

**Commentary on changes made to the Pinkmead Roundabout design
To address further information requested by HCC Highways (PG 6/3/5/MIN 1Apr2025)**

The main direction of vehicular travel at the proposed roundabout will be each-way between the bypass and A334 Station Hill. The original roundabout design included a segregated left turn lane (SLTL), sometimes referred to as a left filter or jet lane, to assist the flow of traffic turning left from the bypass into Station Hill. Due to land constraints, the SLTL required two Departures from Standard (DfS) to be submitted and approved prior to the submission of the scheme for a Detailed Road Safety Audit (RSA2).: -

- DfS1 departs from TD 51/17 which states: “Uncontrolled crossing points shall not be provided across Segregated Left Turn Lanes”. As a mitigation measure for this, a reduced carriageway width of 3.5m has been adopted.
- DfS 2 also departs from TD 51/17, which requires increased lane width where the length of the physical separator island exceeds 50m (in order to allow traffic to pass a broken-down vehicle at such locations).

RSA2 raised a number of problems relating to the safe operation of the SLTL. The main problem related to the proposed give way arrangement at the Station Hill end, which, due to the need for drivers look right due to the entry angle and not anticipating to have to give way, leading to shunt type collisions involving the vehicle ahead or being struck from behind, or failing to see vehicles on their outside at the merge leading to side swipe collisions.

Other problems identified relating to the SLTL were:

- drivers not using the SLTL at peak time, exacerbating the risk of the above-mentioned side swipe accidents,
- the position of the ADS being after the start of the SLTL leading to late lane changing,

The RSA2 also raised concerns about the pedestrian and cyclist (VRU) crossing facilities including the number of lanes and distances to cross which would be worse for people with impairments in relation to: -

- Gap acceptance for VRUs,
- The multiple lanes to cross at each arm and the potential for disorientation as to which direction traffic is travelling,
- The excessive distances at some of the crossings, which VRUs with impairments might struggle to cross, and
- The conspicuity of the VRUs on the refuges due to potential uneven lighting levels.

The possibility of providing greater crossing provision to uncontrolled crossings was considered. Zebra crossings were ruled out due to both forecast traffic volumes and their lack of provision for cyclists, and parallel crossings due to the lack of space

within the splitter islands in which to locate parallel crossings and their associated footways and cycleways. Signal-controlled crossings were considered as the only form of controlled crossing that could be used at this location. However, their use is not considered feasible due to the impact on user desire lines and that they cannot be provided without compromising the compliant roundabout geometry due land constraints. If installed, VRUs may seek to cross away from the designated crossing locations to avoid travelling the additional distances, which was considered hazardous. In addition, as the number of movements is likely to be tidal, and of low numbers, they are unlikely to meet the PV² assessment criteria to justify the inclusion of signal-controlled crossings.

Due to land constraints, it was not possible to reconfigure as the RSA2 recommended, to closely resemble the layout shown in CD116 Figure 6.31, the roundabout was redesigned to simplify the configuration by providing a conventional flared dual lane approach on the bypass arm. In addition, the other problems raised in the RSA2 were addressed, and suggestions from informal discussions with the auditor were incorporated. As a result, a compliant conventional roundabout was developed within the land available to remove the SLTL and improve the three-stage uncontrolled crossings on the bypass and Station Hill arms. The need for the DfS's was removed, as the design is now compliant with CD 116.

The changes made to address the problems identified above with the user crossing facilities are: -

- The narrowing of the roundabout exit onto the bypass from two to one lane to reduce the crossing length,
- Revising the splitter island refuge arrangement,
- Replacing the roundabout entry two-stage arrangement with a single crossing, thereby removing the need for VRUs to cross the free-flow SLTL,
- Replacing the three-stage uncontrolled crossing via the Station Hill splitter island by providing an additional refuge approximately 60m northeast of the roundabout with an extension of the shared use facility to the southeast, and
- Redesign of the street lighting to provide an even coverage across the whole roundabout.

Other changes made included the redesign of Mill Hill to incorporate a further pedestrian refuge to aid access to and from the bus stops and the extension of the 30mph speed limit from Botley village up to the roundabout.

A supplementary RSA2 was submitted following the changes made to address the problems raised in the original RSA2 report. For the same reasons of land constraints and the likely low, tidal user crossing movements, it is not considered that a greater crossing provision is required or deliverable. As a result, the problem raised has not been accepted but has been addressed and mitigated and an Exception Report is to be submitted.

Impact on traffic

The changes to the roundabout have been modelled using Junctions 9 using traffic forecast data from the Solent Region Transport Model (SRTM) which was used to underpin the Transport Assessment of the Botley Bypass Planning Application.

A future year scenario of 2026 was used again for direct comparison to the operation of the consented scheme and includes local surrounding development including Boorley Green, Boorley Gardens, North Whiteley and the Woodhouse Meadows and Botley Fields.

The modelling for the future year (from the Bypass Transport Assessment) showed that the roundabout operated within capacity:

Arm	2026 DS AM		2026 DS PM	
	RFC	Max. Queue	RFC	Max. Queue
A334 Station Hill	0.85	5	0.952	11
A3051	0.65	2	0.674	2
Mill Hill	0.27	1	0.264	1
Bypass	0.8	4	0.742	2

The roundabout has been revised since the original planning application to remove the Segregated Left Turn Lane (SLTL) to overcome a safety audit concern and improve crossing facilities by reducing the numbers of lanes to cross.

The removal of the SLTL and reduction of the exit lane onto the bypass has a slight impact on the overall capacity of the roundabout and on traffic flows. Queue lengths on Station Hill and the Bypass increase marginally compared to the previous scheme.

Arm Name	AM 2026			PM 2026		
	RFC	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)
A334 Station Hill	0.84	7.7	23.27	0.87	7.7	23.12
A3051	0.44	4.9	20.08	0.79	5.1	19.14
Mill Hill	0.44	1	15.78	0.37	0.7	14.4
Bypass	0.82	5.9	17.86	0.74	4.9	15.46

This is considered to be acceptable as it provides better connectivity for VRUs by reducing the number of crossings over the bypass, for people travelling between the station and Botley, to two crossings as opposed to three, as well as reducing the width of the bypass to cross.

By providing the improved crossings, the roundabout is providing a better balance between all users and not just prioritising free flow traffic and it is therefore more compliant with Hampshire County Councils adopted Local Transport Plan 4 which seeks to better balance the priority of VRUs.