

Green Man Junction, Coleshill

Signalisation Road Safety Scheme

Overview

What?

The Green Man Junction Signalisation is a casualty reduction and capacity improvement scheme which seeks to reduce personal injury accidents at the junction between High Street, Birmingham Road and Blythe Road. The primary objective of this scheme is to improve road safety and capacity of the Green Man junction.

The scheme includes the installation of traffic signals with pedestrian-controlled crossing points, associated waiting restrictions, banned turning movements, extended weight limits and a 20mph zone.

Why?

Concerns have been raised over many years about the operation of this junction as it has featured consistently on the County's annually produced list of junctions with a poor safety record and a casualty hotspot for traffic collisions resulting in personal injury. Action was previously taken through the introduction of traffic calming on High Street in partnership with the Town Council and this reduced traffic speeds through the junction. However, frequent collisions and existing delays experienced travelling through this junction has been raised as a key issue from members of the public.

Presently the delays experienced in reaching wider routes due to the inadequate road layout have led to driver frustration. This has been identified as one of the main contributory factors leading to collisions. Cyclists presently have been involved in a number of collisions at this location; this again is as a result of the present road layout.

Table 1 Last Five-Year Collision Data

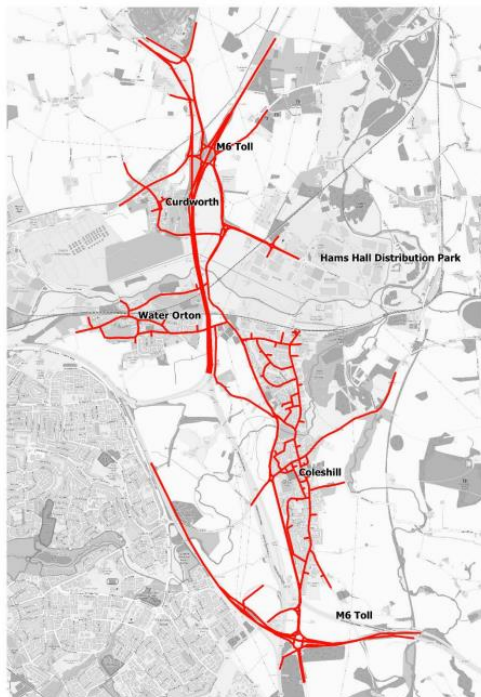
Collision Number	Vehicles/pedestrians Involved	Reason for collision
1	1X Vehicle 1X Pedestrian	Vehicle turning into Birmingham Road from High Street failed to give way to pedestrian
2	1X Vehicle 1X Pedestrian	Vehicle turning into Birmingham Road from High Street failed to give way to pedestrian
3	1X Van 1x Cyclist	Cyclist turning in to Birmingham Road struck by vehicle travelling on High Street towards town centre.
4	1X Car 1x Cyclist	Cyclist turning in to Birmingham Road struck by vehicle travelling on High Street towards town centre.
5	1X Car 1x Cyclist	Cyclist traveling Northbound towards Town centre has been struck by vehicle exiting from Blythe Road on to High Street.
6	1X Car 1x Cyclist	Cyclist traveling Northbound towards Town centre has been struck by vehicle exiting from Blythe Road on to High Street.
7,8,9	2 x Car (involved in each collision)	Collisions was a result of vehicles exiting Blythe Road on to High Street. Failure to Give Way.
10,11,12	2x Car (involved in each collision)	Collisions was a result of vehicles exiting Blythe Road on to High Street. Failure to Give Way.
13	1X Car 1 X Van	Collision was result of Car exiting High Street on to Blythe Road. Failure to Give Way
14,15	1 X Car 1 X HGV (Involved in each collision)	Collision was result of Car exiting Blythe Road on to High Street. Failure to Give Way

How?

The Assessment Process

WCC worked with modelling consultants, Vectos Microsim to develop a microsimulation model (using Paramics <https://www.paramics.co.uk/en/>) of the Coleshill area. The microsimulation modelling approach models the movements of individual vehicles travelling around road networks by using car following, lane changing and gap acceptance rules and allows the real-life observed operation of the network to be captured accurately. A significant traffic monitoring exercise was conducted in 2014/15 to inform model development. The model was calibrated using turning and link flow data and validated using journey time data. The model coverage includes M6 J4, A446, all routes in Coleshill and M42 J9, the model validation meets all requirements according DfT guidance.

Figure 1: Coleshill Model Extent



Forecast model years were then developed to include all known committed developments and highway schemes. The Greenman scheme has been assessed to include the impacts related to the Emerge Surf and The Wall development as well as including growth relating to Birmingham Development Plan. Forecast years of 2021 and 2031 were developed and used in the assessment.

Working with local members, through iterative modelling processes, and using knowledge of schemes considered at this location over the last 20-25 years, a number of options were identified and considered, including changing the existing priorities at the junction and a wider one-way system. The proposed layout was identified to be the only workable option which would address the highway safety objectives and address the significant current/forecast queuing issues on Blythe Road/Birmingham Road.

The performance of the scheme was evaluated primarily on the basis of addressing the safety issues, with a view to also minimising queuing/congestion issues and the impact on alternative routes. The scheme addresses queuing on Blythe Road and the restricted vehicle movements ensures that the junction operates effectively and pushes traffic destined for employment areas in the north of Coleshill to using the more appropriate routes via A446. This does create further traffic pressure at A446/Birmingham Road roundabout and necessitates a wider traffic management strategy to include changes at this junction. A446/Birmingham Road junction widening, and signalisation is considered to be a necessary complementary scheme which also performs the task of mitigating impacts linked to the Emerge Surf and The Wall developments west of Coleshill. The A446/Birmingham Road scheme is fully funded through a combination of developer and Warwickshire County Council funding. Consultation on these proposals will take place in 2022.

Changes to the volume of traffic and delay on routes within Coleshill have been considered in the assessment of the options. The scheme is necessary to address both the current

congestions issues and to also accommodate forecast growth, which is expected to exacerbate existing congestion issues significantly.

Figure 2: Traffic flow modelling pre-scheme 8am – 9am peak:

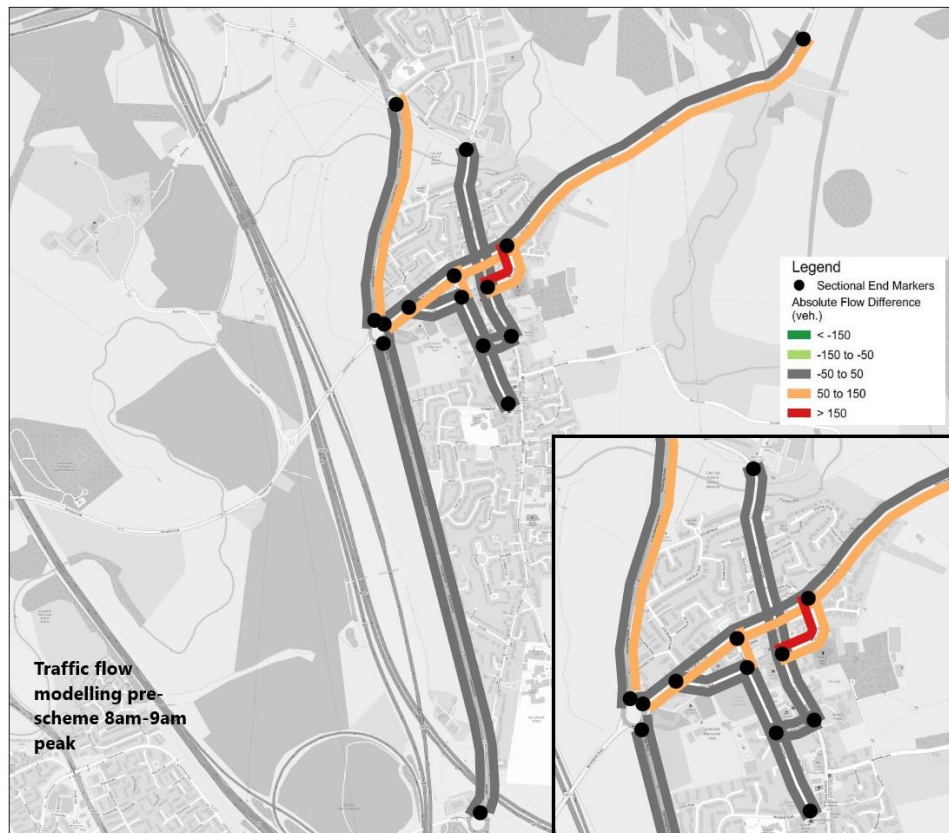


Figure 3: Traffic flow modelling post-scheme 8am – 9am peak:



Figure 4: Traffic flow modelling pre-scheme 5pm – 6pm peak:



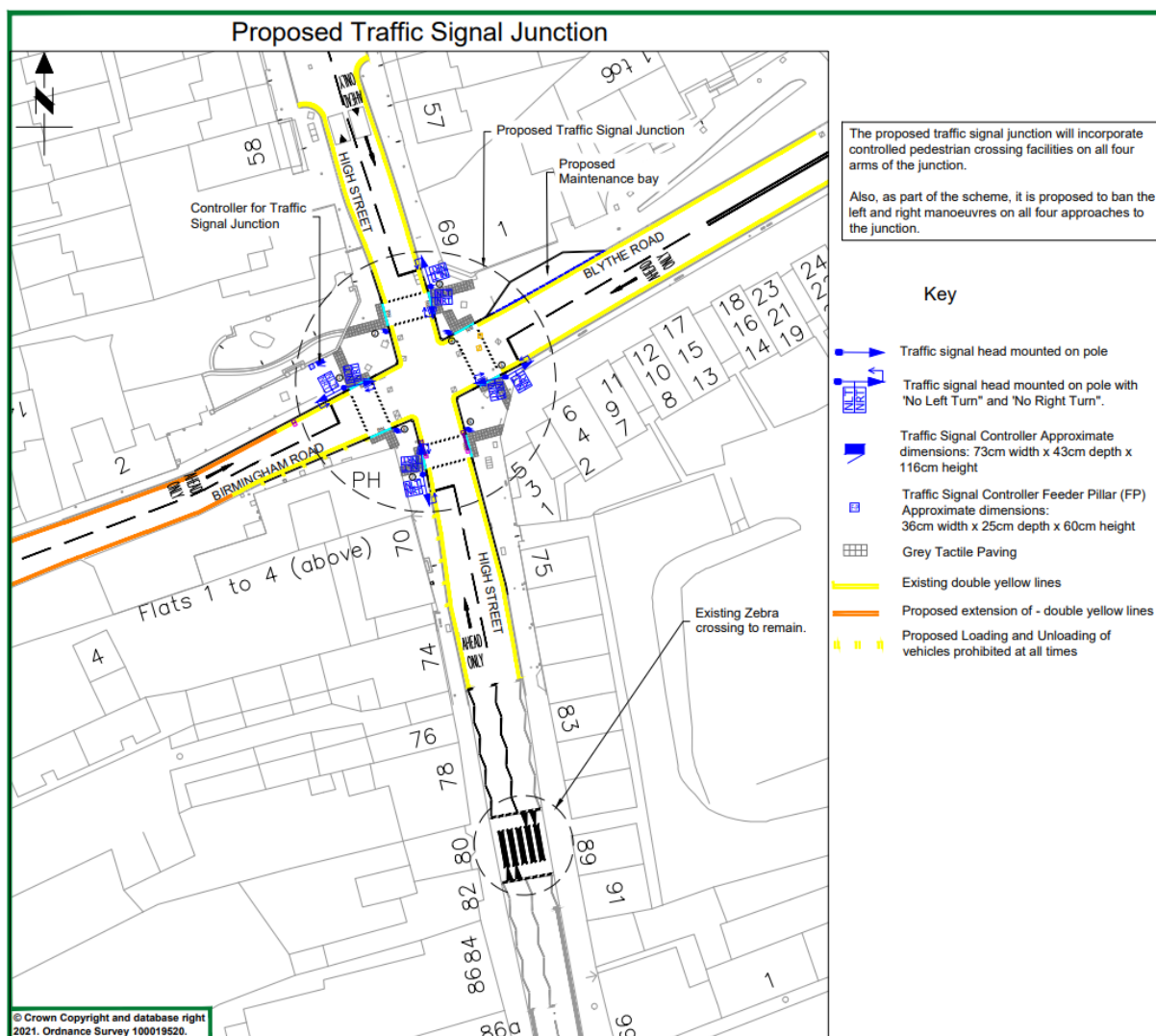
Figure 5: Traffic flow modelling post-scheme 5pm - 6pm peak:



The traffic flow plots above indicate an increase in traffic flow on some routes as a result of the scheme, this increase is in part linked to vehicles using alternative routes due to turning restrictions, and in part linked to the release of queuing traffic onto the network. This traffic is already on route to Coleshill but is stuck on the approach to the Green Man junction. It should be noted the increase in traffic flows does not necessarily result in an associated increase in journey times on alternative routes. The impacts across the network are largely negligible, although the benefits to journey time on Blythe Road are significant.

As part of the modelling assessment process an Air Quality assessment using AIRE has been undertaken to consider the benefits associated with removal of the excessive queuing on Birmingham Road/Blythe Road.

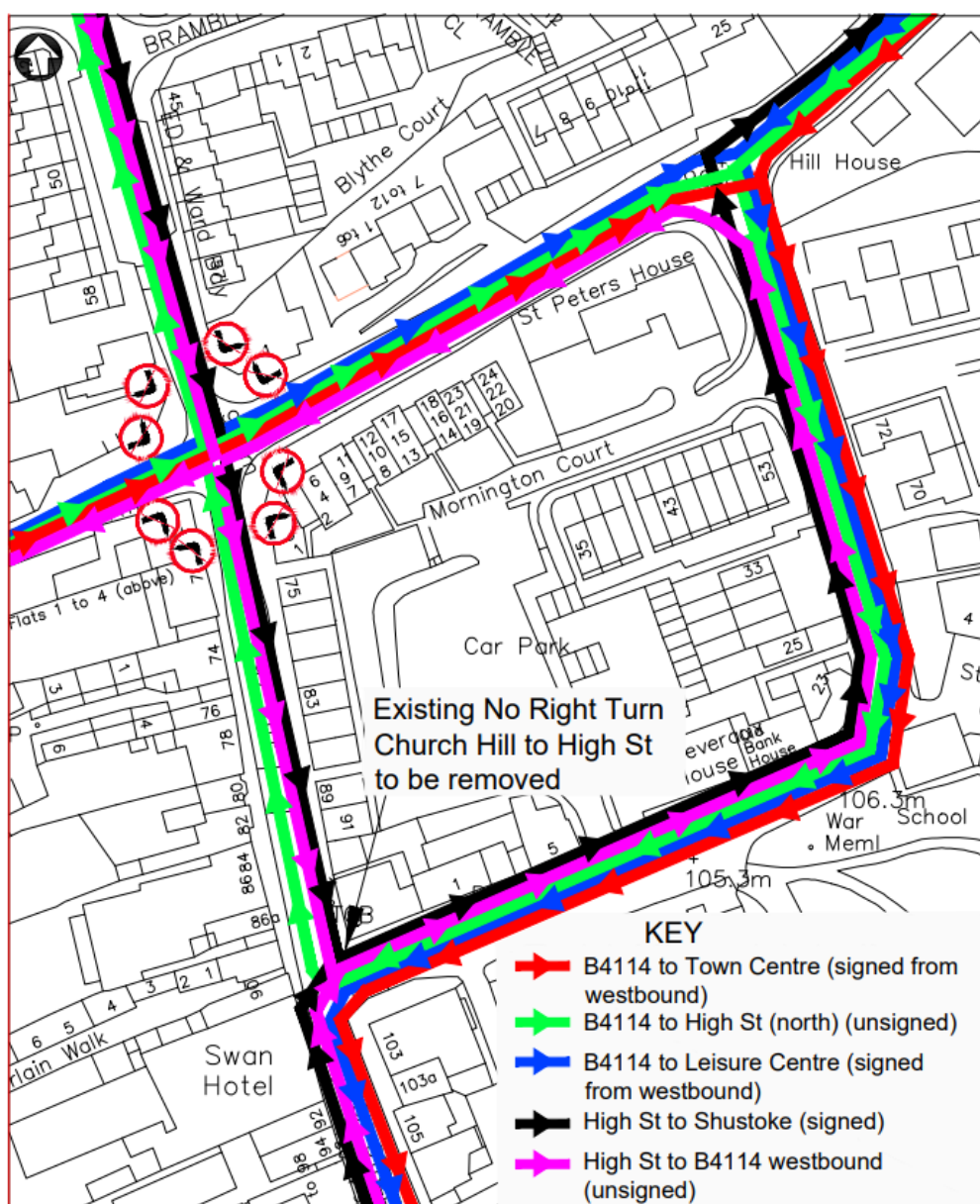
The scheme will tackle a part of the road network which suffers consistently from high collision rates, often involving personal injury to road users. The new configuration of Birmingham Road, Blythe Road and High Street will incorporate traffic signals and pedestrian crossing facilities on all four arms. The footway will be widened to create a safe space for pedestrians, and it is proposed to ban the left and right turns on all four approaches to the junction.



This new layout will remove the conflict point between pedestrians / cyclists with road traffic and will ensure that cyclists can confidently facilitate this collision hotspot when travelling to their wider route and pedestrians can cross the carriageway safely. These reoccurring collisions will be significantly reduced if not completely removed as the signalised traffic lights will allow 'ahead only' movement.

The two-stage sequence where pedestrians can cross the carriageway with straight only traffic is efficient and it also reduces the delay to waiting times at the junction. A strategic benefit of banning the movements is that this will reduce the amount of traffic using Coleshill as a through route therefore a significant proportion of traffic will use alternative routes, reducing congestion during peak hours.

To facilitate the new layout, alternative routes will be signed for through traffic and local destinations as shown in the plan below. The right turn ban from Church Hill to High Street shall be revoked and the traffic calming buildout located outside The Swan Public House will be removed from this location.



As part of the scheme, it is also proposed to introduce 'No Waiting at any Time' & 'No Loading at any Time' restrictions on the approaches to the junction which will improve the flow of traffic and prevent delays. This will help economic productivity and reduce frustration in drivers, itself a common cause of collision at this location.

The existing weight limit restriction (except for loading) is not being lifted but in fact it is being extended in the town. This is to prevent any 'rat-running' of HGVs as a consequence of the proposed changes to the junction.

Additionally, it is proposed to introduce a 20mph zone in Coleshill which would be localised around Coleshill centre incorporating the busier commercial and retail High Street. There are existing traffic calming features in place and average speeds are expected to be at or around 20mph inclusive of the Green Man junction.

Benefits

The project comprises a number of enhancements which will have the following benefits:

Transport Improvements

- Manage the flow of traffic along the corridor
- Reduce the personal injury collisions at the junction
- Improve conditions for pedestrians and enhancing the overall public realm

Highway Improvements

- Signalised ahead only junction at Green Man junction, allowing "walk with traffic" movements for pedestrians
- Sharp cornering at junctions to remove turning movements for vehicles, which will reduce hold up to traffic flows in this high casualty hotspot
- No waiting 'yellow lines' on junction approaches, with reinstated kerbs

Pedestrian Improvements

- 'Walk with traffic' pedestrian control to be provided at the junction which significantly improves conditions for pedestrians in the area, especially since the current arrangement only has one uncontrolled pedestrian crossing point which is approximately 60 metres south of the junction and only caters for pedestrians crossing High Street
- Tactile paving to be installed to highlight controlled crossing point which will be highly beneficial for visually impaired people crossing at this junction.

Warwickshire County Council will be carrying out an exhibition event at Coleshill Town Hall on **Tuesday 16 and Friday 19 November 2021 from 3pm-8pm**. We welcome any comments or feedback during the events.

Further information about this scheme is available online:

<https://www.warwickshire.gov.uk/news/article/2512/green-man-crossroads-coleshill-20mph-7-5-tonne-waiting-restrictions>