

Comments on North West Leeds Transport Forum Discussion Document Proposals for Hyde Park Corner

Context

- 1.1 I was approached by Bill McKinnon to give a view on the proposals outlined in North West Leeds Transport Forum's (NWLTF) discussion document, dated July 2015, for the junction at Hyde Park Corner (section 5 , page 5 of the discussion document).
- 1.2 Living in Huddersfield, and commuting daily to Leeds by train, I have no interest to declare in any of the proposals or schemes that have previously been proposed or are currently being considered with regards to the A660 Headingley Lane corridor. I have reviewed the proposals in the NWLTF discussion document from the position of an impartial observer.
- 1.3 I have both undergraduate and Masters level qualifications in Computer Science and worked for almost twenty years as a software engineer, during which time I established my own software business developing process control and data analysis applications. I subsequently retrained as a transport planner, gaining an MSc from The University of Leeds in 2008. I worked for a short time as a consultant at Arup in Leeds, and have also worked for Kirklees Highways service, though not directly in the transportation section. I recently completed a PhD in transportation related discipline, and now work for The University of Leeds.

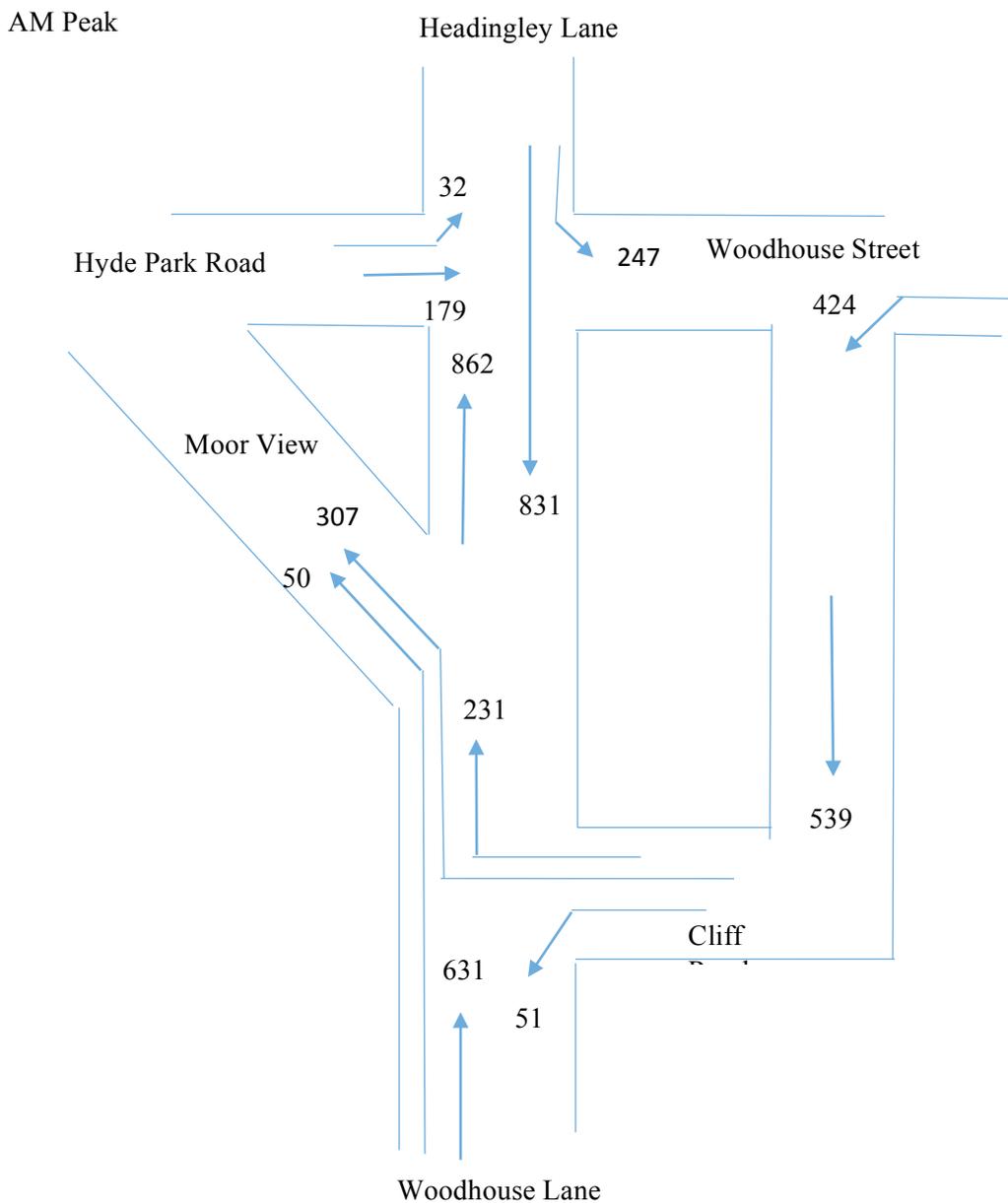
General Comments

- 2.1 The main objective for all the proposals that have been considered for the A660 Headingley Lane corridor is to influence the individual trip making behaviour by making public transport more attractive relative to car, through:
 - increasing the speed of the public transport or decreasing the speed of car trips,
 - removing capacity for private traffic from the network so as to reduce the total number of trips that are possible
 - macro-economic measures through the use of fares subsidies or through vehicle usage charging regimes or by controlling the cost of city centre parking.
- 2.2 The problem inherent in attempting these types of policy intervention along the A660 Headingley Lane corridor and through Hyde Park Corner is that none of these measures (apart from the macro-economic ones) can be effective. The inbound route towards Hyde Park Corner from Headingley is predominately single carriageway with no possibility for converting road-space into bus lanes and hence no easy way of removing capacity for private vehicles. Similarly there is no vacant land around the corridor on which to add a new segregated busway. Furthermore there are no obvious alternative routes into the city from Headingley onto which buses could be rerouted. In short, barring major redevelopment along the length of this radial route, cars and buses will continue to share the single carriageway, meaning that the prevailing speed for buses and cars along this stretch of road will remain largely equivalent. Therefore the only way to attain a time advantage for bus trips is through attention to the junctions along the route, including Hyde Park Corner.

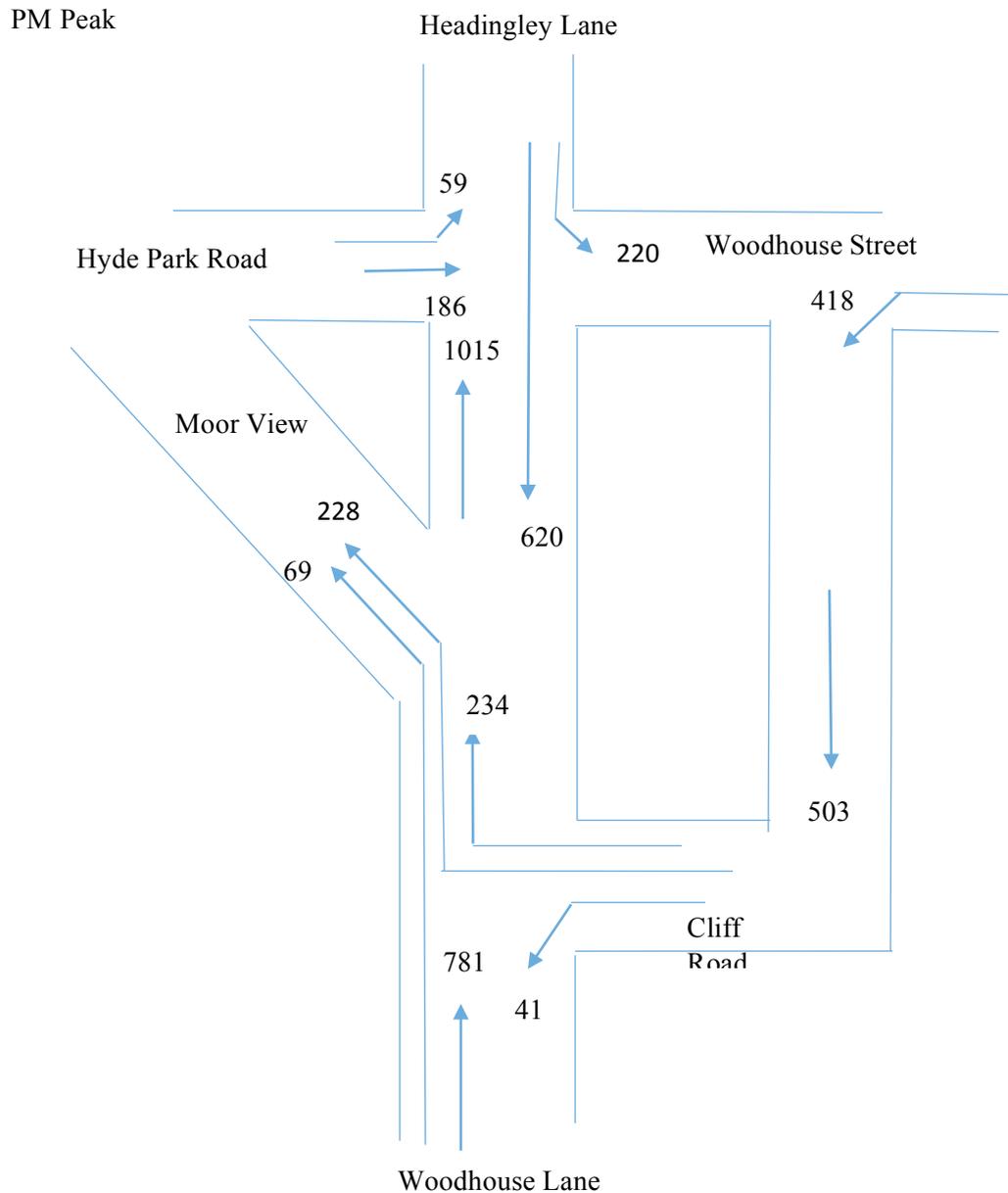
- 2.3 The current vehicle turning counts, taken from NGT planning document APP-6-3-3 (page 22, do nothing case) demonstrate the level of vehicle usage at this junction, with over 1,000 inbound PCUs (a private car = 1 PCU) approaching the junction from Headingley Lane in the AM peak. These movements are in conflict with 600 PCUs across the junction from both Hyde Park Road and Woodhouse Street.
- 2.4 Assuming an inbound bus service frequency of 2 minutes (30 buses per hour), this is equivalent to 60 PCUs (1 bus = 2 PCUs, NGT APP-6-3-1, page 2) meaning that on average for every one inbound bus there will be 16 inbound cars crossing the junction.
- 2.5 NWLTF's proposal for Hyde Park Corner involves a ban on right turns at this junction. Since there is no segregation of cars and buses along Headingley Lane or on the approaches to the junction this will affect cars and buses equally.
- 2.6 The effect of banning right turns will increase the capacity for traffic passing through the junction, and whilst this will certainly improve bus trip times, the same increase will also be experienced by private vehicles using the junction. Far from discouraging private cars from using this corridor, given that there is suppressed peak time demand for trips into Leeds, it is likely that the capacity increase attained through the ban on right turns will encourage more inbound commuters to use Headingley Lane.

Detailed Comments on the proposal for Hyde Park Corner

- 3.1 The current vehicle turning counts, taken from NGT planning document APP-6-3-3 (page 22, do nothing case) can be used to demonstrate the effect of the NWLTF's proposal for Hyde Park Corner.
- 3.2 The reassigned turning counts after the implementation of the NWLTF proposal in the AM peak are shown below:



3.3 The reassigned turning counts after the implementation of the NWLTF proposal in the PM peak are shown below:



3.4 The creation of a one-way link from Woodhouse Lane to Hyde Park Road is more than simply “remodelling Moor View” as implied in the discussion document. The original alignment of Moor View appears to have been tight to the buildings fronting onto Woodhouse Lane and the creation of this link would require a new access to be built across an existing car park, the removal of some trees and the likely demolition of at least one building (old toilet block?). It would also change the character of Moor View, which faces directly onto the park, from quiet backwater cul-de-sac to through route with 357 AM/297 PM peak-time PCUs.

3.5 The cumulative effect of banning right turns at Hyde Park Corner junction implies a considerable increase in right turning traffic from Cliff Road onto Woodhouse Lane (+538 AM/+462 PM peak-time PCUs). As this is a priority junction, the traffic would be

required to cross the southbound Woodhouse Lane flow (831 AM/620 PM PCUs) and find free space within the northbound Woodhouse Lane flow (681 AM /850 PM PCUs). Whilst some gaps in the southbound flow might be created by both the phasing of the traffic signals at Hyde Park Corner and the proposed pedestrian crossing on Woodhouse Lane between Cliff Road and Moor View, gaps in the northbound flow would be more difficult to achieve. Furthermore the proposed pedestrian crossing on Woodhouse Lane between Cliff Road and Moor View would disrupt and block the traffic turning right from Cliff Road whenever the crossing was being used by pedestrians. This volume of traffic implies that the junction of Cliff Road and Woodhouse Lane would also need to be signalised.

- 3.6 “Moving the northbound bus stop to a site just north of Hyde Park Road” would require pedestrians to cross both Moor View (357 AM/297 PM PCUs) and Hyde Park Road (211 AM/245 PM PCUs) and whilst pedestrian crossing facilities are provided on Hyde Park Road no such facilities are planned for Moor View although vehicle flows will be greater.
- 3.7 The phasing of “a new pedestrian crossing just north of Victoria Road” would need to be coordinated with the traffic signals at Hyde Park Corner to provide a platoon of southbound vehicles across the junction and to prevent northbound vehicles from tailing back onto the junction.
- 3.8 The creation of a northbound bus lane “on Woodhouse Lane right up to Victoria Road” is problematic for two reasons. Firstly at the junction of Woodhouse Lane and Moor View left turning traffic (357 AM/297 PM PCUs) would be required to turn in front of any buses using the dedicated bus lane. This implies that a northbound bus lane between Cliff Road and Moor View is unlikely. Secondly, after Hyde Park Corner, the northbound carriageway is currently not wide enough (5.15m to the median) to accommodate two northbound lanes and would require the road to be widened and the footway and one lamp column to be moved with space being taken from the greenspace in front of the advertising hoarding on Headingley Lane.
- 3.9 “Creating a stretch of southbound bus lane on the A660 from Woodhouse Street to Cliff Road” would provide little advantage to buses given that vehicles flowing into this section would be fed from a single mixed lane of buses and cars, and that because after Cliff Road the carriageway would revert again to two mixed lanes. The bus lane would however provide a slight advantage to the car flow in that this would not be disrupted when buses stopped at the southbound bus stop on Woodhouse Lane prior to Cliff Road.
- 3.10 The phasing of the traffic signals at Hyde Park Corner suggests a dedicated N to S and S to N stage followed by a late starting left turn stage onto Woodhouse Street. However, the length of the two narrow lanes at the head of the A660 (south) is limited to 43 metres, with capacity for approximately 6-8 cars in each lane. Given that around 25% of all vehicles will be turning left (23% AM/ 26% PM) the duration of the ahead only stage might need to be limited to prevent left turning vehicles queuing back into the single lane section. The short duration of the first stage may prevent a pedestrian phase being included on the Woodhouse Street leg of the junction. Currently the two lanes approaching the junction on Headingley Lane are relatively narrow at 2.75 metres, meaning that it will be difficult and potentially dangerous for both cars and cyclists to share the same lane (particularly for straight ahead traffic).

- 3.11 The scheme “would give pedestrians more opportunity to cross the A660 (without having to pause on the central reservation) and Hyde Park Road and Woodhouse Street”. The selective banning of turning movements at junctions allows pedestrians to be given greater priority, as in this proposal.
- 3.12 The scheme would “allow for much wider pavements”. This is certainly true on Woodhouse Street, although to an extent the same effect could be achieved by simply banning left turns from Woodhouse Street into Woodhouse Lane, with these trips diverted down Cliff Road. This would allow the triangular island at the corner of Woodhouse Street and Woodhouse Lane to be reconnected to the main footway. However, in other places the footway space could come under pressure, particularly on Moor View and on the A660 between Hyde Park Corner and Victoria Road where an additional bus lane is proposed.
- 3.13 The scheme would “reduce delays for buses”. In a footnote the document acknowledges that delays would be reduced for all vehicles, suggesting that none of the changes proposed for this junction would make public transport more attractive relative to cars, both modes would be affected equally, meaning the overall effect of the proposal for this junction is likely to increase the demand for car trips given the additional capacity released by the changes. The document does acknowledge that bus priority measures elsewhere on the network would ensure that this unfortunate situation would not occur, but a discussion of these changes are outside the scope of this commentary.

Summary

- 4.1 The road geometry and available space at and around Hyde Park Corner means it is not possible to easily segregate car and bus flows, making a workable solution to the issues encountered by users of this junction very difficult to find.
- 4.2 This NWLTF proposal attempts to address the congestion at Hyde Park Corner by banning right turns across the junction. However, the proposal does nothing to increase the attractiveness of bus trips relative to car trips, nor does it reduce the road capacity available for car trips through the junction. Indeed the proposal increases capacity for both cars and buses equally, and in all probability given there is a suppressed demand for road trips into Leeds might contribute to making the overall situation worse, by attracting more cars to this junction and consuming the new capacity released by the changes.
- 4.3 The proposal for Hyde Park Corner is presented by NWLTF as a “modest but nonetheless valuable improvement” (page 2). However, as identified in this document, there are a number of technical issues related to this plan which mean that it is likely to be more difficult and more contentious to implement than is implied in the proposal document. A new section of road would need to be built, other sections widened or narrowed and further junction signalisation would be required.
- 4.4 Overall this proposal represents a classical engineering led approach to a traffic problem. However, it does nothing to alter the balance of capacity allocated between cars and buses, and hence it would be unlikely to solve the long standing traffic issues present at this junction.

Andrew Mark Tomlinson, 26th September 2015