

# Proposed Residential Development, The Lanes, Penwortham

## Technical Note 04 – Bee Lane Access Review

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### Overview

1. Following submission of the planning applications, comments on the Transport Assessment (TA) prepared by Vectos were received from National Highways in September 2021, Lancashire County Council (LCC) in October 2021 and Network Rail in November 2021.
2. The planning application proposed access from Bee Lane for approximately 40 dwellings to the north-east of the site, as well as active travel access for the wider scheme. The comments received from LCC and Network Rail queried the use of Bee Lane in its current form (i.e. a pedestrian prioritised street) to accommodate an increase in movements by all modes.
3. This note has been prepared to further consider the existing traffic and infrastructure at Bee Lane, the proposed increase in trip movements and the options available to accommodate all road users in a safe and efficient manner.

### Existing Traffic Flows

4. Manual Classified Count (MCC) surveys were completed at the Bee Lane / B5254 Leyland Road / The Cawsey junction by Nationwide Data Collection on Wednesday 21<sup>st</sup> April between 07:00 – 19:00 and by Signal Surveys on Wednesday 12<sup>th</sup> September 2018 between 07:30 – 09:30 and 16:30 – 17:30.
5. **Figure 1.1** and **Figure 1.2** provide a summary of these vehicle flows. The turning movements at this junction have been used to consider the link flows along Bee Lane.

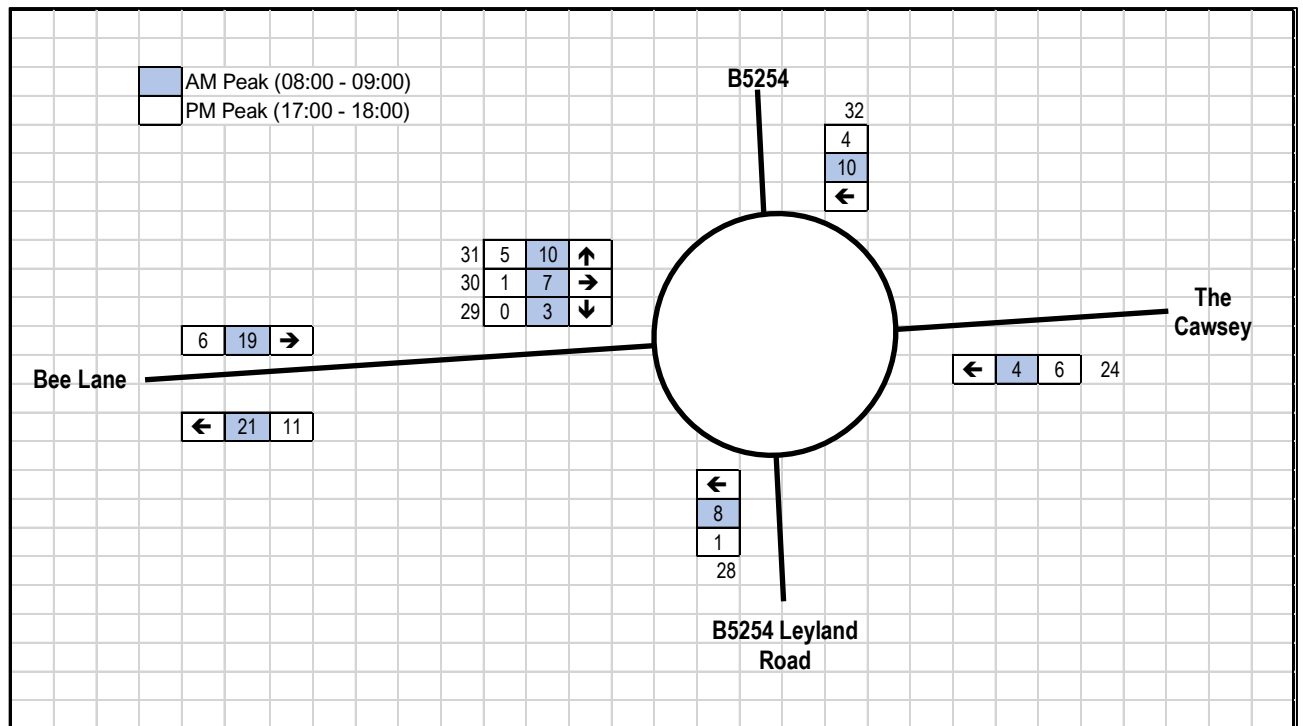
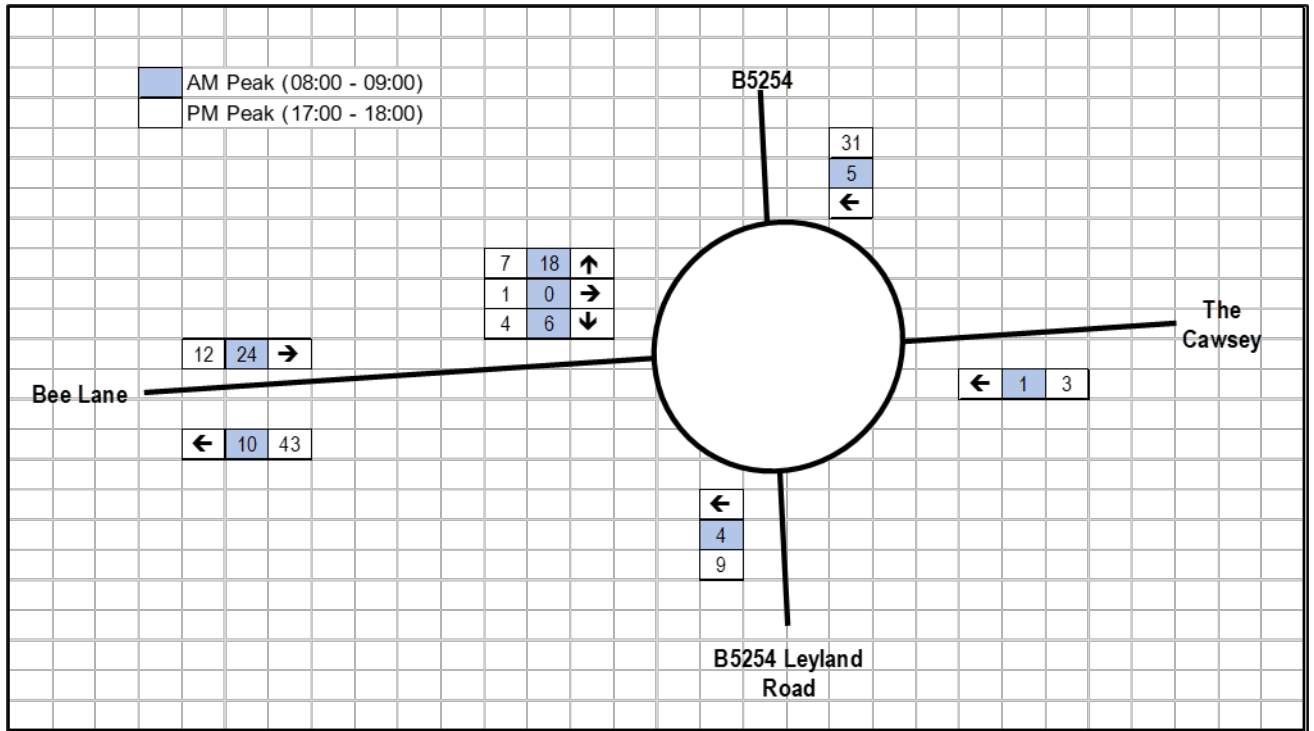
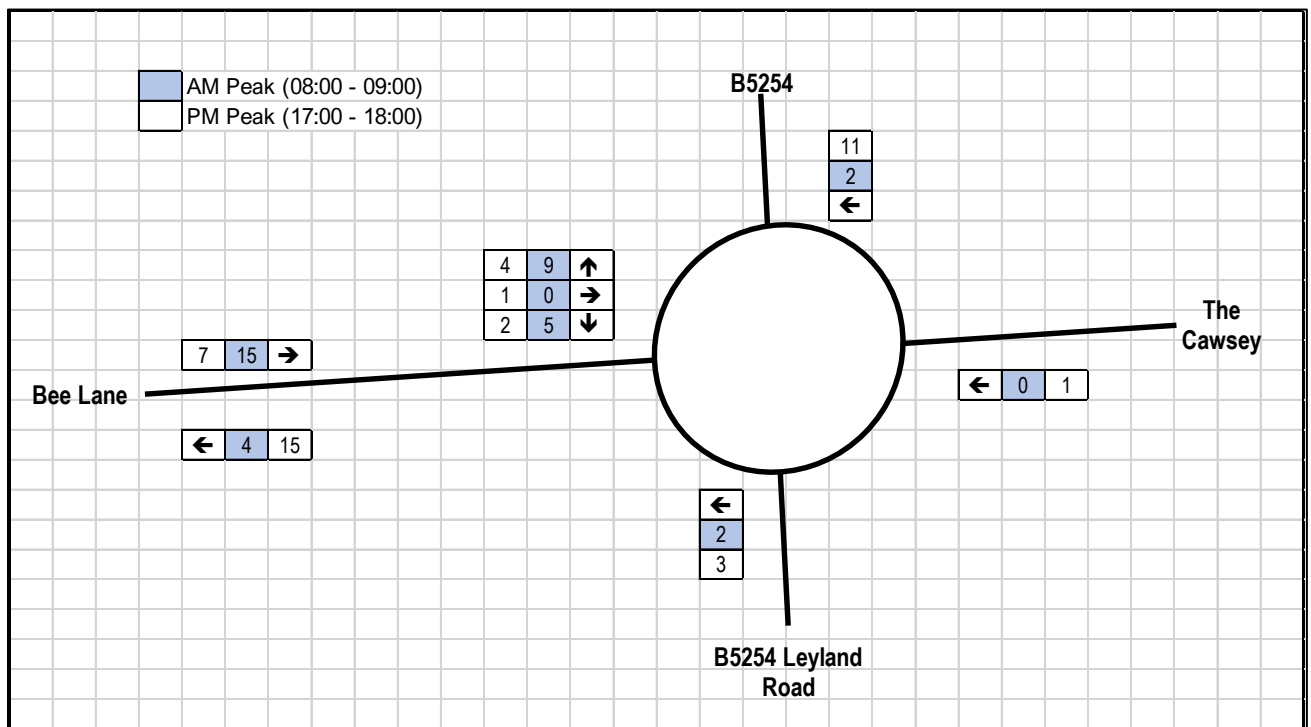


Figure 1.2: 2021 Traffic Flows

6. **Figure 1.1** indicates that when the 2018 surveys were undertaken there were 34 two-way trips along Bee Lane during the AM peak period and 55 two-way trips during the PM peak period. **Figure 1.2** highlights that the 2021 surveys are not dissimilar to the 2018 flows across the bridge with 40 two-way trips during the AM peak and 17 trips during the PM peak. Flows throughout the day remain low with few observed conflicts.

Proposed Traffic Generation

7. In order to consider the potential increase in vehicular trips along Bee Lane for a development scale of 40 dwellings, the same trip generation methodology as set out within the TA has been utilised. This assessment considers the typical AM and PM peak periods and utilises the existing turning manoeuvres at the Bee Lane / B5254 Leyland Road / The Cawsey junction to consider the trip distribution of these trips. **Figure 1.3** provides a summary of this information.



**Figure 1.3: Proposed Development Trip Generation (40 dwellings)**

8. **Figure 1.3** highlights that if 40 dwellings were accessed off Bee Lane there could be an additional 19 two-way vehicle trips during the AM peak period and 22 two-way vehicle trips during the PM peak period using Bee Lane.

## Bee Lane Access Arrangements

9. Pedestrian and cycle access is currently provided along Bee Lane, along with access to a number of existing properties which will be retained as part of the development proposals. As outlined in **Figure 1.1** and **Figure 1.2**, this route is currently lightly trafficked with low vehicle speeds which facilitates active travel use with minimal conflict.
10. The proposed new vehicular access from Bee Lane will be provided from the existing adopted highway and will take the form of a simple priority junction. The simple priority junction will provide a width of 5.5 metres with 2 metre-wide footways around each radii. Visibility splays of 2.4 metres by 43 metres can be provided in both directions, and as shown in **Figure 1.1**, vehicle flows have been observed to be low in the vicinity of this proposed access.
11. As highlighted in **Figure 1.3** there would be 15 departures from the site during the AM peak period and 4 arrivals. During the PM peak period there would be 15 arrivals and 7 departures during the PM peak period. These trips once distributed across the peak hour would equate to a new vehicle trip every 3 minutes during the AM and PM peak period.
12. As noted in the TA, the Bee Lane bridge over the West Coast Mainline has a width between the parapets of approximately 6.5 metres and the route at this point is straight with good forward visibility. Given the observed low vehicle flows and speeds at present, and the fact that all users have good visibility of each other, the design within the TA to accommodate the predicted use of this bridge (including pedestrians, cyclists, micro-mobility users, cars and delivery vehicles, all in relatively low volumes) assumes a pedestrian prioritised street arrangement, where vehicles are perceived as 'guests' in this environment.
13. The low flows, and observations recorded of all movements along the existing bridge, led to the judgement that the existing carriageway would remain suitable as a shared surface to accommodate the future predicted use by all modes, where no single form of transport is afforded priority. There have been no recorded accidents on the Bee Lane bridge in the last 15 years.
14. Whilst this remains a reasonable option, it is acknowledged that Network Rail perceive there to be an increased risk of vehicles striking the structure as a result of collision avoidance action. To assist in providing options which demonstrate that perceived risks can be managed and minimised, consideration has been given to the more formal delineation of a route for active travel purposes, and the creation of a give-way priority working for motor vehicles. This is the principle adopted at the Flag Lane bridge and at the Coote Lane bridge. A possible, but not necessarily unique, layout is presented in **Figure 1.4**.

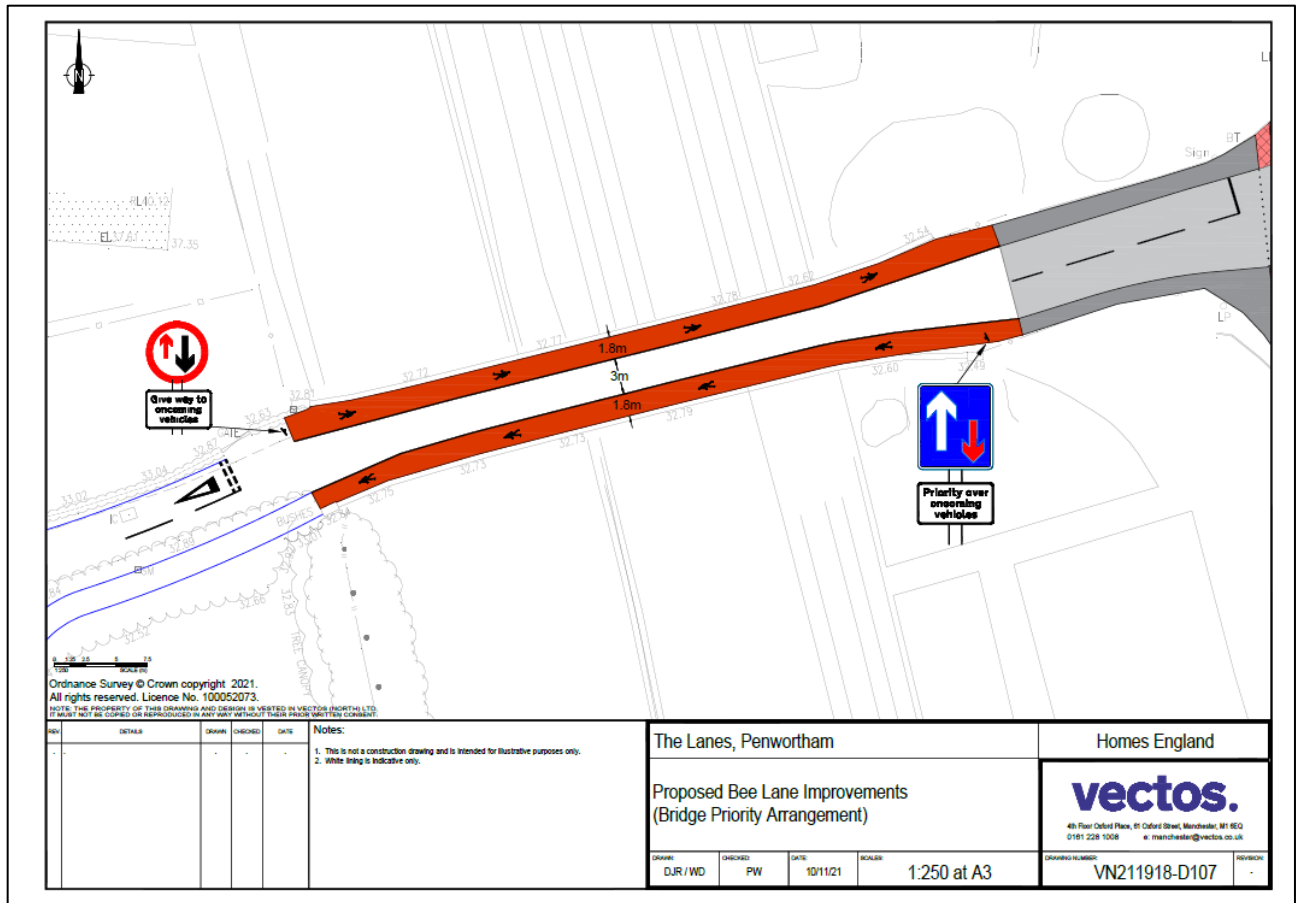
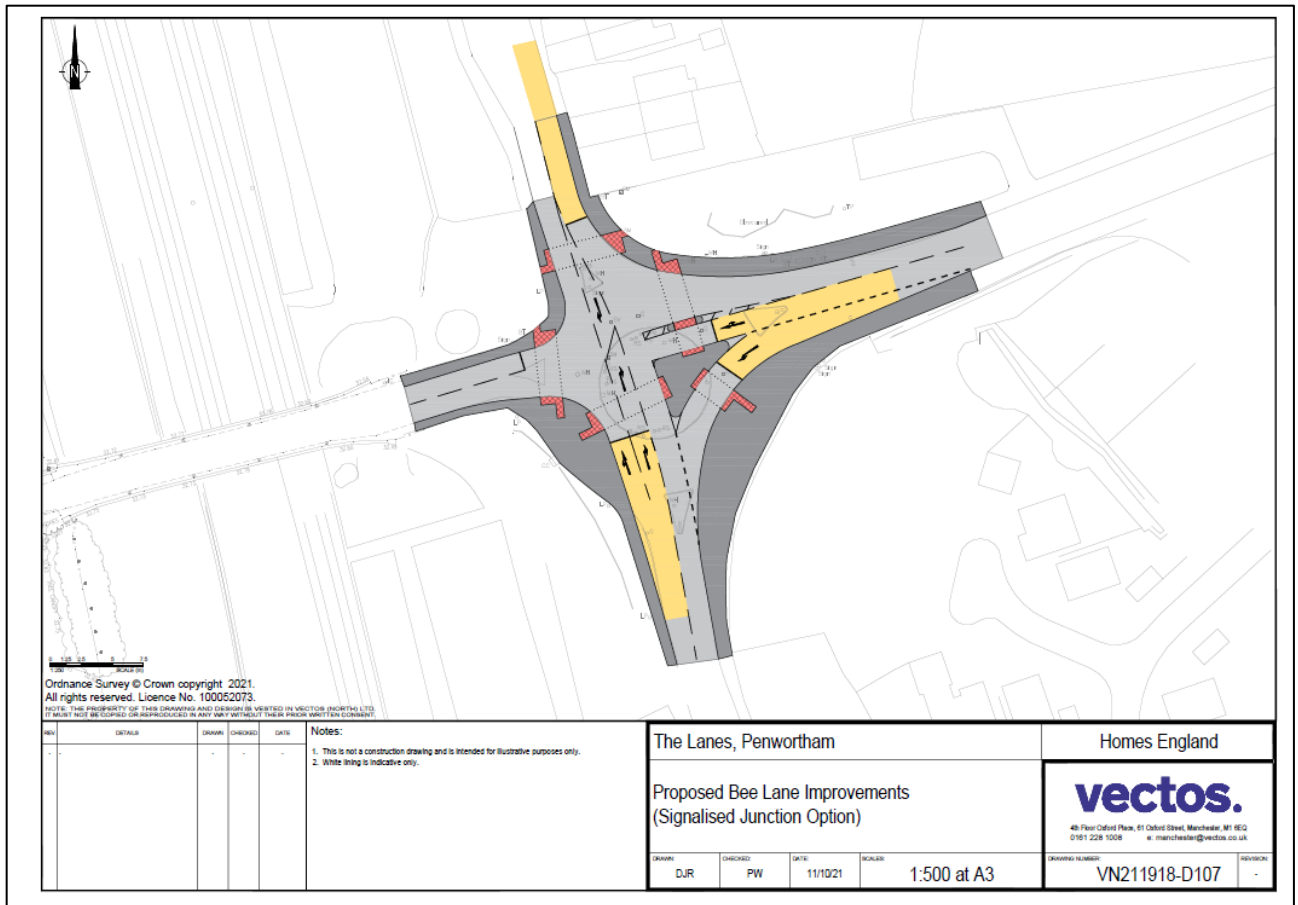


Figure 1.4: Possible Option for Delineation of Bee Lane Bridge

B5254 Leyland Road / Bee Lane / The Cawsey Junction Improvements

- 15. As part of the planning submission, active travel infrastructure improvements to the Bee Lane / B5254 Leyland Road / The Cawsey junction were suggested, building upon initial comments provided by LCC Highways in July 2021.
- 16. An improvement option to provide controlled crossings is presented **Figure 1.5** with the aim of improving active travel connections to and from the east, including links to the Old Tram Line providing active travel access to Preston city centre and Preston railway station. All works are contained within the adopted highway.
- 17. The improvement will provide controlled crossings at the Bee Lane / B5254 Leyland Road / The Cawsey junction and would not only assist with active travel movements at the junction, but a better balancing of traffic movements on the highway.
- 18. Space is provided within the layout to best accommodate turning movements through the provision of a right turning lane at the B5254 Leyland Road northbound stop line, separate right and left turning lanes at The Cawsey stop line and space within the junction to allow right turning vehicles to sit without blocking the ahead movements on the B5254 Leyland Road corridor.



**Figure 1.5: Bee Lane/B5254 Leyland Road/The Cawsey Active Travel Improvement Option**

19. The new junction arrangement has been modelled as part of this review and a comparison completed between the existing layout and proposed layout.
20. In the existing roundabout layout scenario (in the 1,350 unit development test), queueing is predominantly focussed on the B5254 Leyland Road northbound approach to the roundabout and The Cawsey approach.
21. With the roundabout upgraded to a signal controlled junction, the queues become more evenly spread across the junction. In this scenario, queues increase on the B5254 Leyland Road southbound approach, but reduce on the B5254 Leyland Road northbound approach.
22. The impact on journey times is that there are some increases in journey times on the B5254 Leyland Road southbound, whilst journey times on the northbound route reduce. The change in journey time along the B5254 Leyland Road is presented in **Figure 1.6** for a period between 0700 – 1000 and **Figure 1.7** for a period between 1600 – 1900.

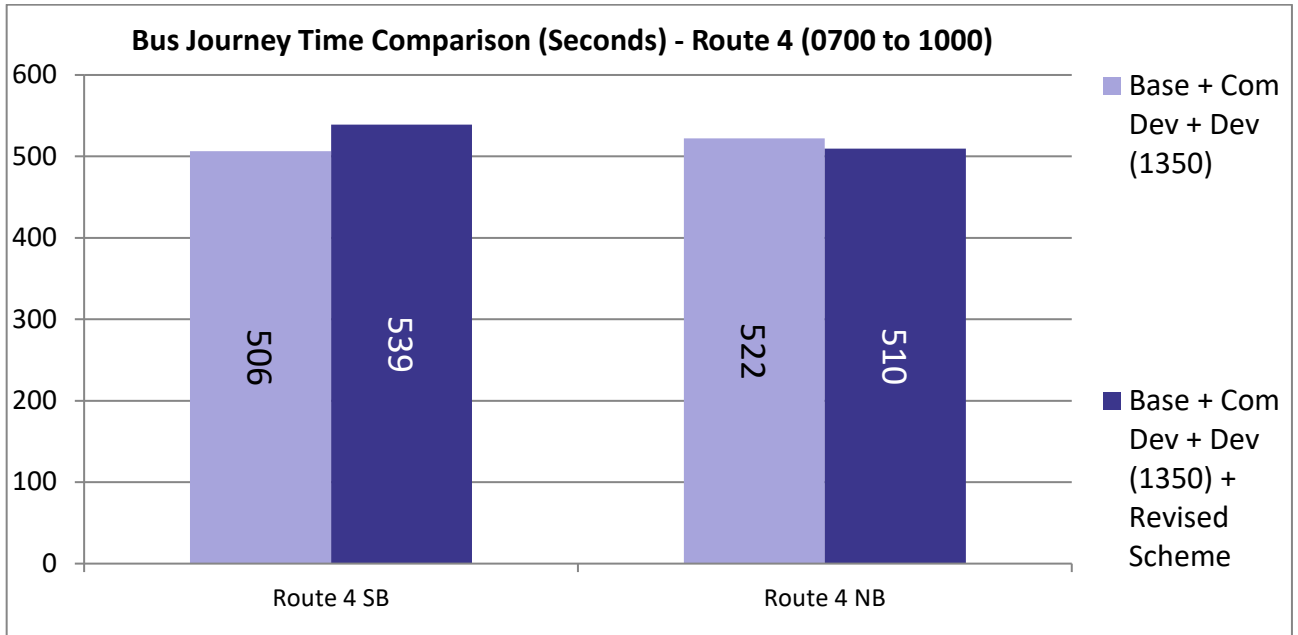


Figure 1.6: Journey Time Comparison B5254 Leyland Road / Bee Lane / The Cawsey Junction (0700 – 1000)

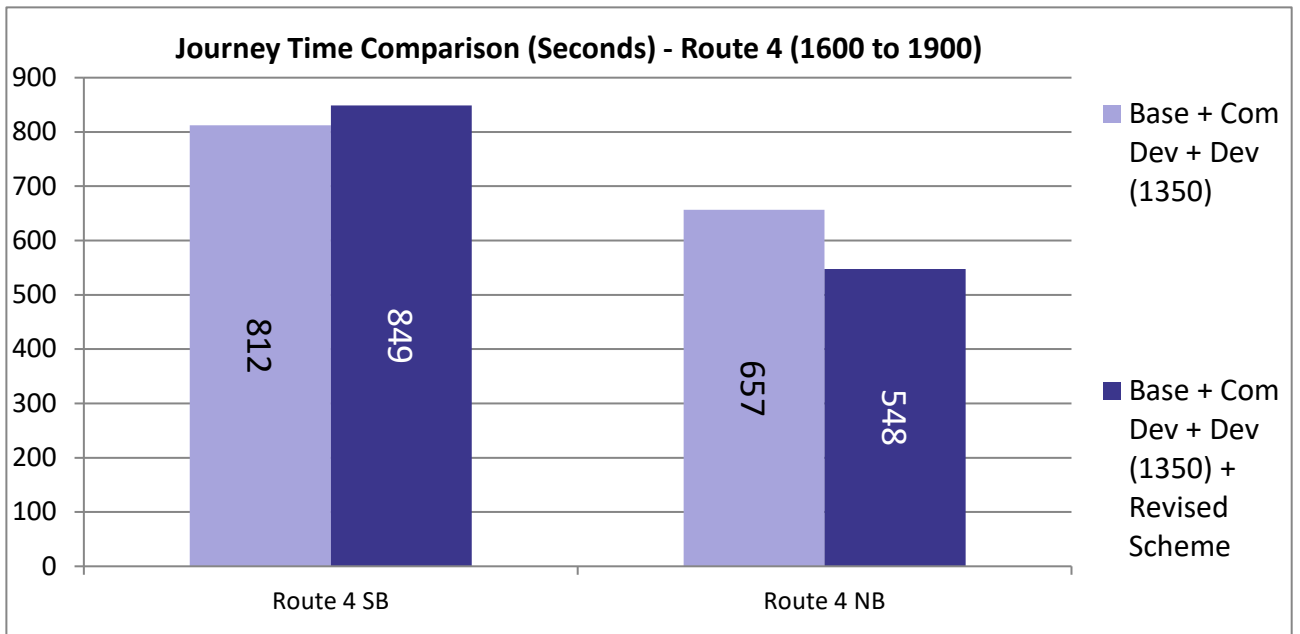


Figure 1.7: Journey Time Comparison B5254 Leyland Road / Bee Lane / The Cawsey Junction 1600 – 1900

23. Overall, it can be concluded that the improvement will provide controlled crossings at the Bee Lane / B5254 Leyland Road / The Cawsey junction and would not only assist with active travel movements at the junction, but a better balancing of traffic movements on the highway.

24. There is substantial advantage for active travel users and for control of the network, and so this is a case of providing betterment for walkers and cyclists, with marginal disbenefit for road users in the commuter peak periods, and no noticeable disbenefit at other times.

## Summary

25. This note has been prepared to consider the existing traffic using Bee Lane and the proposed increase in trips with vehicular access for 40 dwellings provided from this location.
26. The 2018 and 2021 surveys indicate that traffic flows on Bee Lane are currently very low, with low speeds and no record of accidents in the last 15 years.
27. The review of the existing access arrangements along Bee Lane suggests that all users have good visibility of each other with the design presented within the TA assuming the retention of the pedestrian prioritised street arrangement, where vehicles are perceived as 'guests' in this environment, as is currently the case.
28. As only a small number of additional vehicle trips would use this link to access the proposed development, this arrangement is still reasonable. However, to assist in providing options which would also be capable of accommodating all road users as a result of the development proposals, consideration has been given to the more formal delineation of a route for active travel purposes, and the creation of a give-way priority working for motor vehicles. This is the principle adopted at the Flag Lane bridge and at the Cote Lane bridge and is not necessarily unique.
29. In addition to the review of movements across the Bee Lane bridge, a further review of the operation of the Bee Lane / B5254 Leyland Road / The Cawsey junction highlights that with the introduction of controlled crossings, there is a substantial advantage for active travel users and for control of the network, with only marginal disbenefit for road users in the commuter peak periods.
30. Based on this review, it can be concluded that Bee Lane is able to accommodate the proposed development without having a significant impact on the operation of the network or road safety.