increased the BCR due to the journey time reliability and wider economic benefits, resulting in the Pink Modified option the most affordable and viable option.
Traffic assessment	
Traffic improvement	The Pink Modified option would reduce traffic flows through Henlade by 88% in the opening year (2023) and design year (2038), similar to the Pink option (89%). This option also shows journey times improvements similar to the Pink option.
Environmental assessment	
Air Quality	The Pink Modified option is predicted to have the same effects to air quality as the other three options previously assessed.
Cultural heritage	The construction of the Pink Modified option has the potential have a Large Adverse effect to the archaeological remains of a recorded Roman settlement. This option is also considered to have a Moderate Adverse effect upon one Grade I Listed Building (Church of St Aldhem and Eadburgha) and one Scheduled Monument (Cross in St Aldhelm and St Eadburgha). Large adverse effects upon Grade II listed 'Musgrave Farmhouse and Outbuilding with wall adjoining south-east corner of Haydon House' are also expected, as with the Pink option. This option also has the potential to affect a Grade II* listed Cross in St Aldhelm and St Eadburgha churchyard. The Pink Modified option has lower potential to affect archaeological remains in comparison with the Pink and Blue options as it requires the shortest length of new road construction, but still passes through areas containing possible high value Roman remains, where the Orange option does not.
Landscape	For the Pink Modified option, there would also be Large Adverse construction effects and Moderate Adverse long-term effects during operation to landscape and visual amenity. However, similar to the Pink option, effects are the least for this option due to its proximity to the existing A358. The offline section of Pink Modified would also be situated closer to the existing A358 than all other options, causing slightly less visual disturbance.
Ecology	There would likely be a Moderate Adverse effect to ecology during construction of the Pink Modified option due to the loss of Road Verges West of Hatch Beauchamp LWS, part of Jordans LWS and the potential loss of veteran trees from Jordans LWS. A Slight Adverse effect is also predicted on Bickenhall Wood LWS, Saltfield Copse LWS and River Rag LWS for the Pink Modified option, where the other

Aspect	Pink Modified option
	options are not expected to cause effects. The Pink Modified option would be at a sufficient distance to not affect Stoke Wood LWS and Ancient Woodland, resulting in a Neutral effect during construction. This option is also expected to have a Moderate Adverse effect on bats and a Slight Adverse effect on Ancient Woodland as with the Pink option but less effect than the Blue and Orange options. For all options, a Slight Adverse effect is predicted on barn owls, dormice, badgers, otters, water voles, great crested newts and white-clawed crayfish due to habitat loss and fragmentation.
Noise and vibration	The Pink Modified option performs the best of the four options in relation to noise but is still expected to cause significant adverse and beneficial effects at different receptors. It is anticipated to produce the greatest number of short-term noise decreases, the least number of effected receptors and the greatest noise benefit compared to the other three options.
Population and health	For construction, the Pink Modified option is not likely to cause significant effects to population and health, however, during operation, this option is expected to have the least benefits of all the options. However, this option does not directly impact open space.
Drainage and the water environment	The Pink Modified option is expected to cause Slight Adverse effects to the water environment as it requires a permanent diversion of the River Ding. The lack of a link to Blackbrook in the design for the Pink Modified option means that the effects on the water environment would be reduced slightly compared to the other options.
Climate change	The Pink Modified option is predicted to have the same effects to climate as the other three options previously assessed.
Summary	Overall, the Pink Modified option would have a similar impact to most aspects as the Pink option, and lower effects in comparison to the Blue and Orange options.

3.4 Justification for chosen option

3.4.1 The Pink Modified option meets the proposed scheme objectives, was more affordable and reduces the impact on the countryside. The scheme objectives are met as follows:

- **Employment** – The Pink Modified option provides direct access to Nexus 25 from the east, as well as connecting to the A378. This would help Taunton to become a more attractive place to work and do business by the local population and helps facilitate growth in Somerset and the South-West and along the A303/A358/A30 corridor.
- **Housing** – The Pink Modified option will facilitate growth in housing at key development hotspots along the corridor.
- **Capacity** – The Pink Modified option would provide relief to the traffic congestion in Henlade. The average daily traffic would reduce from 33,500 vehicles to 4,000 vehicles in 2038. By reducing congestion and increasing capacity it would allow mile-a-minute travel as the norm along the new A358.
- **Resilience** – The new road offers connection between the new A358, Nexus 25 development and M5 junction 25. This will help reduce congestion between West Hatch and M5 junction 25.
- **Safety** – The new A358 would see the existing road junctions and private accesses closed with new connections and junctions provided, making journeys safer by avoiding conflicting traffic-turning movements. The scheme would also improve safety by encouraging road users to use the new A358, rather than seeking alternative local routes to avoid congestion into Taunton. Existing walking, cycling and horse-riding provision would also be enhanced and improved.

- **Connectivity** – Connectivity to the South-West from the South-East and London would be improved, making Taunton and the South-West region more accessible. Daily travel for commuters and local traffic into Taunton would be safer and more reliable, by separating local movements from traffic passing through the area.
- **Environment** – The Pink Modified option avoids the Ancient Woodland at Huish Copse and at Stoke Wood and removes the need to impact the open space.
- **Severance** – The Pink Modified option would provide new connections to the A358, providing safer replacement routes for local communities. Existing walking, cycling and horse-riding provision would also be enhanced and improved.
- **Quality of life** – The Pink Modified option would allow local traffic using the A378 to connect with the upgraded A358 at Mattock's Tree Green junction, improving local journeys into Taunton. The reduction in traffic congestion at Henlade would improve residents' quality of life.

3.4.2 The Pink Modified option was, therefore, announced in June 2019 as the preferred route to be taken forward for PCF stage 3 as it meets the scheme objectives, is more affordable and reduces the impact on the countryside.

Abbreviations List

Please refer to PEI Report Chapter 17 Abbreviations.

Glossary

Please refer to PEI Report Chapter 18 Glossary.

References

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