A358 Taunton to Southfields Dualling Scheme

Technical Traffic Note

HE551508-ARP-GEN-ZZ-RP-TR-000006

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1 Introduction

1.1.1 This document gives an overview of the work carried out by National Highways to assess the impact of the A358 Taunton to Southfields Dualling Scheme on both the local and strategic road network.

1.1.2 This note is an update to the A358 Technical Traffic Note that was published for the statutory consultation in October and November 2021. Since then the proposed scheme design has been developed further to take account of feedback received at statutory consultation. These design changes, which are summarised in chapter 6, benefit local connectivity and accessibility and reduce the proposed scheme's impact on nearby communities.

1.1.3 This A358 Technical Traffic Note gives an explanation of the traffic modelling and provides information on how the A358 Taunton to Southfields Dualling Scheme traffic model has been developed.

1.1.4 It also includes information about:

- how the traffic flows and journey times in the traffic model compare to observed conditions (section 4)
- which roads local to the proposed scheme are included in the traffic model (section 5)
- how scheme design elements that impact on traffic have evolved since statutory consultation in 2021 and what those traffic impacts are (section 6)
- projected future traffic flows on roads local to the proposed scheme and journey times using the A358 with and without the proposed scheme in place (section 7)
- how the A358 and associated junctions are able to cater for traffic flows with the proposed scheme in place (section 8)
- the accident record on the existing road and the impact of the proposed scheme on this (section 9)
- the impact of Covid-19 on traffic (section 10)
- the impact of the proposed scheme on traffic flows on the local road network (section 11)
- the impact of the proposed scheme on vehicles routeing through the local road network (section 12)
- proposed mitigation measures on the local road network (section 13)

1.1.5 Some sections of this note compare the impact of the latest proposed scheme design to the scheme design that was proposed at the time of the statutory consultation in 2021 in order to illustrate how the evolved scheme design has changed traffic movements. Feedback from the 2021 consultation also asked for clarity on how our proposals would impact journeys on local roads, so we are taking this opportunity to provide that information in this note.

1.1.6 More information on traffic modelling and impacts of the A358 Taunton to Southfields Dualling Scheme on the road network will be documented in a Combined Modelling and Appraisal (ComMA) Report. A ComMA report for the current stage of work (preliminary design) is due to be drafted in 2022 once the preliminary scheme design that will form the basis for the Development Consent Order (DCO) application to the Planning Inspectorate has been finalised.

2 Explanation of traffic modelling

2.1.1 Traffic modelling plays an important role in helping us understand the impact of proposed changes to the road network. The modelling process is used to forecast how traffic flows and journey times change over time. Traffic models are normally constructed to understand typical conditions on an 'average' weekday. A traffic model, like all models, is a simplified representation of what happens on the network day to day.

2.1.2 The traffic model that is used to assess the proposed scheme is updated throughout scheme development; the scheme is developed from concept stage through to construction, with a number of model updates in between. The model is enhanced as the proposed scheme progresses. Initially it is used to make high-level strategic decisions about the merits of the proposed scheme, then to sift through options to find a preferred solution to the problems identified, and then to develop the design for the preferred option.

2.1.3 Since the statutory consultation in 2021 the traffic model has been updated to reflect the latest proposed scheme design, which was amended following the feedback received from members of the public and stakeholders. This has had an impact on traffic flows forecast on some local roads as shown in chapter 11.

2.1.4 The traffic model outputs contain information about how traffic flows and journey times are forecast to change across the area affected by the proposed scheme. Model outputs can be converted to monetary values and these are used to determine how much economic benefit would result from the proposed scheme in order to inform a value for money assessment.

3 Process of developing a traffic model

3.1.1 The traffic model for the A358 Taunton to Southfields Dualling Scheme has been developed in accordance with guidance published by the government's Department for Transport. This sets out the processes expected to be followed and datasets to be used in developing a traffic model.

3.1.2 Broadly, the process can be summarised into three key steps:

- Traffic data collection and processing
- Creating a model of the existing situation
- Adjusting the model for what is forecast

3.1.3 The steps involved in developing the traffic model are explained in more detail below. It is important to note that the traffic model evolves as the proposed scheme design is progressed. As such, scheme development is an ongoing iterative process in which the traffic forecasts provide inputs to scheme design decisions, which in turn lead to the need to update the traffic model to understand the impacts of the latest design on traffic. This process continues until the scheme design has been finalised ahead of construction.

3.1.4 At this stage the design for the A358 Taunton to Southfields scheme is not yet fixed. It may change in response to feedback from this supplementary consultation, or as a result of ongoing discussion with Somerset County Council. The changes in each iteration of the proposed scheme design tend to get smaller as the scheme development process progresses because the scheme design focuses in more on aspects that do not have a direct impact on traffic as we approach the start of construction.

3.1.5 The first step in developing a traffic model is to create a base year model. A base year model attempts to replicate the road network conditions, traffic patterns, traffic volumes and journey times of a year where these factors have been observed. As such, observed data must be collected about trip patterns, traffic volumes and journey times of vehicles that travel on the existing road network for a certain year. This captures information about the amount of traffic that travels from and to each location represented within the traffic model, which is then analysed and processed into travel demand matrices representing the base year. Usually, separate travel demand matrices are derived for each modelled time period, for example the morning or evening peak.

3.1.6 Separately a virtual representation of the existing road network is developed. This captures key attributes associated with each section of road, such as how the roads are connected to each other, the speeds at which vehicles travel on different roads and the maximum amount of traffic throughput that each road is able to accommodate. Details of junctions, such as junction types, lane markings, and signal timings are also represented within the modelled road network.

3.1.7 The second step is to use the road network and "assign" the travel demand matrices to it to create a base year traffic "assignment" using specialist traffic modelling software. The assignment process determines which routes those undertaking individual trips would choose through the road network. The traffic modelling software runs through a series of numerical calculations that determine the best route through the road network for each trip that is recorded within the travel demand matrices. This takes into account the time, distance, and any additional costs for each route available.

3.1.8 The base year traffic assignment represents existing conditions and so can be validated; that is compared against other observed traffic counts and travel time data not used in the creation of the base model. There are certain targets that need to be met in order to demonstrate that a traffic model forms a robust representation of reality, which are set out within government guidance, and the model is adjusted until it represents observed conditions accurately enough for the current assessment purpose.

3.1.9 The third step is to use the specialist traffic modelling software to estimate what is generally likely to happen to traffic volumes and patterns in the future throughout Great Britain, alongside implementing any changes to the road network that are proposed by the A358 Taunton to Southfields Dualling Scheme, or by other schemes that are likely to be constructed by each of the forecast years represented in the traffic model.

3.1.10 Forecasting captures future development proposals, such as new housing or employment sites, which will alter trip patterns compared to those that were observed in the traffic data collected for the base year model. The Nexus 25 employment site is one example of a development proposal that has been included in the A358 Taunton to Southfields Dualling Scheme forecast traffic model to ensure that turning movements at the Nexus 25 junction align with likely future conditions. The Department for Transport guidance states that the overall forecast traffic growth across regions must be constrained to set growth levels, which consider projected changes in population, employment, housing, car ownership and trip rates.

3.1.11 Forecasting also includes other road improvements that are likely to go ahead within the future year networks, as these may change travel patterns or lead to increased traffic volumes passing through the A358 corridor. An example is the A303 Sparkford to Ilchester Dualling Scheme, for which construction is underway.

3.1.12 Two sets of network configurations are then created for all growth scenarios. One represents a road network without the proposed A358 Taunton to Southfields Dualling Scheme included and the other scenario includes the proposed new road. The difference between the two modelled scenarios, one without and one with the A358 Taunton to Southfields Dualling Scheme, allows the detailed impact that the proposed scheme would have on the A358 corridor and the surrounding road network to be examined.

3.1.13 Forecast traffic “assignments” are then created in the same way as the base model “assignments”; this time with the traffic in the forecast year travel demand matrices assigned to the future road networks in order to determine how all vehicles would route through the road network.

3.1.14 Data that informs the A358 Taunton to Southfields Dualling Scheme ‘base year’ traffic model described in paragraphs 3.1.5 and 3.1.6 was collected in 2015 and supplemented by additional surveys on local roads in 2017. The reason why this has not been updated during the current preliminary design stage of works is because this stage of works only started in 2020 when Covid-19 had already taken effect such that any new data collection would not have been representative of typical conditions. More information on the impact of Covid-19 on traffic can be found in Section 10.

3.1.15 While up to date traffic data would be beneficial to provide the most accurate picture of the latest conditions, the data that has been used to inform the

development of this traffic model is still representative of typical conditions. Following the lifting of Covid related restrictions observed traffic data suggests that traffic volumes grew to around pre-pandemic levels, with a number of small differences like a rise in the proportion of goods vehicle trips as noted in section 10 of this note.

3.1.16 Key changes that have occurred in the local area since 2015 are captured in the traffic model through inclusion of developments that have opened between 2015 and now and by including background traffic growth in accordance with the traffic growth data issued by the Department for Transport, as referred to in paragraph 3.1.10.

4 Model compared to reality

4.1.1 In order to compare the traffic model against reality a series of data collection exercises were undertaken before the model was created. These exercises captured data about trip patterns, traffic flows and journey times on the existing road network covered by the base model. This section sets out what data was collected. The model itself, and therefore the data collected, covers a much wider area than just the Taunton to Southfields section of the A358, as it needs to consider how drivers would choose their routes through the strategic road network (motorways and major A roads).

4.1.2 In total 385 traffic counts throughout the South West region of England have been used to inform the development of the traffic model. The spread of count locations is shown in Figure 4-1 below.

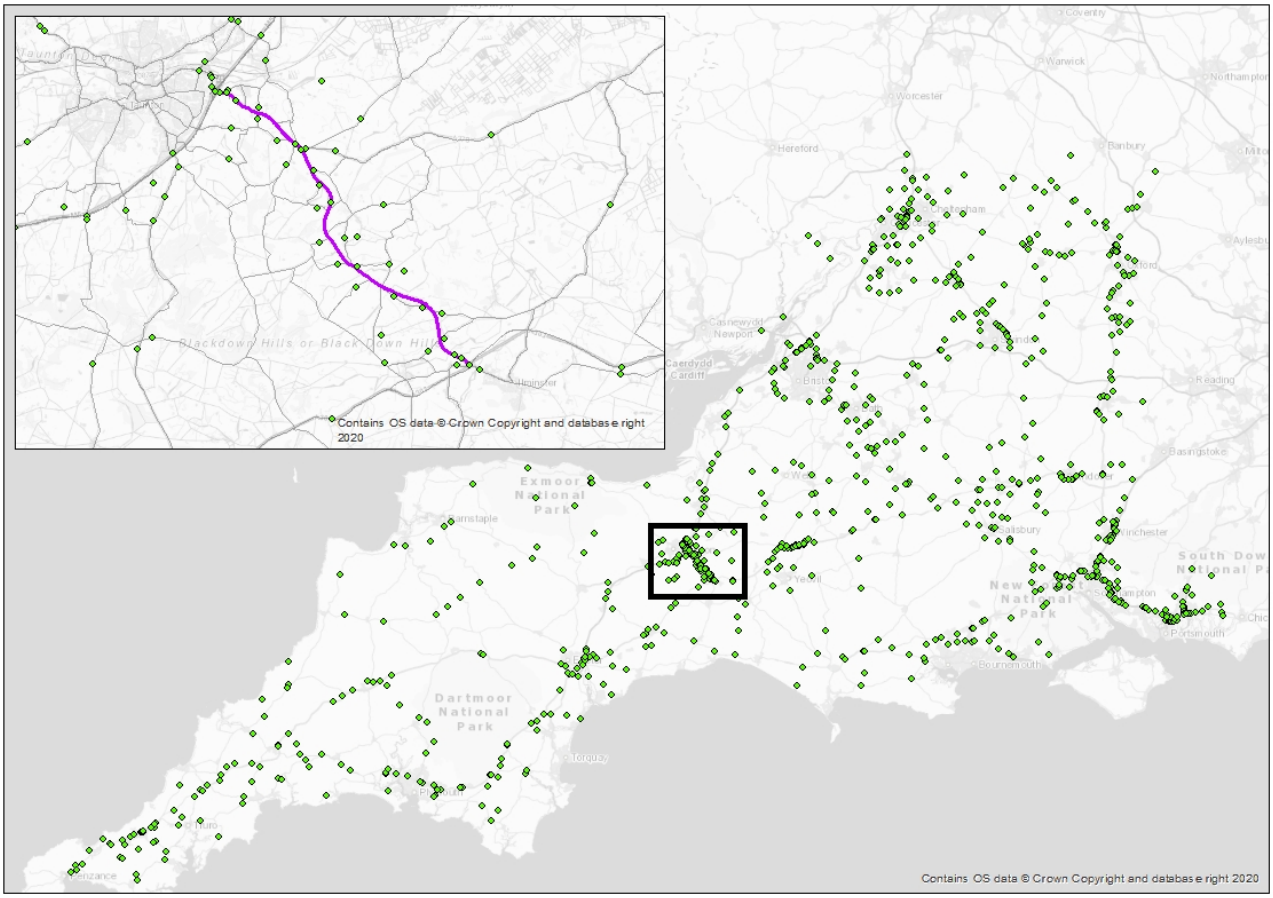


Figure 4-1 Traffic count data used in the traffic model

4.1.3 Government guidance sets out two metrics that need to be checked at each count location to determine whether the traffic volumes represented within the traffic model provide a sufficiently close match against observed traffic data to be deemed robust. Details of the metrics can be found in the transport analysis guidance about highway assignment modelling (TAG unit M3.1). Guidance states that 85% of counts should pass the metrics outlined in Table 2 of TAG unit M3.1, which is achieved in all models representing each time period in the A358 Taunton to Southfields Dualling Scheme traffic model.

4.1.4 Figure 4-2 provides a snapshot of how modelled and observed traffic volumes compare along and around the A358 corridor in the morning and evening peak.

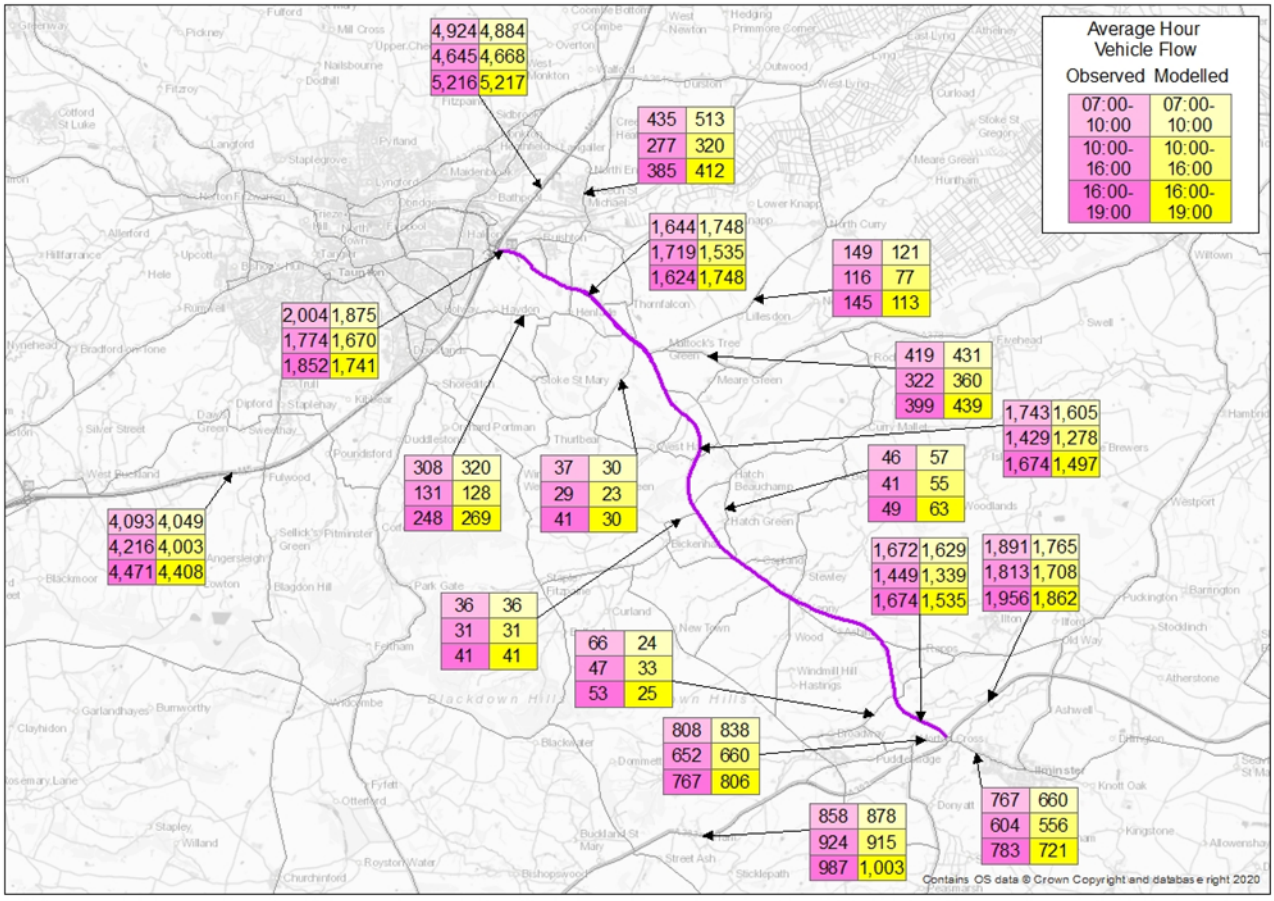


Figure 4-2 Modelled versus observed traffic flows

4.1.5 Journey times on 89 routes in the South West have been assessed to ensure that travel times represented within the traffic model provide a robust match against observed journey time data derived from in-vehicle satellite tracking data. All 89 journey time routes are shown in Figure 4-3. The inset focuses in on the area around the A358 corridor. Journey times along the A358 were assessed as part of a longer route between Williton, near the West Somerset coast, and Southfields roundabout. It also shows that journey times were separately assessed on a route along Greenway Lane and Haydon Lane, which is a popular local 'rat run' between the A358 and parts of Taunton.

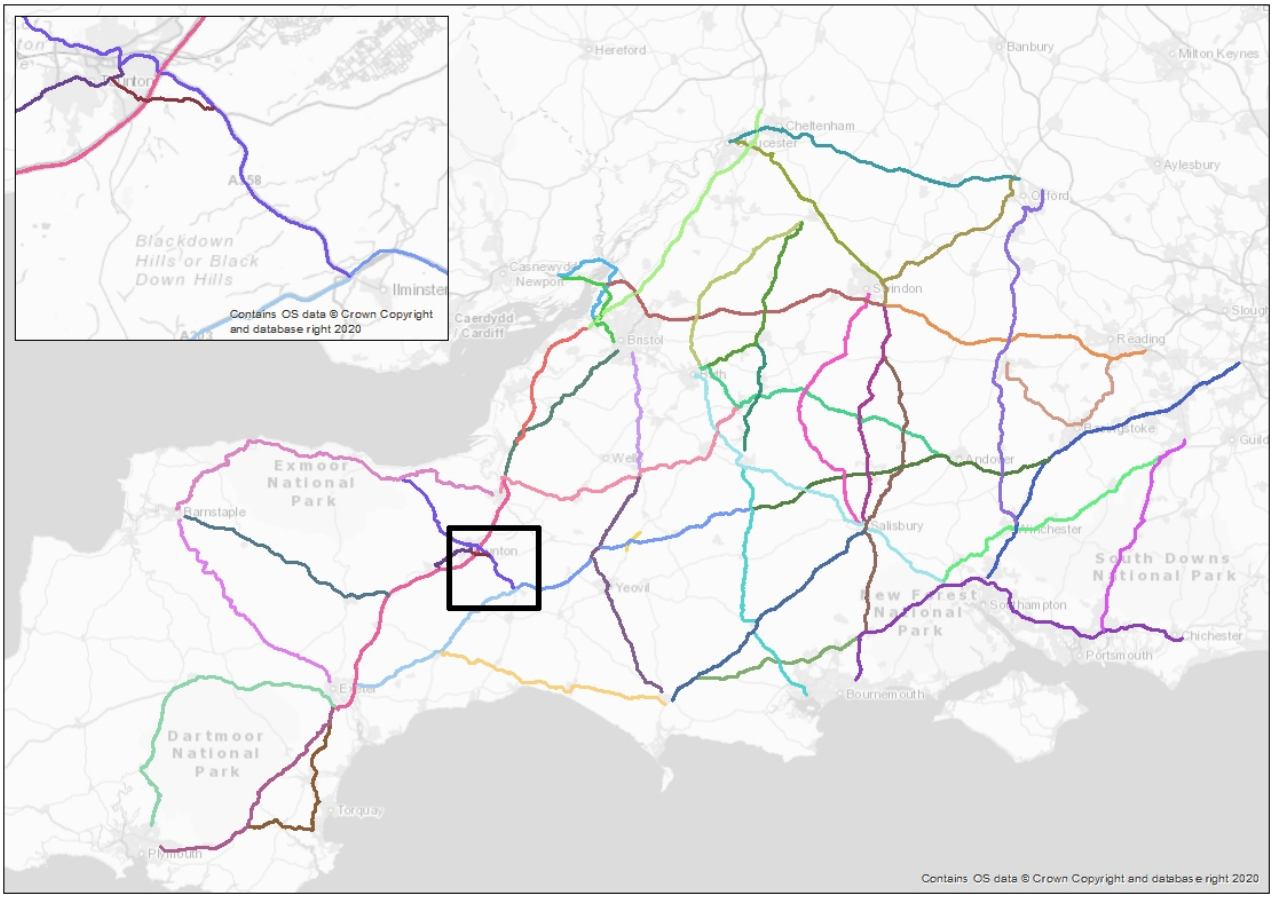


Figure 4-3 Journey time routes assessed in the traffic model

4.1.6 Transport analysis guidance sets out that modelled journey times should be within 15% of observed travel times for at least 85% of all journey time routes. This is achieved in all modelled time periods.

4.1.7 Table 4-1 below shows a comparison of observed and modelled journey times along the A358 between M5 junction 25 and Southfields roundabout. The accuracy of journey times along the A358 corridor is shown to be robust as the difference between modelled and observed times is within the 15% threshold defined in guidance in all time periods.

Table 4-1 Journey times on A358 between M5 junction 25 and Southfields roundabout in 2015

Time Period	Direction	Observed journey time	Modelled journey time	% Difference
Morning peak (07:00-10:00)	Eastbound	13 min 11 sec	13 min 53 sec	5%
	Westbound	13 min 05 sec	13 min 43 sec	5%
Inter-peak (10:00-16:00)	Eastbound	12 min 22 sec	13 min 05 sec	6%
	Westbound	12 min 04 sec	13 min 06 sec	9%
Evening peak (16:00-19:00)	Eastbound	12 min 53 sec	13 min 13 sec	3%
	Westbound	12 min 19 sec	13 min 27 sec	9%

5 Representation of local roads in the traffic model

5.1.1 National Highways have developed a set of regional traffic models covering the whole of England. These were developed to form a consistent set of models that could be used to assess large strategic road network changes.

5.1.2 The South West Regional Traffic Model has been used as the basis for the A358 Taunton to Southfields Dualling Scheme model. In keeping with its strategic function the South West Regional Traffic Model focuses primarily on the strategic road network with limited representation of local roads. For the purpose of assessing the A358 Taunton to Southfields Dualling Scheme the model has been enhanced to incorporate a number of local roads around the proposed scheme.

5.1.3 The proposed scheme would have an impact on traffic patterns and traffic volumes on the surrounding local road network as a result of junctions with the existing A358 being closed and additional capacity provided by the dualled A358. A detailed review of the local road network was undertaken to determine which parts of the local road network are likely to see changes in traffic flows as a result of the proposed scheme. A number of local roads along the A358 corridor were identified for inclusion in the traffic model in addition to those already in the South West Regional Model based on this review.

5.1.4 With the exception of Park Barn Lane, which provides access to a small number of local properties only, every local road that joins onto the A358 is now captured within the traffic model. The extent of the local road network around the A358 corridor included in the traffic model is shown in Figure 5-1 below.

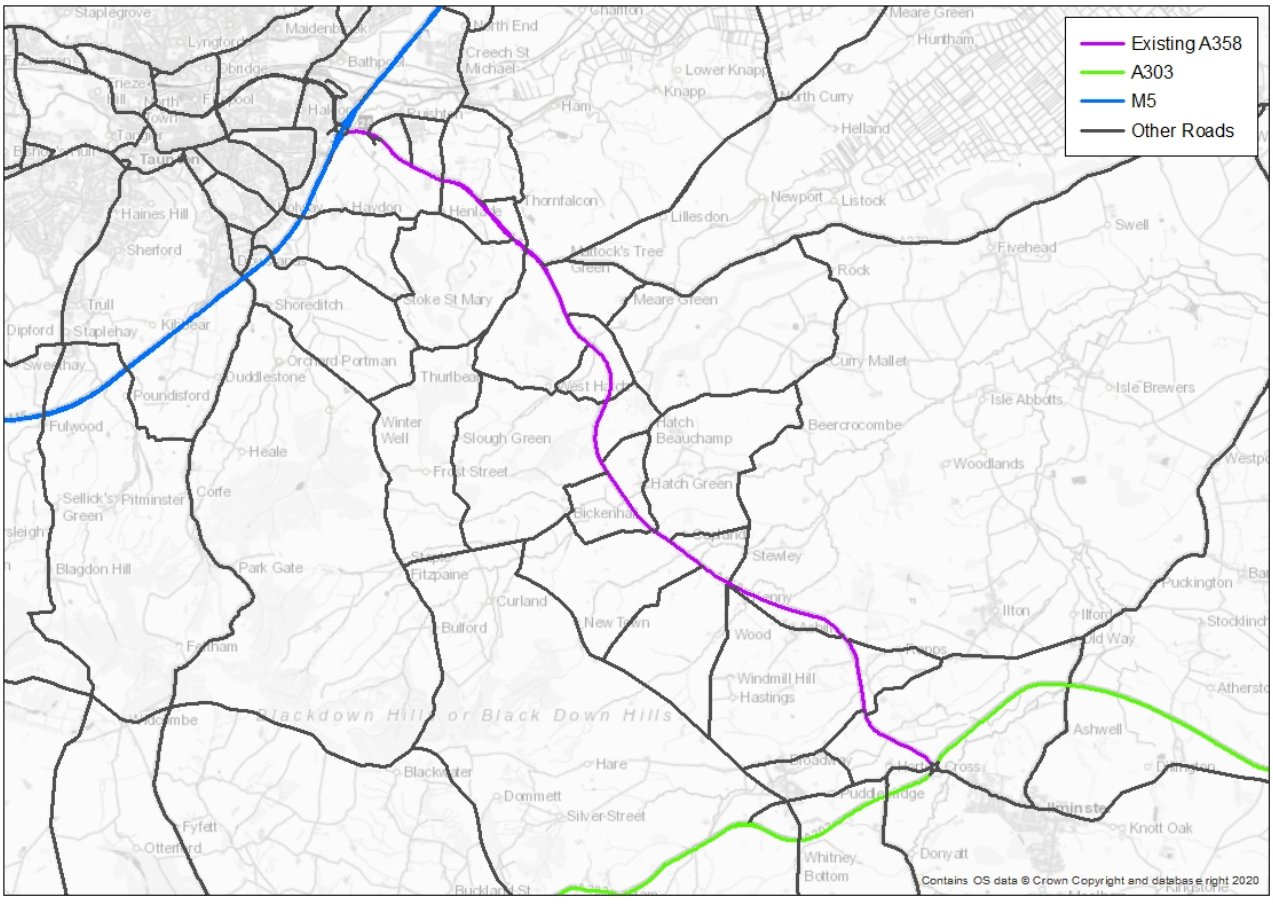


Figure 5-1 Road network around the A358 corridor represented in the traffic model

5.1.5 Somerset County Council are the highway authority for the local road network around the A358. The extent to which the local road network is included in the traffic model has been agreed with Somerset County Council.

5.1.6 A comprehensive set of traffic counts was used as input to the traffic model to ensure that traffic volumes, both on strategic and on local roads, are reflective of observed traffic volumes. The accuracy of traffic flows on a selection of local roads within the traffic model is shown in Figure 4-2.

6 Design changes since statutory consultation

6.1 Overview

6.1.1 National Highways have refined the proposed scheme design in response to feedback from the statutory consultation held during October and November 2021. The intent has been to improve the way drivers access the A358 and local roads, and to reduce potential traffic impacts on local communities. Key design changes since the statutory consultation that impact on the road network are summarised below. The impact that these design changes have on forecast traffic flows on the local road network is discussed in chapter 11.

6.1.2 The locations of the design changes discussed in this section are indicated by the labels shown with a red border in Figure 6-1.

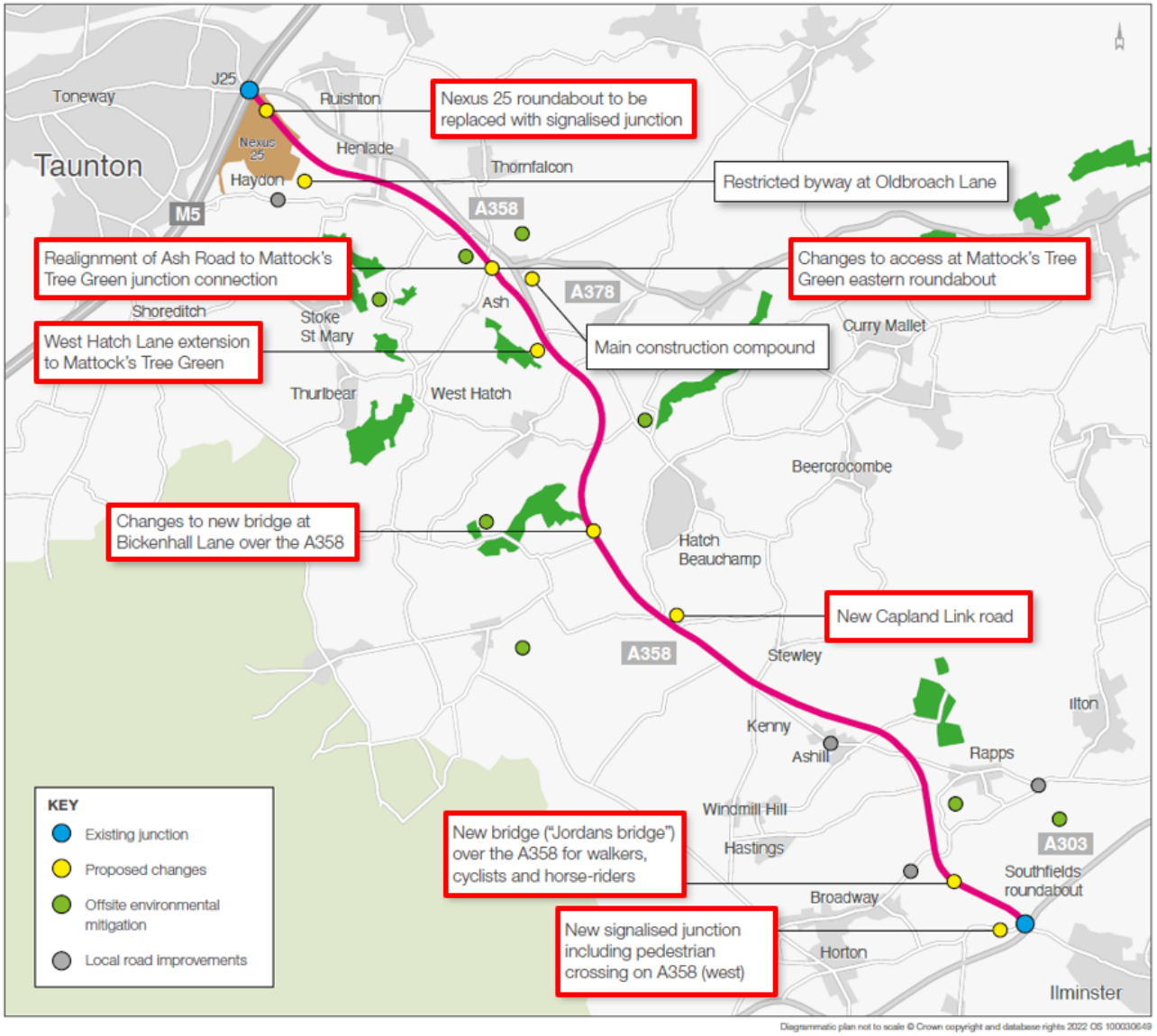
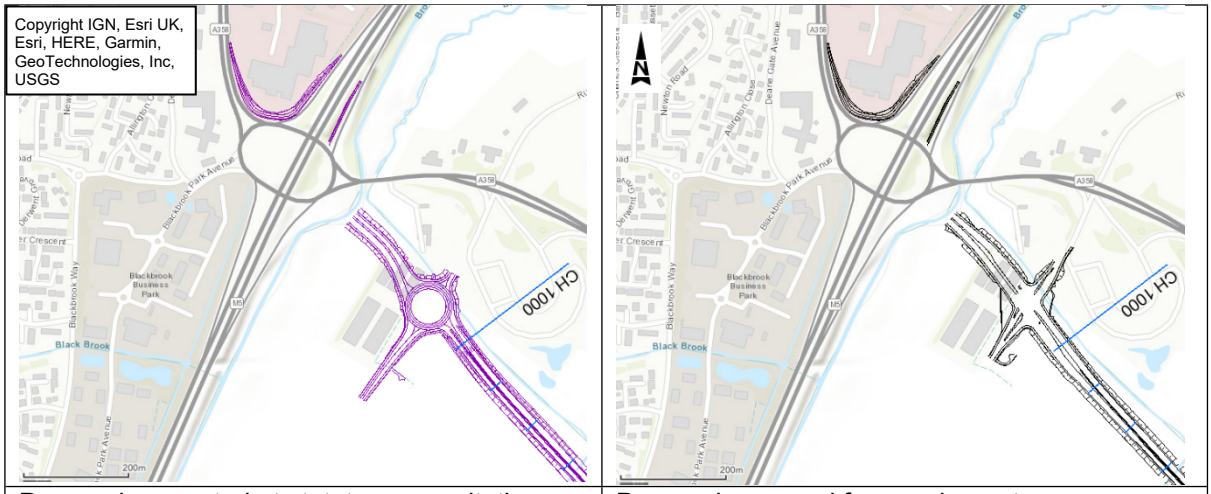


Figure 6-1 Location of design changes

6.2 Nexus 25 junction

6.2.1 The scheme presented at statutory consultation proposed enlargement of the existing Nexus 25 roundabout. It is now proposed to change the form of this junction to a signalised crossroads. This change is shown in Figure 6-2.



Proposal presented at statutory consultation – Amendment (enlargement) of the existing Nexus 25 roundabout.	Proposal prepared for supplementary consultation – Existing Nexus 25 roundabout replaced with a signalised crossroads junction.

Figure 6-2 Design changes at Nexus 25 junction

6.2.2 The Nexus 25 junction being signalised rather than an uncontrolled roundabout provides the ability to accommodate a safe pedestrian crossing across the A358 and to coordinate the operation of the signals with those at M5 junction 25. Linking the operation of the two junctions will reduce the potential for queuing between the two junctions.

6.2.3 One of the key differences between a signalised crossroads and a roundabout is that signals give more control over which movements receive priority. Signal timings can be amended by the controller to reflect actual traffic flows and address problems associated with queuing. Average delays associated with the signals are similar in scale to those experienced by drivers that would have negotiated the unsignalised roundabout in the previous design despite the additional pedestrian crossings across the A358 that have now been incorporated.

6.2.4 As shown in chapter 8 of this note, the signalised crossroads would operate within its practical capacity meaning that all traffic that arrives at the junction will be able to pass through the junction without experiencing excessive delays even during peak hours.

6.3 Ash Road tie-in to Mattock's Tree Green junction

6.3.1 The scheme presented at statutory consultation proposed taking a connection from the existing Ash Road directly into the western roundabout of the Mattock's Tree Green junction. This direct link was found, in the model, to make the route along Ash Road and Stoke Road through Stoke St Mary more attractive to through traffic. To discourage use by making the link less direct, Ash Road no longer directly connect into the Mattock's Tree Green junction and instead will now tie into the link road connecting Mattock's Tree Green junction with the

Somerset Progressive School (referred to as the Scout Camp link). This change is shown in Figure 6-3.

Proposal presented at statutory consultation – Ash Road linking directly into the western roundabout of Mattock's Tree Green junction.	Proposal prepared for supplementary consultation – Ash Road linking indirectly into the western roundabout of Mattock's Tree Green junction via Scout Camp link.

Figure 6-3 Design changes at Ash Road tie-in to Mattock's Tree Green

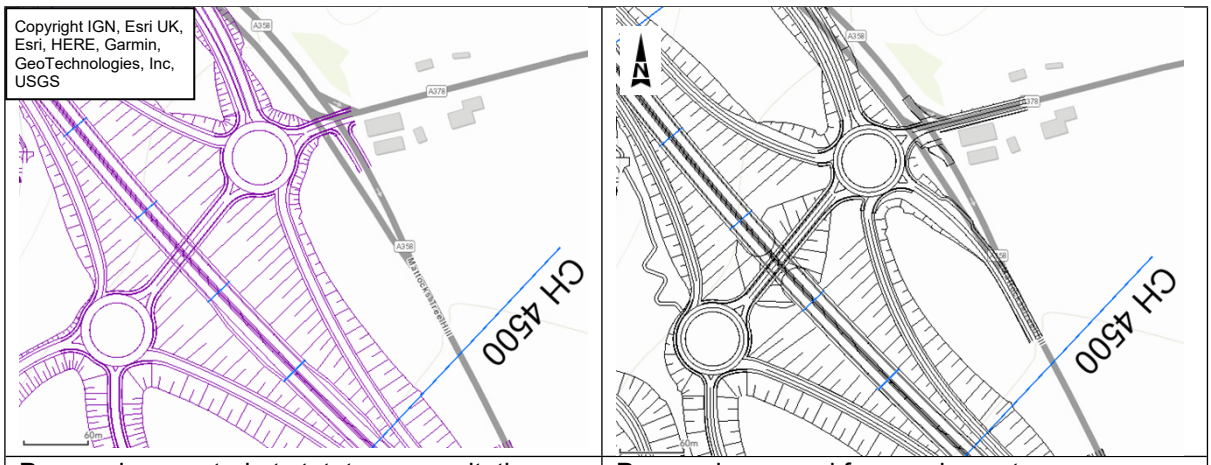
6.3.2 Traffic will still be able to access Ash Road from the Mattock's Tree Green junction via the Scout Camp link. Increasing the distance and time it takes to access Ash Road makes this route less attractive to traffic wanting to cut through to southern parts of Taunton. This change makes little difference to local traffic wanting to use this route.

6.3.3 The result of this design change is that forecast traffic flows along Ash Road and Stoke Road through Stoke St Mary will remain comparable to what they would be without the proposed scheme in place as shown in chapter 11. There will be an increase in traffic along Haydon Lane compared to the situation without the proposed scheme in place due to this change. Mitigation measures for Haydon Lane have been developed subject to input from Somerset County Council as noted in chapter 13.

6.4 Mattock's Tree Green eastern roundabout

6.4.1 The scheme presented at statutory consultation proposed Village Road (former A358) forming a T-junction with the A378. The proposed scheme has subsequently been revised to take Village Road directly into the Mattock's Tree Green junction eastern roundabout via an additional arm. This provides a direct connection onto Village Road and improves accessibility to Hatch Beauchamp and nearby communities. This change is shown in Figure 6-4 overleaf.

6.4.2 The reason for this change was that the Village Road junction was previously very close to the Mattock's Tree Green eastern roundabout, which was judged to be less safe than the new design due to the possibility of vehicles exiting the roundabout onto the A378 encountering stationary vehicles waiting to turn right onto Village Road. The design change also assists in providing the space to incorporate a signalised crossing across the A378 at the location of the existing Thornfalcon signals. This signalised crossing will form part of the offline cycle route along the proposed A358 scheme.

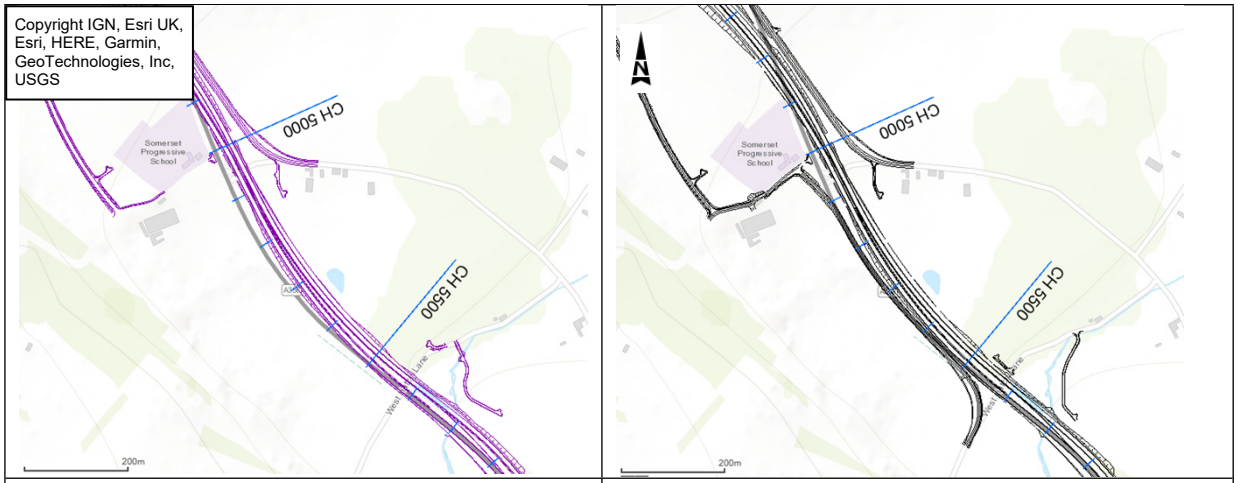


Proposal presented at statutory consultation – Village Road (former A358) forming a T-junction with the A378.	Proposal prepared for supplementary consultation – Village Road being taken directly into the Mattock's Tree Green junction eastern roundabout via a sixth arm.

Figure 6-4 Design changes at Mattock's Tree Green eastern roundabout

6.5 West Hatch Lane link to Mattock's Tree Green junction

6.5.1 A new public road link has been included in the proposed scheme design that will connect West Hatch Lane to Huish Woods. The road link runs alongside the A358 on the western side and provides a through link from West Hatch via the Scout Camp link for access to the Mattock's Tree Green junction. This change is shown in Figure 6-5.



Proposal presented at statutory consultation – No public link for motorised road users between Huish Woods Lane and West Hatch Lane.	Proposal prepared for supplementary consultation – Link provded for all road users between Huish Woods lane and West Hatch Lane.

Figure 6-5 Design changes at West Hatch Lane link to the Mattock's Tree Green

6.5.2 The design change allows vehicles accessing West Hatch to connect more directly to the A358 when compared to the scheme design presented at statutory consultation in October and November 2021. The previous design would have taken traffic accessing West Hatch via a longer route along Ash Road and Church Lane, which would have become even longer due to modifications to the Ash Road tie-in as outlined in section 6.3.

6.6 Bickenhall Lane overbridge

6.6.1 The scheme presented at statutory consultation proposed an overbridge over the A358 carrying Bickenhall Lane which would have been open to all road users. Following feedback received during the statutory consultation the proposed scheme makes this link only accessible to non-motorised users, such as walkers, cyclists or horse riders (WCH) and local landholders. Reflecting this use, tighter bends and a more sinuous alignment more closely following field boundaries has been adopted. The overbridge has also been relocated some 165m to the south. This change is shown in Figure 6-6.

Proposal presented at statutory consultation – Bickenhall Lane and overbridge open to all traffic.	Proposal prepared for supplementary consultation – Bickenhall Lane and overbridge restricted to farm traffic and non-motorised users. Overbridge moved 165m further south.

Figure 6-6 Design changes at Bickenhall Lane overbridge

6.6.2 The main reasons for this change were to reduce traffic passing through Hatch Beauchamp via Bickenhall Lane overbridge, and to reduce the impact of traffic on non-motorised users along Bickenhall Lane. Relocating the bridge moves the road and structure further away from the ancient woodland.

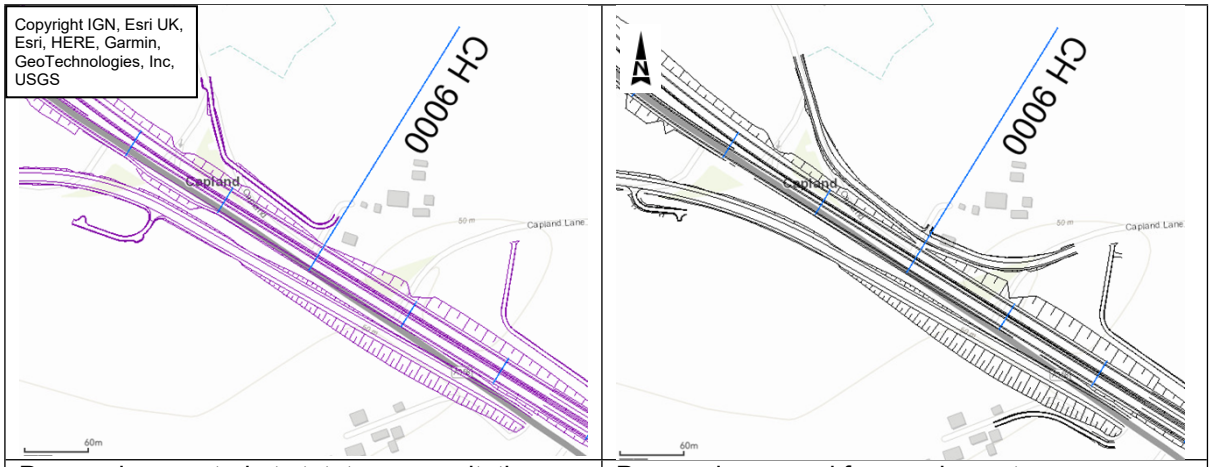
6.6.3 Local traffic from Curland, Bickenhall and Slough Green that was previously forecast to use this bridge now uses a route along Cold Road and Higher West Hatch Lane to access the Mattock's Tree Green junction. Hatch Beauchamp benefits from lower traffic volumes, while the additional traffic along Cold Road and West Hatch Lane is low enough to be considered as having a neutral impact as shown in chapter 11.

6.6.4 Trips that would have crossed Bickenhall Lane overbridge in the previous design in order to access communities on the eastern side of the A358 will be able to travel via Village Road overbridge to cross over the A358.

6.7 Capland link

6.7.1 The statutory consultation questionnaire included a specific question (question 3c) regarding the provision of Capland link or alternative measures to address localised flooding previously experienced on the local road network to the east of the proposed scheme. With the existing Capland Lane junction with the A358 being closed by the proposed scheme, the localised flooding could result in access to some dwellings being temporarily inaccessible by road during such conditions. The responses to the statutory consultation found in favour of

providing Capland link, and this is now included within the scheme presented at supplementary consultation. This change is shown in Figure 6-7.



Proposal presented at statutory consultation – Private access provided from Village Road to private dwelling, with no through route to Capland Lane.	Proposal prepared for supplementary consultation – Link provided between Village Road and Capland Lane.

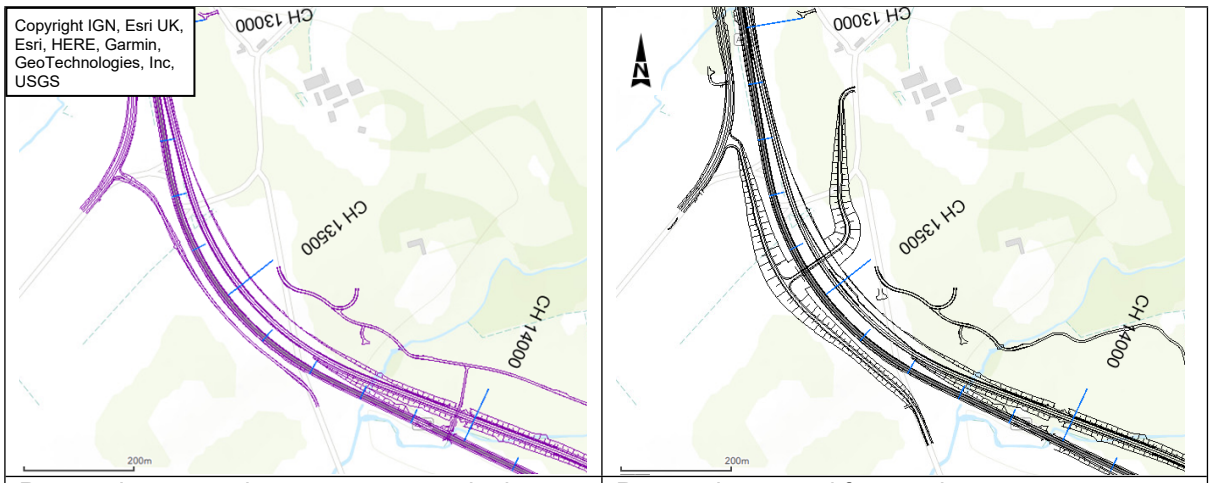
Figure 6-7 Design changes at Capland link

6.7.2 The amount of through traffic using Capland Lane would be negligible, and the additional link is to provide additional connectivity between settlements to the east of the A358 as well as local flood resilience.

6.8 Jordans overbridge

6.8.1 The scheme presented at statutory consultation proposed a crossing for non-motorised users, such as walkers, cyclists or horse riders, underneath the A358 at an improved River Ding underpass. This route was also proposed to be used by local landholders accessing land either side of the A358. Responses from the statutory consultation identified that the underpass would be unsuitable for non-motorised users. Feedback from directly affected landholders highlighted that the width and headroom of the underpass would not be sufficient for agricultural traffic resulting in it having to divert via the local road network. The scheme presented at supplementary consultation now includes a new overbridge for use by local non-motorised users and local landholders. This change is shown in Figure 6-8.

6.8.2 There will be negligible effect on traffic flows as the route will not be open to motorised public traffic.



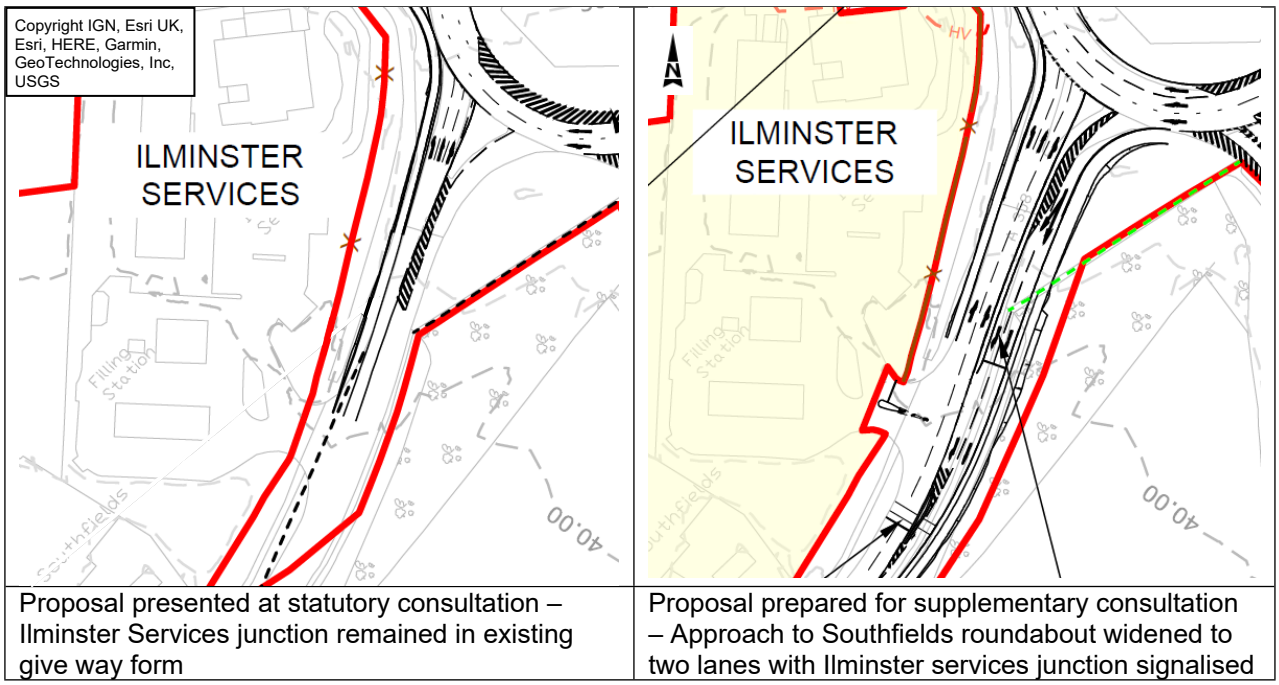
Proposal presented at statutory consultation – Crossing of A358 via River Ding underpass (limited width and headroom).	Proposal prepared for supplementary consultation – New overbridge provided over the A358 for agricultural and WCH use only.

Figure 6-8 Design changes at Jordans overbridge

6.9 New signalised junction on A358 (west) at Ilminster Services

6.9.1 The scheme presented at statutory consultation had one approach lane from the A358 (west) towards Southfields roundabout widening to three lanes in the vicinity of the give way line to the roundabout. The single lane section restricted the ability of drivers to effectively access the three available lanes at the roundabout. To improve this the proposed scheme now includes a two-lane approach from the A358 (west) to feed the three lanes at the give way line, which allows drivers to make more effective use of the three available lanes at the give way lane to Southfields roundabout. This increases the capacity of traffic that can access Southfields roundabout from the A358 (west).

6.9.2 As a result of the widening of the A358 (west) approach to Southfields roundabout, vehicles exiting Southfields roundabout onto the A358 (west) to turn right into Ilminster services would now cross two lanes of traffic instead of one. For safety reasons the junction at Ilminster Services is now converted to a signalised junction in the proposed scheme. This also allows the incorporation of a signal controlled crossing for pedestrians, cyclists and horse riders across the A358 (west).



Proposal presented at statutory consultation – Ilminster Services junction remained in existing give way form	Proposal prepared for supplementary consultation – Approach to Southfields roundabout widened to two lanes with Ilminster services junction signalised

Figure 6-9 Design changes at Ilminster Services junction

7 Forecast traffic flows and journey times

7.1.1 Traffic forecasts have been developed for the A358 Taunton to Southfields Dualling Scheme opening year (2028) and for a future year 15 years after opening (2043). Figure 7-1 shows a comparison of base year (2015) and forecast year annual average daily traffic flows, which represent two-way flows (the sum of the number of vehicles in each direction, where applicable). Traffic flows are presented in units of thousands of vehicles. Forecast year traffic flows are shown for the scenarios without the A358 dualling and with the A358 dualling included.

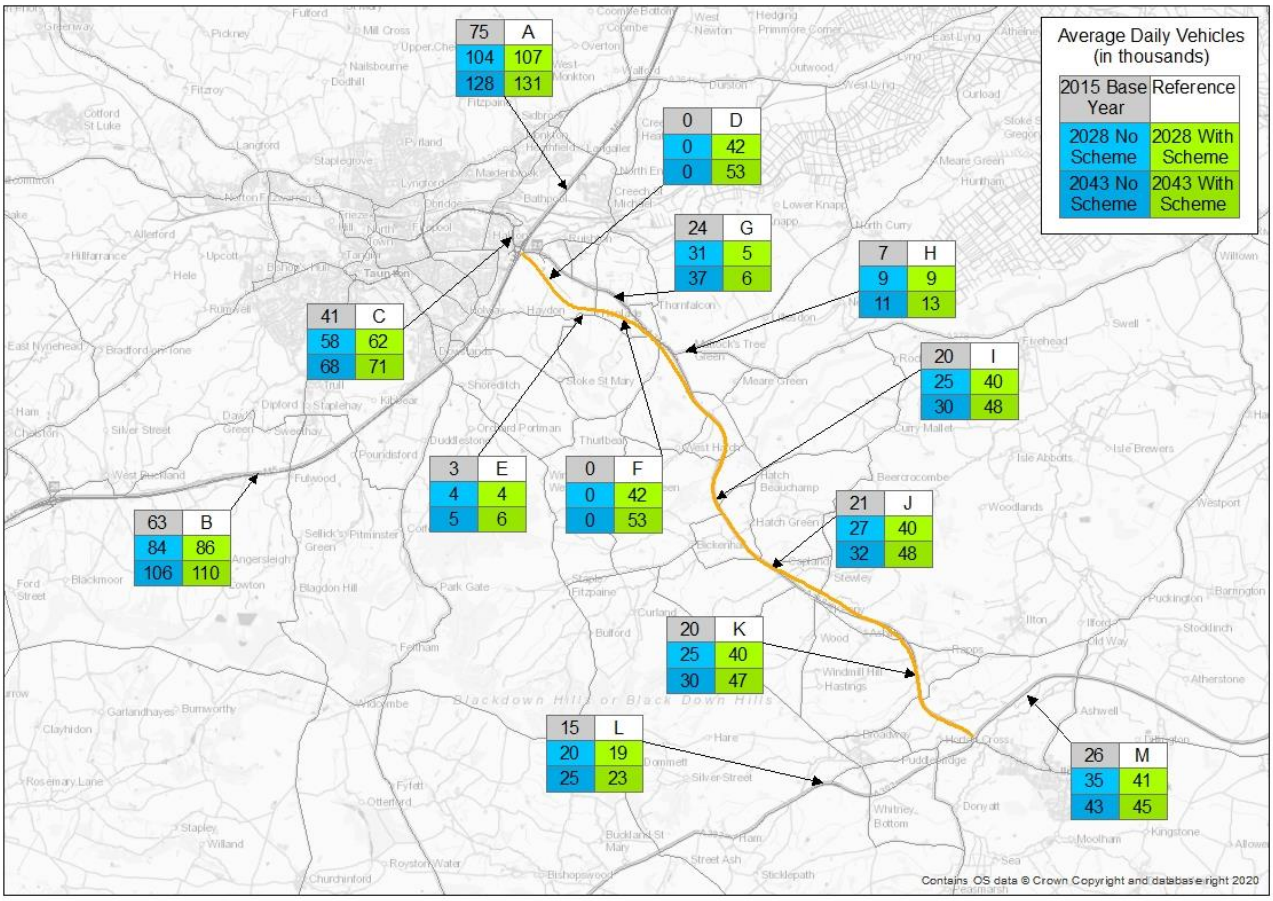


Figure 7-1 Daily traffic flows in the traffic model

7.1.2 The same traffic flow information as presented in Figure 7-1 can also be accessed online using our interactive traffic flow webmap. The benefit of this webmap is that forecast traffic flow information for any section of road that is included in the traffic model along or near the A358 corridor can be accessed interactively. Please follow the link in this document (by clicking on the underlined text) to access the webmap. Alternatively, the interactive traffic flow webmap can also be accessed directly from the Virtual Engage public consultation room for this supplementary consultation.

7.1.3 Forecast journey times along the A358 corridor between M5 junction 25 and Southfields roundabout are shown in Table 7-1. Journey time savings are forecast to be between approximately 5 minutes and 9 minutes depending on forecast year and time of day.

Table 7-1 Forecast journey times on A358 between M5 junction 25 and Southfields roundabout in 2028 and 2043

Time Period	Direction	Journey time without scheme	Journey time with scheme	Journey time saving
Year 2028				
Morning peak (07:00-10:00)	Eastbound	17 min 51 sec	11 min 21 sec	6 min 30 sec
	Westbound	16 min 08 sec	10 min 06 sec	6 min 02 sec
Inter-peak (10:00-16:00)	Eastbound	17 min 33 sec	11 min 09 sec	6 min 24 sec
	Westbound	15 min 11 sec	9 min 58 sec	5 min 13 sec
Evening peak (16:00-19:00)	Eastbound	17 min 39 sec	11 min 15 sec	6 min 24 sec
	Westbound	15 min 34 sec	10 min 04 sec	5 min 30 sec
Year 2043				
Morning peak (07:00-10:00)	Eastbound	19 min 18 sec	11 min 35 sec	7 min 43 sec
	Westbound	17 min 07 sec	10 min 14 sec	6 min 53 sec
Inter-peak (10:00-16:00)	Eastbound	18 min 23 sec	11 min 24 sec	6 min 59 sec
	Westbound	16 min 06 sec	10 min 07 sec	5 min 59 sec
Evening peak (16:00-19:00)	Eastbound	20 min 39 sec	11 min 27 sec	9 min 12 sec
	Westbound	16 min 23 sec	10 min 12 sec	6 min 11 sec

7.1.4 Further journey time information related to trips that start their journey at one of the many local communities along the A358 corridor can be accessed via our interactive trip route and journey time webmap, which is referred to in more detail in chapter 12.

8 Road and junction capacity

8.1 Overview of capacity of the A358 mainline between junctions

8.1.1 The maximum throughput of traffic that a road can cater for is referred to as its capacity. Factors that affect the capacity of a road include its width, speed limit, presence of on-street parking or pedestrian crossings and number of side roads or direct property accesses onto the road.

8.1.2 The capacity of the existing single carriageway sections of the A358 ranges from around 1,300 vehicles per hour to around 1,600 vehicles per hour in each direction. Through Henlade the capacity is at the lower end of this range and between the Thornfalcon signals and Southfields roundabout it is at the higher end.

8.1.3 Under current conditions traffic flows along the existing A358 single carriageway sections regularly exceed the capacity that the existing road was designed for. This leads to congestion, especially through Henlade, where existing local air quality is affected by emissions from the high volume of slow-moving vehicles that pass through the village. This will gradually worsen over time as traffic volumes increase in the area, due to factors such as population and employment growth, if the A358 Taunton to Southfields Dualling Scheme is not built.

8.1.4 Design standards set out that the new dual carriageway needs to be assessed against how it would perform 15 years after opening. The design for the new dual carriageway provides sufficient capacity to cater for up to 3,600 vehicles per hour per direction which would meet current and future traffic demand along the A358 corridor. Even during weekday peak hours the dual carriageway would operate at less than 60% of this capacity in 2043, which would provide free-flow conditions at all times of day.

8.2 Overview of capacity of junctions along the A358

8.2.1 The capacity of junctions along the route also needs to be considered alongside the mainline capacity. This is because junctions are the parts of the road network where there is the most conflict between traffic movements which restricts overall capacity along the route. Factors that affect the capacity of a junction include the junction type, geometry, and the number of lanes allowing each turning movement. In the case of signalised junctions the signal timings are also an important consideration.

8.2.2 Upgrades will be made to M5 junction 25, the Nexus 25 junction and Southfields roundabout as part of the A358 Taunton to Southfields Dualling Scheme. Details of these enhancements are shown on our proposed scheme drawings available as part of this supplementary consultation. This section of this note shows how these junctions would perform in the year 2043.

8.2.3 In the tables presenting the performance of junctions the term ‘delay’ expresses the additional average time required to cross the stop-line or give way line on entry to a junction when compared to a free-flowing situation during any part of the peak hour. In the case of a signalised junction there is always some delay, as we would never expect all vehicles to approach the junction during a green light, meaning some vehicles will have to wait for some portion of a red light phase.

8.2.4 The ratio of flow to capacity expresses how close traffic flows on each approach arm are to the available capacity. A junction that is forecast to operate at capacity would show 100%. Junctions are typically designed to operate below 90% in the case of signalised junctions and below 85% in the case of unsignalised junctions to allow for day-to-day variation in traffic flows and to avoid the likelihood of queues building up as the junctions approach capacity.

8.2.5 Junction design and testing is carried out for the typical weekday peak hours as these are the times when the junctions are normally at their busiest. For this proposed scheme we have also tested the junctions during estimated peak summer conditions as the patterns of the traffic flows can be different and this may put additional pressure on the junctions. The results presented in this section are based on a typical week outside of school holidays. Separate analysis of summer peak conditions has shown that the junctions would operate within their available capacity even during those busiest periods of the year.

8.3 M5 junction 25

8.3.1 At M5 junction 25 an unsignalised segregated left turn lane will be added from the A358 Toneway onto the M5 northbound on slip allowing traffic making this turning movement to bypass the roundabout. The southbound off slip will also be widened from three to four lanes at the signals for the roundabout. In addition, the signal timings around the roundabout will be optimised.

8.3.2 The improved layout of M5 junction 25 will operate within the available capacity of the junction in 2043, with some spare capacity even during peak hours as shown in Table 8-1.

Table 8-1 M5 junction 25 operational performance in 2043

Approach Arm to M5 junction 25	AM Peak		PM Peak	
	Ratio of flow to capacity	Delay (seconds)	Ratio of flow to capacity	Delay (seconds)
M5 southbound off slip	85%	45	72%	40
A358 southeast	87%	40	83%	20
M5 northbound off slip	88%	35	70%	25
Blackbrook Park Avenue	27%	20	58%	30
A358 northwest (Toneway)	85%	40	69%	30

8.4 Nexus 25 junction

8.4.1 It is proposed that the existing Nexus 25 roundabout will be converted to a signalised crossroads. This gives better control over the traffic between this junction and M5 junction 25 than would have been the case with an unsignalised roundabout. This junction type also provides an opportunity to include a crossing facility for non-motorised users across the A358 at road level, which would not be possible with an unsignalised roundabout.

8.4.2 The Nexus 25 signalised crossroads will operate within the available capacity in 2043 with some spare capacity even during peak hours as shown in Table 8-2.

Table 8-2 Nexus 25 junction operational performance in 2043

Approach Arm to Nexus 25 junction	AM Peak		PM Peak	
	Ratio of flow to capacity	Delay (seconds)	Ratio of flow to capacity	Delay (seconds)
Park and Ride	78%	65	51%	55
A358 southeast	88%	45	83%	40
Nexus 25 development	30%	45	79%	45
A358 northwest (from Jct 25)	79%	40	74%	25

8.5 Southfields roundabout

8.5.1 At Southfields roundabout, the recommended preliminary design will contain six separate elements of the junction that will be upgraded compared to the existing layout.

8.5.2 They are:

- A segregated free-flow left turn lane from the A358 dual carriageway to the A303 Ilminster Bypass.
- A widened two-lane exit for the A303 Ilminster Bypass, increased from the current single lane exit.
- A widened three-lane approach from the A303 Ilminster Bypass from the current two lane approach.
- Changes to turning movements for the two lanes on the A303 (south-west) approach, with vehicles now being able to continue along the A303 from both lanes.
- Widening of the A358 (west) from one to two lanes before it becomes three lanes near the give way line.
- Improved road markings, particularly on the circulatory of the roundabout, which will assist drivers in navigating the roundabout.

8.5.3 The segregated left turn lane will remove traffic from the roundabout. This will reduce queueing on the approach to Southfields roundabout from the new A358 dual carriageway.

8.5.4 The improved layout of Southfields roundabout will operate within the available capacity in 2043 with some spare capacity even during peak hours as shown in Table 8-3.

Table 8-3 Southfields roundabout operational performance in 2043

Approach Arm to Southfields roundabout	AM Peak		PM Peak	
	Ratio of flow to capacity	Delay (seconds)	Ratio of flow to capacity	Delay (seconds)
A358 north-west	70%	15	58%	10
A303 north-east	82%	10	82%	10
B3168 south-east	81%	15	74%	15
A303 south-west	73%	15	69%	15
A358 west	61%	10	57%	10

8.6 Ilminster Services junction

8.6.1 On the A358 (west) approach to Southfields roundabout, the recommended preliminary design will include a widening of the existing one lane to two lanes through the Ilminster services junction. The Ilminster Services junction will be signalised as part of this change.

8.6.2 The signalised Ilminster services junction will operate within the available capacity in 2043 with some spare capacity even during peak hours as shown in Table 8-4.

Table 8-4 Ilminster Services signalised junction operational performance in 2043

Approach Arm to Ilminster Services junction	AM Peak		PM Peak	
	Ratio of flow to capacity	Delay (seconds)	Ratio of flow to capacity	Delay (seconds)
A358 west	59%	15	47%	5
Ilminster Services	52%	45	56%	45
A358 east	74%	10	75%	20

8.6.3 A specific review of the potential for queue build up from the Ilminster Services junction to Southfields roundabout has also been undertaken to ensure that the capacity of Southfields roundabout will not be affected by stationary vehicles on its circulatory. The operational model confirms that queues from the Ilminster Services junction will not extend back to Southfields roundabout.

8.7 Mattock's Tree Green junction

8.7.1 The two roundabouts that form part of the split level Mattock's Tree Green junction will both operate well within their available capacity as shown in Table 8-5.

Table 8-5 Mattock's Tree Green junction performance in 2043

Approach Arm to Mattock's Tree Green junction	AM Peak		PM Peak	
	Ratio of flow to capacity	Delay (seconds)	Ratio of flow to capacity	Delay (seconds)
Western dumbbell roundabout				
Overbridge	45%	5	33%	5
A358 northbound off slip	45%	10	44%	5
Scout Camp Link / Ash Road	6%	5	5%	5
Eastern dumbbell roundabout				
Old A358 north-west	32%	5	22%	5
A378 east	58%	10	42%	5
Village Road Link	6%	5	5%	5
Overbridge	34%	5	34%	5
A358 southbound off slip	45%	10	62%	10

8.8 Ashill junction

8.8.1 The two give way junctions that form part of the Ashill junction will both operate well within their available capacity as shown in Table 8-6.

Table 8-6 Ashill junction operational performance in 2043

Approach Arm to Ashill junction	AM Peak		PM Peak	
	Ratio of flow to capacity	Delay (seconds)	Ratio of flow to capacity	Delay (seconds)
Western give way junction				
A358 northbound off slip, left	7%	5	7%	5
A358 northbound off slip, right	8%	10	6%	10
Overbridge, right	13%	5	15%	5
Eastern give way junction				
A358 southbound off slip, left	12%	5	9%	5
A358 southbound off slip, right	6%	5	6%	5
Overbridge, right	9%	5	12%	5

9 Accident analysis

9.1.1 Records of personal injury accidents along the A358 corridor and the wider area around the proposed scheme have been analysed for a five-year period between 2015 and 2019. This time-period was chosen so that the observed accident data is representative of typical conditions and not affected by the significant fluctuations in traffic levels that resulted from Covid-19 restrictions in 2020 and 2021. Where reference is made to accidents in this note it always refers to personal injury accidents, which includes only those accidents that resulted in one or more casualty, but excludes accidents that led to damage to a vehicle or property only.

9.1.2 The accident data between 2015 and 2019 shows that exactly 100 accidents occurred along the A358 between M5 junction 25 and Southfields roundabout. This includes all accidents that occurred at M5 junction 25 and Southfields roundabout. Three of the accidents along the A358 corridor resulted in fatalities and 20 resulted in serious injuries.

9.1.3 The observed accident records have been reviewed to calculate an average accident rate along the A358 corridor between M5 junction 25 and Southfields roundabout. This average accident rate has been compared against an equivalent accident rate for strategic A roads of equivalent standard on the National Highways strategic road network throughout England. The average accident rates on strategic roads in England that are quoted in this comparison are based on 2017 data as this represents the midpoint of the five year range of observed accident data examined for the local area. Accident rates are expressed as the number of personal injury accidents that occur per million vehicle-kilometres (pmvk) travelled.

9.1.4 For the purposes of comparing accident rates the A358 corridor has been split into three sub-sections in line with where the road standard changes between single and dual carriageway along the existing corridor. The comparison is shown in Table 9-1 below.

Table 9-1 Accident rates along the A358 corridor compared to English average

Section of A358 corridor	Road classification	Accident rate (pmvk)	
		Observed	English average
M5 J25 to east of Henlade	Strategic single carriageway	0.316	0.139
East of Henlade to Thornfalcon signals	Strategic dual carriageway	0.220	0.076
Thornfalcon signals to Southfields roundabout	Strategic single carriageway	0.117	0.139
M5 junction 25 to Southfields roundabout	**As noted above**	**0.172**	**0.131**

9.1.5 The comparison for the whole corridor shows that the existing A358 is less safe than a strategic A road of equivalent standard on the National Highways' strategic road network. A comparison of the accident rates indicates that the likelihood of an accident occurring along the A358 is more than 30% higher than would be expected based on the national average data.

9.1.6 Of the three sections of the A358, the section between east of Henlade and Thornfalcon signals shows the biggest disparity against national average accident

rates. The locally observed accident rate on this section is nearly three times as high as the national average for strategic dual carriageway A roads across National Highways' road network. A key reason for this is an accident cluster at the Ash Road junction with the A358, where nine accidents occurred over the five-year period reviewed.

9.1.7 The proposed A358 dual carriageway is forecast to result in a significant reduction in accidents in this area. Ash Road will no longer connect to the existing A358 in this location, which will reduce the amount of turning movements that contribute to the accidents in this location at present.

9.1.8 The section between M5 junction 25 and east of Henlade shows an accident rate that is more than twice as high as the national average for strategic single carriageway A roads. The road is narrow and congested as it passes through Henlade, and there are many side roads and private property accesses which contribute to this poor accident record.

9.1.9 The proposed A358 dual carriageway is forecast to reduce traffic in Henlade, which should in turn provide safety benefits for pedestrians, cyclists and horse riders.

9.1.10 The observed accident rate between Thornfalcon signals and Southfields roundabout is 16% lower than the national average for strategic single carriageway A roads. However, all three fatal accidents that occurred along the A358 corridor between 2015 and 2019 were located on this section of the corridor. The likelihood of an accident involving a fatality is 43% higher on this section of the A358 compared to roads of the same type across the National Highways network in England. Some of the factors that have contributed to the high accident severity on this section are the speed and volume of traffic on the A358, dangerous overtaking manoeuvres, which are the result of a lack of safe overtaking opportunities along the corridor, and turning movements at give way junctions.

9.1.11 The proposed A358 dual carriageway will likely address many of the causes of accidents along this section of the A358 by significantly reducing the number of junctions along the corridor. The proposed intermediate junctions along the A358 will be split-level junctions, removing the need for right turning traffic to cross the path of traffic travelling in the opposite direction. The dual carriageway will provide safe overtaking opportunities along the full length of the corridor by providing two lanes in each direction, which reduces the likelihood and severity of overtaking related accidents. This is because in the current single carriageway road configuration, overtaking can lead to head on collisions. The proposed dual carriageway is forecast to significantly reduce the number of fatalities and seriously injured casualties along the A358 corridor.

9.1.12 National accident data shows that accident rates on dual carriageways are around half of what they are on single carriageway roads. Applying these rates when comparing the proposed scheme to the without scheme, this would lead to a drop in the overall number of accidents even when we consider the forecast increase in traffic flow along the A358. The main reasons for this improvement in safety is that dual carriageways provide safe overtaking opportunities and the split-level junctions limit the amount of conflicting vehicle turning movements at junctions, for example by eliminating the need for right turning traffic to cross the opposing mainline A358 traffic. The central reservation prevents vehicles from crossing onto the opposing carriageway. For these same reasons, when

accidents occur on a dual carriageway the likelihood of fatalities or serious injuries is significantly reduced compared to a single carriageway road in addition to the reduction in the total number of accidents.

10 Impact of Covid-19 on traffic patterns and volumes

10.1.1 There is an accepted level of uncertainty in traffic forecasting as future traffic levels are dependent on a range of assumptions including population growth, job growth and economic growth. This uncertainty is captured in a systematic way through the creation of low, central, and high growth scenarios.

10.1.2 Covid-19 has had a significant impact on traffic levels since March 2020, in particular during periods of lockdown. Whilst traffic levels dipped during the first lockdown in 2020, they have steadily increased, particularly due to demand for home delivery and online shopping. As of March 2022, overall traffic levels were back up to 97% of pre-Covid-19 levels (with goods vehicles at 110%).

10.1.3 The long-term impacts that Covid-19 will have on traffic levels are not yet known. Traffic data shows that traffic levels have recovered to broadly typical levels and therefore future traffic levels are very likely to be closest to existing central growth forecasts. Low and high growth sensitivity tests are being produced in addition to central growth forecasts to allow us to assess a range of possible future outcomes and understand the impact that these may have on the proposed scheme.

11 Impact on traffic flows on the local road network

11.1.1 Figure 11-1 indicates where changes in traffic volumes are forecast on the local road network as a result of the A358 Taunton to Southfields Dualling Scheme. It compares traffic flows in a future situation with the proposed scheme in place, to traffic flows in a future situation without the proposed scheme in place. The data has been extracted from the forecast traffic model representing the latest proposed scheme design that is being presented at this supplementary consultation. For comparison the equivalent figure based on the scheme design presented at statutory consultation in 2021 has also been included.

11.1.2 Sections of road are shown schematically as straight lines rather than following the true alignment of each road as this is how they are visually represented within the traffic model. The curved distance of the road, among other features not visually represented, are taken into account during traffic model calculations.

11.1.3 As noted in paragraph 7.1.2, an interactive traffic flow webmap has now been developed for this supplementary consultation in order to provide access to the traffic flow data that underpins the version of Figure 11-1 which represents the latest proposed scheme design (top figure within Figure 11-1). The intention of the figure in this note is to provide a high-level overview of where increases and decreases are forecast as a result of the scheme compared to a future situation without the scheme. For details of the magnitude of these forecast changes in traffic flows please refer to the interactive webmap.

11.1.4 Figure 11-1 shows that the impact on the local road network around the A358 corridor has not fundamentally changed in most areas since the previous consultation in 2021. The blue lines indicate that, in most locations, the impact of the proposed scheme would be broadly neutral compared to a future situation without the proposed scheme. Increases in traffic flows, indicated by the red lines, would be focused predominantly around the access points to the proposed A358 dual carriageway at Mattock's Tree Green junction and Ashill junction. Decreases in traffic flows are indicated by the green lines.

11.1.5 The focus of this supplementary consultation is on the changes that we made to the proposed scheme design following the previous statutory consultation in 2021 as described in chapter 6.

11.1.6 Changes to the Ash Road tie-in to the Mattock's Tree Green junction, as outlined in section 6.3, have led to a reduction in forecast traffic using Ash Road. This is because the changes make traffic less likely to use Stoke Road to 'rat run' through to southern parts of Taunton compared to the scheme design proposed at the previous statutory consultation.

11.1.7 If the proposed scheme is built, it is forecast to reduce traffic volumes along Ash Road and Stoke Road compared to if the scheme was not built. The opposite was true in the case of the previous scheme design, an increase in traffic was forecast along Ash Road and Stoke Road compared to if the previous proposed scheme was not built. This traffic is now forecast to use alternative routes along the road network to get to Taunton; via M5 junction 25 and Toneway and via the existing A358 and Haydon Lane. The latter leads to increases in traffic volumes along Haydon Lane, which are addressed in this latest proposed scheme design by the mitigation measures outlined in chapter 14.

11.1.8 Changes to Bickenhall Lane overbridge, as outlined in section 6.6, have stopped vehicles using Bickenhall Lane Overbridge to cut across to Village Road in order to access the A358 at the Mattock's Tree Green junction from the eastern side. Such traffic originates around Staple Fitzpaine, Curland, Slough Green and Bickenhall. In this latest proposed scheme design, some of this traffic uses Cold Road and Higher West Hatch Lane in order to access the Mattock's Tree Green junction via Ash Road on the western side of the A358. The increase in traffic along the Cold Road / Higher West Hatch Lane route will be of a small magnitude and therefore is not highlighted by red colouring on this figure.

11.1.9 The other proposed scheme design changes that have been included since the statutory consultation in 2021 do not have a notable traffic impact on local roads as a result of changes in routeing of traffic. The changes at the Nexus 25 junction and at the Mattock's Tree Green eastern roundabout were mainly included to add crossing facilities for non-motorised users and to improve safety at both junctions. The West Hatch Lane link and Capland link were included to improve access to these locations, but this only affects a very small number of trips and therefore does not present itself as a notable change in Figure 11-1.

11.1.10 An assessment of the impact of the proposed scheme on local roads has been undertaken in order to determine whether measures are required to mitigate changes in traffic volumes resulting from the A358 Taunton to Southfields Dualling Scheme. In most cases the affected roads have sufficient capacity to cater for the forecast increases in traffic. Locations where this applies include Rapps Road and the old A303 between Suggs Lane and Horton Cross.

11.1.11 Improvement measures have been developed as part of this latest scheme proposal at selected locations where the forecast change in traffic may potentially lead to congestion or have an impact on safety of road users. The methodology for assessing whether changing traffic volumes require mitigation measures to be included as part of the proposed scheme has been discussed with Somerset County Council, who are the local highway authority for these roads. More details on the mitigation proposals on the local road network can be found in chapter 13.

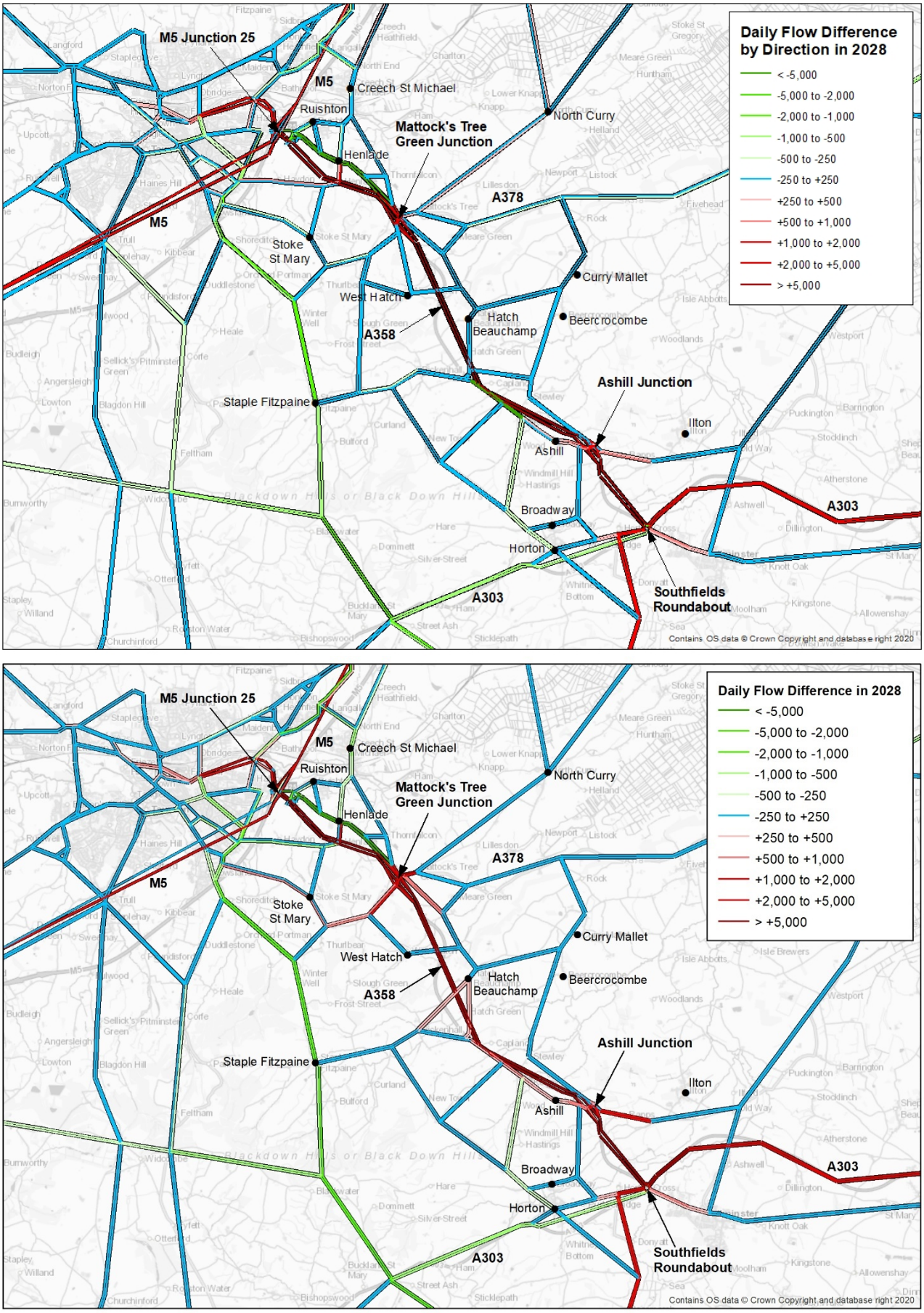


Figure 11-1 Forecast changes in traffic volumes based on latest proposed scheme design (top) and scheme design presented at consultation in 2021 (bottom)

12 Impact on routeing through the local road network

12.1.1 The proposed scheme would prevent local road access directly onto to the proposed dual carriageway, instead providing access to the local road network via two split-level junctions at Mattock's Tree Green and Ashill, where traffic would be able to connect to the A358 via slip roads. As noted in chapter 9, having these split-level junctions and alternative access provision to the A358 is safer than the numerous existing junctions and private accesses along the A358.

12.1.2 The changes in access points to the A358 would result in some traffic travelling to and from local communities choosing different routes through the local road network, as the only places to access the A358 dual carriageway from the local road network between M5 junction 25 and Southfields roundabout would be at the Nexus 25 junction and the two new split-level junctions.

12.1.3 The schematic diagram in Figure 12-1 indicates where traffic from local communities around the A358 corridor would be most likely to access the A358 Taunton to Southfields Dualling Scheme.

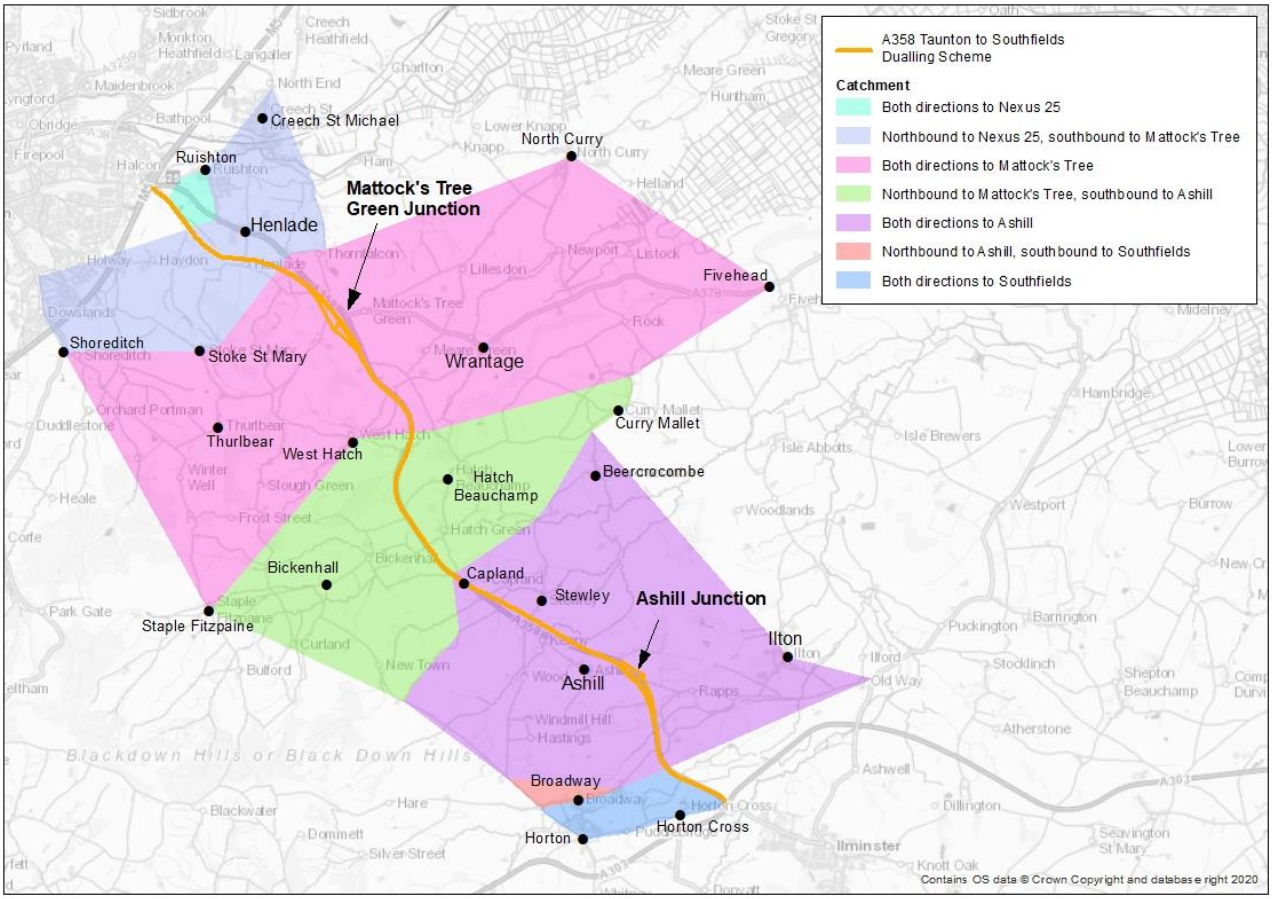


Figure 12-1 Catchment areas for various access points to the proposed A358 scheme

12.1.4 Detailed information about how routeing of traffic would be affected between the future scenarios without and with the proposed scheme in place and how this will impact on journey times for a selection of locations around the A358 corridor can be accessed online using our interactive trip route and journey time webmap. The benefit of this webmap is that routeing and journey time information for a much larger selection of locations can be provided interactively – more information than

could feasibly be included as static figures or tables in this note. Please follow the link in this document (by clicking on the underlined text) to access the webmap. Alternatively, the interactive trip route and journey time webmap can also be accessed directly from the Virtual Engage public consultation room for this supplementary consultation.

13 Mitigation on the local road network

13.1 Overview

13.1.1 As noted in chapter 12, the A358 Taunton to Southfields Dualling Scheme will affect traffic volumes and trip patterns on some of the nearby local roads. The methodology for assessing whether changing traffic volumes require mitigation measures to be included as part of the proposed scheme has been discussed with Somerset County Council, who are the local highway authority for these roads.

13.1.2 Further to discussions with Somerset County Council, National Highways has undertaken an assessment of locations where mitigation measures may be required and has developed a package of improvements. These are at locations where the forecast change in traffic may potentially lead to congestion or have an impact on safety of road users, for example by leading to increased conflict between motorised and non-motorised users as a result of increased traffic flows. Our assessment has taken into consideration factors such as the existing geometry of roads and junctions, vehicle routeing, vehicle types, accident data, speed data, usage by non-motorised users and environmental considerations.

13.1.3 The existing situation has been reviewed in all cases where the proposed scheme is forecast to increase traffic. Roads that experience a significant decrease in traffic have also been reviewed to consider the potential for faster speeds or antisocial driving on these more lightly trafficked roads.

13.2 Haydon Lane and Stoke Road

13.2.1 Haydon Lane is an existing ‘rat run’ used by drivers travelling between the A358 corridor and southern parts of Taunton. Existing traffic volumes are high relative to the standard of road. In a future situation without the proposed A358 scheme around 5,000 vehicles per day would use Haydon Lane in 2043.

13.2.2 The lane is less than 5m wide in places and includes several tight bends. Heavy goods vehicles over 7.5 tonnes are not permitted to use the route except for access. This reduces the likelihood of large vehicles contributing to safety issues and congestion along the route.

13.2.3 The additional capacity provided by the proposed A358 scheme will attract more traffic onto the A358 corridor. Some of this additional traffic on the A358 corridor will add to the amount of traffic travelling along Haydon Lane as it is the most direct route connecting the A358 to southern parts of Taunton. This would increase traffic volumes along Haydon Lane by approximately 20% compared to a future situation without the proposed A358 scheme, meaning that 6,000 vehicles might be expected to use it per day by 2043.

13.2.4 Haydon Lane is a popular route for cyclists. The section of the route in Lower Henlade where it becomes Stoke Road has properties fronting directly onto the carriageway. There are several public rights of way that join onto Haydon Lane. As a result there is an increased likelihood of interaction between motorised and non-motorised users along this route that has been considered in developing mitigation measures.

13.2.5 Personal injury accident records show that a single head on collision occurred on the tight bend where the Stoke Road turnoff to Stoke St Mary joins onto Haydon

Lane. There have been no personal injury accidents involving non-motorised users in recent years.

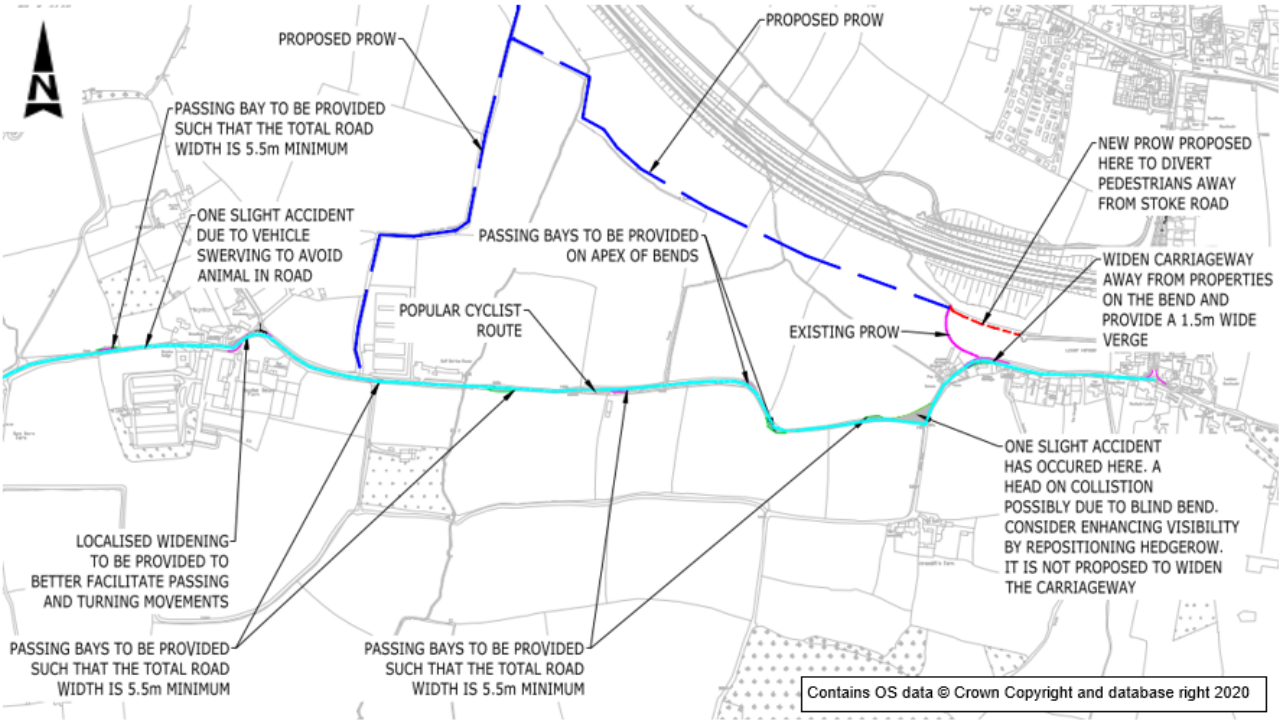


Figure 13-1 Proposed mitigation measures along Haydon Lane and Stoke Road

13.2.6 Figure 13-1 shows the proposed mitigation along Haydon Lane and Stoke Road. This mitigation would improve the ability for vehicles to safely pass in locations where the existing carriageway is less than 5.5m wide by providing passing bays and localised carriageway widening. The aim of the proposed mitigation package is to strike a balance between highway safety, environmental impact, impact on land and properties, maintaining the rural feel and not making the route more attractive to through traffic.

13.2.7 The carriageway along the section of Stoke Road through Lower Henlade would be widened on the northern side away from the properties and a 1.5m wide verge would be provided in this area. To provide some separation between motorised and non-motorised users in the area around Lower Henlade, a diversion of an existing footpath in the area away from the highway is also proposed.

13.2.8 Further west along Haydon Lane mitigation proposals would improve visibility around the bend where the head on collision occurred in 2016. This would be achieved by repositioning the hedgerow on the bend.

13.2.9 Passing bays would be provided in several locations along Haydon Lane such that the total road width becomes a minimum of 5.5m in these locations. Passing bays are designed to provide forward visibility from one to the next. Some localised widening would also be provided through the small settlement of Haydon where the existing road narrows through a series of bends.

13.3 Ashill village

13.3.1 The Old A358 through Ashill is a very lightly trafficked single carriageway road. It is a popular route with cyclists and is part of the offline cycle route that is proposed to run alongside the whole length of the A358 dual carriageway as part

of the proposed A358 scheme. There is a primary school just off the main road in Ashill which results in increased pedestrian and vehicle movements in the village during drop off and pick up times. The existing speed limit through Ashill is 40mph. There have been no personal injury accidents along the Old A358 through Ashill since 2007, apart from at the junction with the A358 mainline which will be closed as part of the proposed A358 scheme.

13.3.2 The closure of local road accesses onto the A358 would lead to an increase in traffic from nearby local communities passing through Ashill to connect to the A358 at the Ashill junction, to the south of the village. This would see average daily traffic volumes through the village increase from broadly 700 vehicles per day to 1,800 vehicles per day in 2043. In the busiest peak hour traffic would increase from around 60 vehicles per hour to around 150 vehicles per hour in 2043. This would mean an average increase from 1 vehicle every minute to 2-3 vehicles every minute during the busiest hour of the day.

13.3.3 The road, being the original A358, has a capacity significantly higher than 150 vehicles per hour and therefore its capacity does not need to be enhanced. Responses to the statutory consultation and discussions with local stakeholders have indicated concerns regarding safety from the increased use. The proposed mitigation therefore includes a package of traffic calming measures through the village.

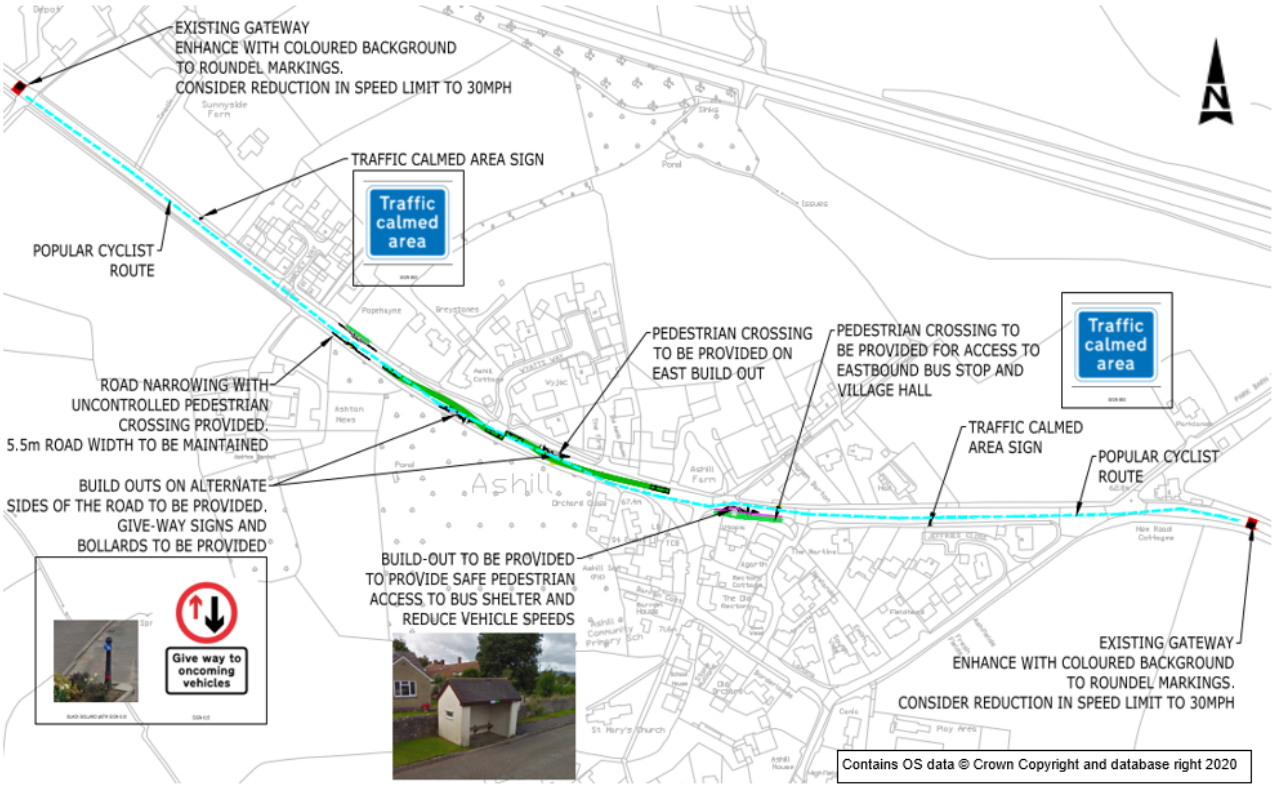


Figure 13-2 Proposed mitigation measures through Ashill

13.3.4 Figure 13-2 shows the mitigation measures proposed along the Old A358 through Ashill. The traffic calming would take the form of gateway treatments, localised buildouts and potentially a reduction in the speed limit from 40mph to 30mph subject to agreement with Somerset County Council. A buildout is also proposed at an existing bus shelter which currently has a very narrow footway.

13.3.5 The gateway treatments would highlight to drivers they are entering the village. The buildouts locally narrow the carriageway requiring drivers without priority having to slow and/or stop for oncoming traffic. The buildouts will also provide a safer place for pedestrians to cross the Old A358. Together the package of mitigation measures would slow traffic along the Old A358 and make the route safer for all users.

13.4 Cad Road / Rapps Road junction

13.4.1 Cad Road and Rapps Road currently offer two alternative routes between the A358 and places such as Ilton, including its business park, Merryfield airfield and other communities along the B3168. At present, most traffic from these areas travelling west along the A358 towards the M5 and Taunton uses Rapps Road and most traffic travelling east along the A358 towards the A303 corridor uses Cad Road.

13.4.2 The existing A358 junction with the road known locally as Cad Road will be closed as part the proposed A358 scheme. This will lead to a decrease in traffic along Cad Road as it will provide access to local properties only. There will be a corresponding increase in traffic along Rapps Road. This would see average daily traffic volumes along Rapps Road increase from broadly 1,700 vehicles per day to 2,800 vehicles per day in 2043. In the busiest peak hour traffic would increase from around 140 vehicles per hour to around 240 vehicles per hour in 2043. This would mean an average increase from 2-3 vehicles every minute to around 4 vehicles every minute during the busiest hour of the day.

13.4.3 Farm traffic looking to access the A358 from properties along Cad Road will do so via Cad Road, Rapps Road and the new split level Ashill junction. To accommodate these re-routed large agricultural vehicles turning left, a minor amendment to the existing junction geometry at the Cad Road / Rapps Road junction is included in the current package of mitigation measures. In addition, it is proposed to enhance visibility looking right at the junction. This is shown in Figure 13-3.

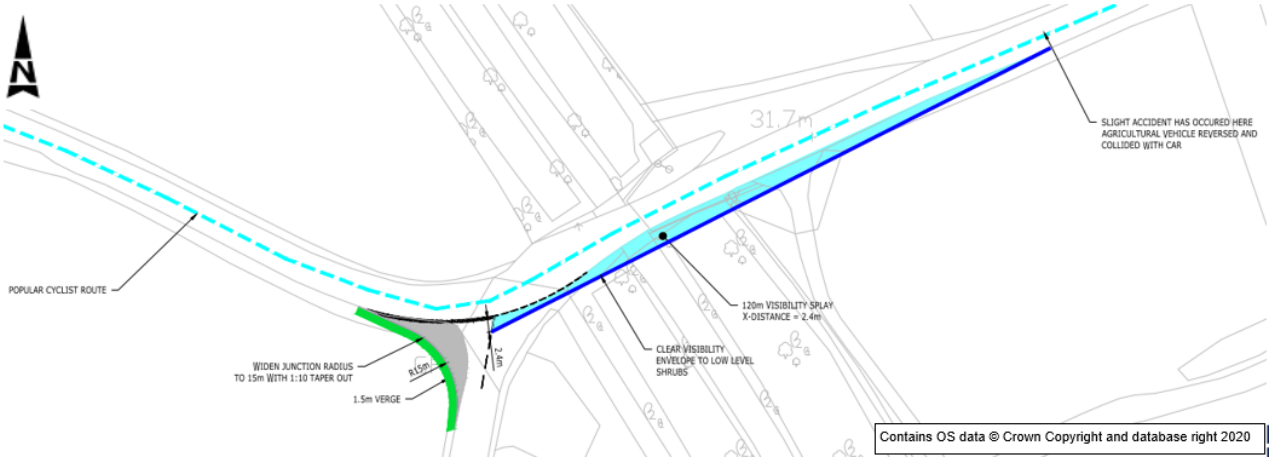


Figure 13-3 Proposed mitigation measures at Cad Road / Rapps Road junction

13.4.4 Both Cad Road and Rapps Road are popular existing routes for cyclists. The vastly reduced traffic volumes along Cad Road in combination with the Jordans overbridge over the A358, which will be accessible for non-motorised users as well as local landholders, will make Cad Road the preferred route for cyclists crossing over the A358 in this area when the proposed A358 scheme is in place.

This will give cyclists an alternative route that avoids the higher traffic volumes along Rapps Road.

13.4.5 Rapps Road is typically more than 5.5m wide and therefore provides sufficient capacity and space for vehicles, including typical heavy goods vehicles, to pass each other without the need for widening. Consideration has been given to Rapps Road linking through to Ilton Business Park and Merryfield airfield, where a high proportion of the heavy goods vehicle trips in the local area start and end.

13.4.6 Observed traffic survey data shows that despite the proximity to Ilton Business Park and Merryfield airfield heavy goods vehicle traffic using the route is low. No personal injury accidents have been recorded along Rapps Road in over 20 years, apart from at the junction with the A358 which will be closed as part of the proposed scheme. This indicates that the road is of an appropriate standard to accommodate the mix of vehicle types using it. The potential for heavy goods vehicles regularly passing each other in opposing directions along Rapps Road would remain low even with the increase in traffic volumes resulting from the proposed A358 scheme. There would therefore not be any adverse road safety or congestion impacts along Rapps Road.

13.5 Broadway Street

13.5.1 Broadway Street is currently the most direct link between the existing A358 and Broadway. While the road is narrow in places, forward visibility along the generally straight road is good. There have been no recorded personal injury accidents along Broadway Street in over 20 years, apart from at the junction with the A358 which will be closed as part of the proposed scheme.

13.5.2 The road is a popular existing route for cyclists, and this is likely to continue to be the case with the scheme in place as cyclists will be able to cross over the A358 on Jordans overbridge as noted in paragraph 13.4.4.

13.5.3 Forecast traffic volumes without the A358 scheme in place would be slightly under 300 vehicles per day in 2043. There would only be a small increase to slightly over 300 vehicles per day with the proposed scheme in place in 2043.

13.5.4 To accommodate this small increase in traffic along Broadway Street, two new passing places are proposed to allow larger vehicles travelling in opposite directions to pass each other. This is in addition to the passing places that already exist. The proposals are shown in Figure 13-4.

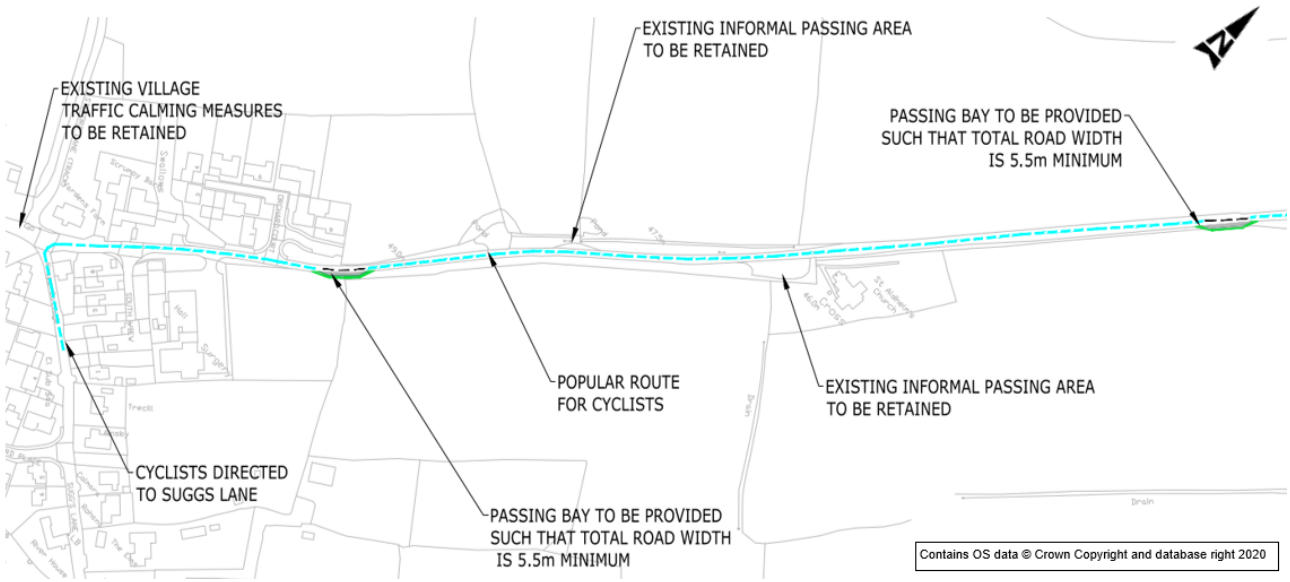


Figure 13-4 Proposed mitigation measures along Broadway Street

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