Objection and comments re Planning Application 252498

Submitted by: D J Green

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The following comments are based on the Transport Assessment document and associated plans submitted by the University of Reading in support of its recent planning application number 252498 for a development based on Hall Farm.

I submitted a comprehensive objection to WBC proposals on this site as part of its Local Plan Update which is still available on the Council's website. I remain totally opposed to the development but do not intend to repeat these easily accessible comments which I stand by and which remain highly relevant to the current proposals. I shall try not to duplicate these relevant comments but to attempt to deal with the greater Engineering detail now provided with this new application. My comments essentially refer to those aspects of most interest to me which are the proposals for a new M4 crossing, various changes proposed to Lower Earley Way and to the junctions with Meldreth Way and Mill Lane as well as the two intermediate junctions. I would stress that the comments made below may well be relevant to other aspects of the application but in the interests of readability I have limited my comments to those most important to me. Can I stress that my comments come from extensive professional Engineering experience in these fields of what does and does not work in reality.

I maintained in my original objection that I consider that traffic forecasts have relied on very optimistic levels of modal shift to walking, cycling and bus modes given the demographics of Central Berkshire as highly affluent with high car ownership and use levels, high average salaries and low unemployment levels as well as assumptions on internalisation of trips. None of these factors have been supported by survey work in the local area and so remain rather illogical and speculative. No sensitivity testing has been provided to test the impact of different outcomes and I believe that the traffic produced by the development may well be underestimated by up to 25 per cent. I raised these matters at the recent EIP Hearings but received little in the way of justification of the traffic forecasts used.

I note that the latest TA adopts a fundamentally different approach to traffic forecasts from that used to support the WBC Local Plan Update but seems to arrive at similar figures given the level of infrastructure proposed. Indeed, the new assessment appears to justify a single carriageway M4 crossing rather than the dual carriageway crossing originally justified within the Council's original TA and approved at a full Council meeting. This fundamental change strongly suggests that the new approach is even more optimistic.

Proposed New M4 Crossing Drawing A392-0PA-0120 within the TA shows the vast extent of earthworks needed to cross the M4 at this point with an embankment of almost 10m above ground level at its highest point. The vertical road alignment needed to get up from and back to ground level is extreme for a new road to say the least and especially one aiming to encourage mode shift. The horizontal alignment is similarly less than desirable especially on the north side of the M4 where space is at a premium to tie in with Meldreth Way Roundabout. I assume that this would become an adopted road if built and so WBC needs to assure itself that the basic standards of this new and potentially well trafficked route are acceptable and fundamentally fit for purpose.

Given that what is proposed is now of a fundamentally lesser standard than the dual carriageway previously voted upon by the whole Council together with my concern about underestimation of traffic flows this fundamental change needs to be considered further. Quite clearly the lesser standard would provide little reserve capacity against future growth or greater traffic generation. The lesser standard also would provide no additional space that could be devoted to bus priority and so any bus would join the general traffic stream and suffer similar delay in any queue. This is an issue that was raised at the recent E I P Hearing but the answer given by University representatives was illogical to say the least. The matter of Bus Priority which was such a feature of the WBC LPU has never been detailed despite the dependence given to it to achieve significant mode shift and so keep traffic generated from the development low and will be discussed further later.

The cost of a new crossing is very significant whether as a single or dual carriageway. However, the additional cost of the higher standard when the work is first undertaken would be considerably less than retrospective widening at some later date. Again the comments made on behalf of the University at the recent Hearing that the bridge would be designed to enable future widening seem to have little credence in Engineering terms and the issues of cost, need to extend the earthworks and traffic management issues during these works was totally ignored. The degree of queueing seen every day across the dual carriageway standard University Bridge built recently to support the existing Local Plan build out at Shinfield tends to support my view that the single carriageway crossing proposed here is fundamentally inadequate to satisfy the aims put forward in the LPU.

The degree of visual intrusion caused by the scale of earthworks needed for this new crossing at whatever width standard would adversely impact existing properties along the southern perimeter of Lower Earley. In turn this will be compounded by additional traffic noise generated at high level and the loss of existing tree screening south of Meldreth Way Roundabout. This was also a matter raised at the recent E I P Hearing.

As a final point regarding this proposal for a new M4 crossing could I ask why the link is proposed at this point given the lack of space on either side of the M4 in which

to accommodate the earthworks. As a practical Civil Engineer I would have instinctively looked to put the facility away from the sensitivities of housing at Lower Earley further to the east which would then connect into either a new simpler junction on Lower Earley Way or indeed a much larger arrangement at Mill Lane. I seem to recall that the latter approach was a part of the original proposals for the LPU a few years ago and I fail to appreciate why this was abandoned. There may be additional costs from changes to power lines and flood plains but would avoid the need for extensive works and traffic management along Lower Earley Way and Meldreth Way Roundabout and be more acceptable to residents and road users alike.

New Meldreth Way Roundabout The WBC LPU original TA made references to the new crossing linking into the existing Meldreth Way Roundabout. I have always found this disingenuous at best as the reality is that it was proposed to rebuild completely the roundabout on top of the existing layout with a new central island of approximately twice the size. It is possible to see most of the existing roundabout with the proposed roundabout superimposed upon it on Drawing A392-OPA-0120. In theory many would imagine that a bigger junction per se would provide increased capacity but I discuss whether this is actually the case below.

As any experienced Trafffic Engineer knows the overall capacity of a roundabout is a complex matter and depends upon many design features including the length of lane flaring on each approach to the roundabout, the number of lanes across each give way line and the angle of approach to the give way line. Care is also needed to ensure that adequate lateral deflection is designed to avoid high speed entries. These aspects are key to ensuring that all traffic lanes at the give way lines are adequately supplied with traffic at busy times rather than being constrained by queueing vehicles in front. Much was made at the EIP Hearing by representatives of the University about how Buses would be given priority at the Give Way Lines but failed to explain when challenged how they would avoid being stuck in traffic on their proposed single carriageway on the approach to a busy junction. Inspection of the proposed new roundabout on Drawing A392-OPA-0120 shows very short flare lengths and broadly similar numbers of traffic lanes across the give way lines as shown on the existing roundabout. Consequently, this would suggest similar traffic capacity across those give way lines despite the cost of the new junction.

The other main criteria affecting roundabout capacity of course are the volume of opposing circulatory traffic at each give way line, the degree to which exiting traffic may block back into the junction and the number of circulating traffic lanes available. The existing Roundabout experiences heavy congestion at present and whatever the concerns that I may have about traffic forecasts it is inevitable that even more traffic will arrive at the roundabout if the proposals go forward. It is difficult to judge the impact of all these factors and I would like to be assured that the eventual designs would be rigorously tested individually using the appropriate proprietary software before they move towards being built. Whether this has been done is unclear. If WBC actually propose to provide positive bus priority at this or indeed any other

junction then the details of this must be available at the time of detailed design to judge the overall impact.

I note that at least one signal-controlled Toucan crossing (and possibly more) is shown adjacent to the proposed Roundabout. It should be pointed out that roundabout performance is impacted heavily by queues backing back from isolated traffic signals and blocking an exit. Whilst this is often judged to be acceptable in circumstances of heavy flows of pedestrians and cyclists in existing urban situations it is unusual to say the least to contemplate spending large sums on a new junction and then deliberately compromising its potential performance in such a way. The normal approach for any Highway Authority when controlled facilities for pedestrians, cyclists and buses are required alongside general traffic would be to design a signal controlled junction with ped/cycle and indeed Bus priority facilities designed in from the outset. Anything short of this comprehensive approach will lead to a need for expensive future amendments and poor value for money with the new scheme. This is discussed further later.

Overall, the proposal to build this new junction on top of a live and very busy junction would provide many traffic management challenges over a prolonged period. This is especially so given that Lower Earley Way is a designated traffic sensitive street permitting road works only at off peak times. In addition, the road is the signed diversion route when problems arise on the M4 between J10 and J11 as they do on a regular basis. These issues will drastically extend the construction period as well as the duration of extreme traffic disruption. Consideration also needs to be given as to how to access the new M4 bridge, embankment and roadworks site to avoid worsening the traffic problems at the Meldreth Way Roundabout site.

Mill Lane Roundabout All the points raised about Meldreth Roundabout apply equally to the proposed new roundabout proposed to be built online at this site. The exception may be for the adjacency issues re plant and material access to the M4 crossing site unless it is proposed to access this from the Sindlesham end and haul through the Green space.

Widening of Lower Earley Way. The logic of widening the link between Meldreth Way and Mill Lane Roundabouts to two lanes eastbound and one westbound is an unusual proposal and the logic is difficult to grasp. As the experienced Traffic Engineer will tell you it is generally the junctions on any road that cause problems rather than the link between them. Certainly, this proposal appears to be a reaction to the everyday existing issue of long queues eastbound on this link which stem from capacity issues at Mill Lane roundabout and indeed capacity issues from there northwards towards Loddon Bridge Roundabout. The same Traffic Engineer will also comment that traffic in the morning peak tends to come back in the reverse direction in the evening and so why widen in just one direction? The proposal suggests to me that the proposals have been tested only to serve morning peak hour forecasts and that the proposals have never actually been tested against the evening peak.

A single traffic lane will carry 1200 to 1800 vehicles per hour depending upon the overall efficiency of design at all junctions. However, I am unable to establish the forecast future traffic flows at both peak times to establish the unusual justification for widening in one direction and not the other.

The widening proposed retains the Footway /Cycleway along the north side and so must amount to widening immediately adjacent to the south side of around 3 to 3.65m assuming that some of the existing 1m strip is recycled and not replaced. This will involve new drainage works, possibly new kerbing, removal of green screening as well as moving existing streetlighting and vehicle barriers. Yet again, this work on a traffic sensitive street would involve extensive traffic management over a long period. Is this really a cost effective scheme? In many ways actually building an entire new adjacent 7.3m carriageway offline to the south to achieve a dual carriageway along this section may be easier to deliver and at relatively little extra cost.

I also note that there appears to be a proposal for a 40mph permanent speed limit. Why? The proposal involves increasing the number of traffic lanes in one direction which, per se, would encourage faster driving and overtaking particularly at quieter times of day. A speed limit per se would do nothing at all to address this tendency. I cannot speak for the police here but based on my experience of working with them for years I cannot imagine them supporting a 40mph speed limit in such circumstances and, inevitably, it would receive only nominal enforcement as a result.

Two alternative treatments for the two intermediate lesser junctions accessing two residential estates were put forward but without any particular analysis of the pros and cons of each. My thoughts are covered later.

Lastly, a comment was made by WBC representatives at the EIP Hearing that a 2+1 lane approach on Lower Earley Way would permit future consideration of a Tidal Flow Scheme. From personal experience I would comment that this would be totally impractical and inappropriate in such circumstances particularly in view of the complexities arising from the two intermediate lesser junctions. Inevitably, over such a length, the scheme would also require extensive electronic signs overhead and alongside to identify which lanes were directionally operational at any particular time and with the tidal lane closed for a safe period prior to the point of changeover. Who would fund such an inevitably controversial and expensive scheme?

Possible alternatives. Regardless of my objection in principle to these proposals If the Authority is really to consider taking them forward then can I suggest that some alternative more practical approaches are looked at positively.

Firstly, there is an obvious need to reexamine the proposals for both main junctions as signal-controlled layouts with as much new carriageway as possible built offline to make traffic management easier. My approach for instance at Meldreth Way would be to recreate the layout type adopted at Black Boy Junction with a signal controlled

elongated (E-W) circulation and Peds/cyclists crossing by what Traffic Engineers refer to as “walk with traffic” across the stop lines and concentrated into a safe landscaped central island. The Black Boy example is not quite a perfect example of this approach as for instance there is a remote Ped/Cycle Crossing along Lower Earley Way which duplicates the facility through the central island.

It seems that the southern side of such an approach at Meldreth Way could easily be constructed offline to the south making for a temporary traffic diversion to help with remaining construction work. The approach would also ensure that pedestrians and cyclists had secure and safe crossings without any random impact on overall traffic flows and junction capacity. This approach is common locally and nationally with much success.

Care must also be taken to provide sufficient stacking space to make each approach stop line work as efficiently as possible to avoid “gapping out” of traffic and waste of signal green time. The approach may also need some limited downstream exit widening rather than the strange approach of widening in one direction across the entire link.

My suggested approach would also embrace any need for positive bus priority to be designed in from the start and controlled through the traffic signals.

I recommend that a similar approach to any changes to **Mill Lane Roundabout** be examined. If successful, this approach would help to develop an effective traffic signal controlled corridor from M4 J11 through to Winnersh Triangle. Consideration then needs to be given to the best way to link and control every junction on a corridor/time of day basis for maximum benefit for all. This is meaningful Strategic Traffic Management in a nutshell rather than the rather ad hoc approach of mixing roundabouts and traffic signals haphazardly currently being proposed and unlikely to work effectively into the future.

The choice of what to do with options for the two lesser junctions between the two major junction sites is key to overall decision making. The option of banning right turns would clearly displace further traffic demand to the two major junctions with adverse impact on their traffic capacity. Such an approach would also be likely to draw a weight of objection from residents affected by fundamental change to their access. The approach of developing a signal controlled corridor would suggest the logic of designing these intermediate junctions as linked signal controlled layouts.

Conclusions It is stressed that all of these elements of the proposals need to be considered collectively rather than independently as appears to have been the case so far. In addition, care must be taken to test the individual elements against the potential for design traffic being greater than anticipated to ensure that the finally delivered projects work effectively into the future if indeed they are ever built. It is also essential that the proposals are designed with buildability and temporary traffic

management uppermost in mind on what is already a traffic sensitive route subject to extensive delay.

In short, I still object strongly to both the overall development and particularly to the proposals so far put forward which massively affect Lower Earley and Lower Earley Way. I stand by my reasons for this both in my original LPU objection as on the WBC website and as discussed above. However, if the Council actually intends to support this current application despite extensive public concern then I trust that my alternative approach is viewed positively to ensure that a practical, resilient, workable solution can be constructed as smoothly as possible.

I have long experience in these matters and would be happy to discuss further if this would help.

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