

High Wycombe Town Centre Masterplan

Quality Audit Review

July 2011

1. Introduction

1.1 In order to meet the objectives for the town centre, the masterplan proposes important changes to the town centre highway network, and in particular the creation of an alternative cross-town route linking Marlow Hill to West Wycombe Road via Desborough Road. One of the main objectives for this alternative route is not to recreate the severance and problems of Abbey Way flyover in another part of the town centre and to balance the needs of all users. To contribute to achieving these objectives the new street network design has been developed based on the design approach and standards set out in Manual for Streets.¹

1.2 A key element of the Manual for Streets design approach is the undertaking of a Quality Audit. Quality Audit is a process whereby a series of discrete evaluations are collected and given due consideration within the design process throughout the lifetime of a project.² At this stage in the development of the proposals a Quality Audit has been undertaken on the concept design drawings. The design has been subject to the following evaluations:

- Stage 1 Safety Audit
- Transport for Buckinghamshire Design & Construction Team evaluation
- Evaluation from Ben Hamilton-Baillie Associates
- Testing through the town centre traffic model

1.3 This document summaries the comments that were received through these evaluations and sets out the Project Team's response to them, taking into account all the issues arisen and seeking to achieve a balanced response.

¹ Manual for Streets (DfT, 2007); Manual for Streets: Wider Application of the Principles (CIHT, 2010). See High Wycombe Town Centre Masterplan Background Paper (WDC & TfB, July 2011) Chapter 7 for further information.

² Manual for Streets: Wider Application of the Principles (CIHT, 2010), para. 4.4.1

KEY DESIGN PRINCIPLES

	Safety Audit	B H-B Feedback	TfB D&C Review	Decision Taken
LANE WIDTHS			<ul style="list-style-type: none"> • 3.0m appears to be the limit which is politically acceptable and this must be clarified for this scheme. • At pedestrian crossings, narrowing to 5.5m increases the risk of wing mirror collisions and overhanging footway (where pedestrians are likely to be standing). Careful consideration needs to be given to this design. 	<ul style="list-style-type: none"> • Lane widths have been considered in relation to expected flow and frequency of vehicles, including HGVs. HGV flows are reasonable low so the likelihood and risk of two passing together as described in comments is relatively low.
CYCLE LANES			<ul style="list-style-type: none"> • The low speed environment targeted is more cycle friendly and provision of cycle lanes will be to the detriment of footway widths. • Will also reduce the traffic calming effect of narrow lanes. • Only perhaps consider cycle lanes if there is a steep uphill gradient. Need to confirm cycle numbers / alternative routes? • In heavy traffic a slow 	<ul style="list-style-type: none"> • Agreed that scheme is not promoting / designing for the provision of cycle lanes. Through designing a scheme which delivers slow and steady speeds cyclists should feel comfortable enough to cycle within the carriageway.

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			cyclist will hold up traffic – central median would where provided allow vehicle to overtake safely	
BUS LANES		<ul style="list-style-type: none"> Suggestion that bus lanes don't work well in urban areas with lots of 'side interference'. Suggestion that bus lanes are eliminated from the design 		<ul style="list-style-type: none"> Agreed that bus lane was required along Desborough Road to help bus journey time reliability. There are opportunities to re-look at provision of bus lanes in Bridge Street when design of street is considered in detail. Interim modelling results showed that general traffic in this location was light which may result in bus lanes being unnecessary. Consider how to differentiate bus lane at Swan Frontage within design detail.
ROAD HUMPS			<ul style="list-style-type: none"> Not ideal for buses or emergency vehicles. BCC policy not to introduce road humps on bus routes. TAL 02/96 recommends that to achieve average speeds of below 16mph a 1:15 gradient or steep is required. This is below the design speed of 20mph and therefore drivers are likely to accelerate away from the humps 	<ul style="list-style-type: none"> Raised pedestrian crossings are part of a package of measures to reinforce slow speeds and change driver behaviour. Others include narrow carriageway widths, visual narrowing, evenly spaced ped. crossing points. In relation to bus routes, the top of the crossings are wide & would accommodate the axle of the bus; no raised crossings are proposed just before bus stops (in line with guidance), existing raised ped. crossings on Frogmoor.
MEDIAN		<ul style="list-style-type: none"> The median strips don't 	<ul style="list-style-type: none"> Would recommend the 	<ul style="list-style-type: none"> Median strip proposed has 25mm

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		necessarily need to be 1.5m – they can be less where this enables the apparent width of the street to be narrowed to further slow traffic.	<p>25mm kerb upstand – a painted/antiskid strip would not give pedestrians any confidence, particularly if only 1.5m wide. This can be easily overrun if required, but most cars will avoid driving across. This will provide improved pedestrian confidence if they use the median to cross the road in two stage.</p> <ul style="list-style-type: none"> At key pedestrian desire lines, a wider median 2-3m should be provided if possible 	upstand
OVERRUN AREAS			<ul style="list-style-type: none"> Careful consideration must be given to the material and construction of these - long term maintenance implications should be taken into account. An uneven surface may deter car drivers from using the area, but they are unsuitable for pedestrians to walk across and should not be used where there is a pedestrian demand. 	<ul style="list-style-type: none"> Do not want overrun area to be a third material added into the street. To be either the same as carriageway or footway. Do not need to specify material to be used at this point.
APPROAC-		<ul style="list-style-type: none"> Two lanes at 		<ul style="list-style-type: none"> Interim modelling results had

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HES TO JUNCTIONS		roundabouts are proposed to stack traffic, but under slow, steady flow, the advantages of this stacking approach are much less. Using single lanes would allow for less dominance within the street.		shown at certain junctions 2-lane capacity was required for anticipated traffic flows. <ul style="list-style-type: none"> • Difficulties for pedestrians crossing two lanes of traffic was raised. • See junction specific comments.
ROAD MARKINGS	<ul style="list-style-type: none"> • <i>Problem – Due to a lack of road markings, priority will be difficult to establish.</i> Consideration should be given to the use of road markings or traffic signals in those areas which may be subject to significant congestion. 			<ul style="list-style-type: none"> • Continue with approach advocated by MfS where the use of design markings has been kept to a minimum at this design stage
PEDESTRIAN CROSSINGS	<ul style="list-style-type: none"> • <i>Comment – Raised junction entry treatment.</i> The height of the raised crossing should be kept to a minimum and ramps should not be at an excessive gradient. • <i>Problem – Provision for the visually / mobility impaired.</i> Safe crossing points should be provided throughout the scheme with 	<ul style="list-style-type: none"> • Locations and angles of crossings are important, and design speed of the road is key to them working. Concern that the scheme as yet has not delivered the design speed necessary. • Pedestrian movements are not necessarily in straight lines – crossing points therefore don't need to be either 	<ul style="list-style-type: none"> • Should pedestrians be encouraged to cross throughout the scheme and not just at key pedestrian crossing points? More emphasis on pedestrian crossing near to some junctions and possible desire lines – such as near to the roundabout of Desborough Rd and Bridge St. 	<ul style="list-style-type: none"> • Pedestrian surveys to be undertaken to increase understanding of movements & inform design • Opportunities for diagonal crossing points identified below at specific locations

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	appropriate measures to facilitate their use by the visually/mobility impaired.			
STREET FURNITURE			<ul style="list-style-type: none"> The position of street furniture should be consistent to create clear paths along the street. Placing all street furniture at front of footway would create a 'safe zone' at the rear which would improve pedestrian confidence around areas such as raised junctions. 	<ul style="list-style-type: none"> Design is not precluding the implementation of street furniture, trees etc. Type, location & frequency to be considered in further detail at later stage

SPECIFIC AREAS

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JUNCTION OF BRIDGE STREET / OXFORD ROAD / BELLFIELD ROAD	<ul style="list-style-type: none"> <i>Comment – Loss of / lack of controlled pedestrian crossings.</i> Consider providing a crossing point (informal or formal) into the design on Bellfield Road 	<ul style="list-style-type: none"> Recommended design of Oxford Road and Bridge Street to create a strong frame around the space, or put something in the centre. Suggested changing the medians so that they do not reflect turning radii, and avoiding orthogonal changes in materials as curves and diagonals help to change driver behaviour, and more 	<ul style="list-style-type: none"> Appears to be very engineered through the use of refuges/islands No road markings are shown and it is unclear whether a priority junction or informal junction is intended The taxi ranks are located in the centre of the road adjacent to narrow lanes – may create problems with 	<ul style="list-style-type: none"> Modelling shows that two lanes required on Bellfield Road (north & south) onto West Wycombe Road Unwillingness to signal junction unless absolutely necessary (implications for traffic flow & urban realm) Uncertainty of usage of pedestrian flow across Bellfield Road east-west – will be confirmed by pedestrian surveys.

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		<p>closely reflect pedestrian desire lines.</p> <ul style="list-style-type: none"> Recommend removing the double entry lanes at the Sainsbury's junction, turning this into a less-formal junction and eliminating markings - gains to placemaking. 	<p>passengers boarding taxis.</p> <ul style="list-style-type: none"> Very formal pedestrian crossing points – not necessarily on pedestrian desire lines. 	
BRIDGE STREET		<ul style="list-style-type: none"> Needs a further level of detail – recommend replacing or eliminating centre lane markings. Recommended that Bridge Street and Oxford Street be kept simple. 	<ul style="list-style-type: none"> A shared space approach could be adopted encouraging very low speeds e.g. Queen Street in Oxford. With flush surface but with paving which clearly indicates where the safe footway is located. Need to confirm the junction control at the Bridge St / Oxford Street Junction - is it signalised? 	<ul style="list-style-type: none"> Area identified as opportunity for shared space design approach when considered in more detail. Opportunities to re-look at provision of bus lanes in Bridge Street when design of street is considered in detail. Interim modelling results showed that general traffic in this location was light which may result in bus lanes being unnecessary. Pedestrian crossing points at northern end of Bridge Street (junction with Oxford Road) considered unnecessary. Pedestrians probably crossing diagonally in this location.
JUNCTION OF WEST WYCOMBE ROAD & WESTBOURNE STREET	<ul style="list-style-type: none"> <i>Comment – Currently no proposals to indicate how the entrances to the new urban realm of the town centre will be emphasised. Provide</i> 	<ul style="list-style-type: none"> Very strong concerns about using signals here, as it will send the wrong message and will release platoons of speeding drivers onto Oxford Road. 	<ul style="list-style-type: none"> Undesirable to have signalised junction as the gateway to the scheme. Traffic signals can encourage higher speeds to make drivers beat the red light. 	<p>Roundabout design:</p> <ul style="list-style-type: none"> ✓ Helps achieve urban realm objectives & fits in with overall approach ✓ Helps lower traffic speeds ✗ Multiple-lane approaches (required for capacity) makes it difficult for peds.

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	<p>'gateways' on all entrances & exits to the zone to make drivers aware of the change in conditions & change in priority.</p> <ul style="list-style-type: none"> • <i>Comment – Steep gradient may cause difficulties for HGVs.</i> Consider the gradient to help ensure HGV's can use the roads unimpeded or that they are appropriately signed. 	<ul style="list-style-type: none"> • It would be much better if the gateway to the town centre were before rather than after this junction (west of junction). • Strong recommendation for a roundabout here. 	<ul style="list-style-type: none"> • Signalised junction only if modelling rejects alternative concepts which provide more free-flow. • Overrun areas may be visually intrusive and cause problems for pedestrians. • Opportunity for Public Realm space on corners of junction to highlight change in character of the road. • Only single raised crossing to slow vehicles down on Westbourne St. 	<p>to cross</p> <ul style="list-style-type: none"> × Potential land take implications <p><u>Signalised junction:</u></p> <ul style="list-style-type: none"> ✓ Allows for ped. crossing safely across multiple lanes ✓ Has capacity required (multiple lanes approaches required through modelling) × Does not control traffic speed, particularly vehicles moving away from junction <ul style="list-style-type: none"> • Action: Continue to show signalised junction but through design detail will prepared overall design for junction and all 3 arms which influences driver behaviour and lowers speed.
JUNCTION OF DESBOROUGH ROAD & WESTBOURNE STREET		<ul style="list-style-type: none"> • Design in an over-runable centre island which would function as a 'circular priority area'. • Concerned that design as illustrated loses legibility of Desborough Road. 	<ul style="list-style-type: none"> • Only significant change is to provide a central median. Perhaps more could be made of the streetscape to change the appearance of the road to reflect the change in character? • The inner radius is very tight – (10-12m?) • Overrun area is not attractive or suitable for pedestrians to cross. 	<ul style="list-style-type: none"> • Safety Audit team to include assessment of visibility splays information within Safety Audit • See comment on over-run areas above
JUNCTION OF		<ul style="list-style-type: none"> • A mini-roundabout was 	<ul style="list-style-type: none"> • Design of these 	<ul style="list-style-type: none"> • Further design work to be

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DESBOROUGH ROAD & BRIDGE STREET		considered the best balance between vehicle and pedestrians, but buses are a big issues at this junction. Approach speeds of drivers was very critical to making this work, as a slow steady speed encourages 'merge-in-turn' behaviour from drivers and therefore if the design speed was being achieved a more informal approach could be adopted here	<p>roundabouts is in accordance with TSRGD.</p> <ul style="list-style-type: none"> • MfS2 does states that the markings can be visually intrusive and that designs have been successful that encourage drivers to adopt circulatory priority, but are in fact uncontrolled junctions. • Concern over using mini-roundabouts on such high vehicle flows. • Opportunities for pedestrians to cross is not evident. More emphasis on pedestrian crossing near to some junctions and possible desire lines • Layout of raised table is not aesthetically pleasing with different lengths block paving on different arms/lanes. If block paving is to be used, then a novel pattern could be introduced. • More needs to be done to create a different look (placemaking). 	<p>undertaken at later stages including pedestrian crossing points (informed by ped. surveys) and materials to be used.</p> <ul style="list-style-type: none"> • Potential to re-look at multi-lane approach to roundabout (particularly if traffic flow less on Bridge Street)
DESBOROUGH ROAD (Outside)			<ul style="list-style-type: none"> • Much more could be made of the entrance to the Eden Shopping 	<ul style="list-style-type: none"> • More detailed design work to be undertaken on this area at next stage

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Eden)			<p>Centre to create a quality public space (possibly combined with Rutland Street)</p> <ul style="list-style-type: none"> • Pedestrian desire line is not directly across the road, but at angles – therefore a shared space concept may accommodate this more. 	
LILY'S WALK	<ul style="list-style-type: none"> • <i>Problem – Vehicular approach to the existing multi-storey car park.</i> Consider switching the two lanes so that buses use the central lane • <i>Problem – Enforcement of left turn only.</i> Introduce some form of street furniture / soft landscaping on central median to prevent this manoeuvre whilst retaining good visibility. • <i>Problem – Location of existing pedestrian crossing.</i> Relocate the crossing slightly further away (westward) from its current location. 	<ul style="list-style-type: none"> • Recommended that if a bus lane is absolutely necessary on Lilly's walk that it be designed into the centre of the street rather than the nearside, so that cars are not turning into the car park in front of buses. 	<ul style="list-style-type: none"> • Design of street needs to be coordinated with the development proposals – If the frontage is quite active it should influence the highway design and reduce the scale of the street. • Would a central bus lane remove conflict between buses and traffic entering car park? Possible delays to buses if traffic queues across bus lane. • If the eastbound lane is buses only – are the bus lane markings necessary? 	<ul style="list-style-type: none"> • Agreed to move location of bus lane to central lane to address issues raised • Enforcement of LH turn only through design, to be considered in more detail at later stage • Crossing point proposed is replacing existing zebra crossing. Currently located on desire lane opposite entrance to shopping centre. While acknowledging proximity to car park entrance, it was considered better to provide a crossing point at this location where there is demand rather than pedestrians crossing independently and at random

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GAS WORKS LINK	<ul style="list-style-type: none"> <i>Comment – Steep gradient may cause difficulties for HGVs. Consider the gradient to help ensure HGV's can use the roads unimpeded or that they are appropriately signed.</i> 		<ul style="list-style-type: none"> New link steep gradient of road and footway needs confirming. Need to confirm vehicles tracking path. Are give-way marking on Lily's Walk junction missing? 	<ul style="list-style-type: none"> Action: Safety Audit team to include assessment of gradient information within Safety Audit Action: Show give-way markings at junction on design drawings
QUEEN ALEXANDRA ROAD	<ul style="list-style-type: none"> <i>Comment – Queuing traffic on the approach to hospital. Consider the use of this road & whether or not the hospital entrance can be improved or create more vehicle stacking space within the hospital grounds</i> <i>Comment – It is proposed to relocate the parking bays currently located on the northern side of carriageway. Reconsider the need to relocate the bays.</i> <i>Problem – Proposed new build-out. Provision made to accommodate access to existing driveways. Consideration should be given to an informal</i> 	<ul style="list-style-type: none"> Additional measures are necessary to reduce vehicle speed – visual narrowing will be important. 6m width carriageway seems a sensible width along QAR. Loaks Road is not significant enough in the design of the street. QAR/Suffield Road – recommend significantly widening the median strip in this curve as it still appears 'too fast' Junction of GWL/QAR/Suffield Road - recommend redesigning the bump-out as a distinctive feature. Needs an end place on this corner to help guide traffic were to go and to slow down 	<ul style="list-style-type: none"> No real benefit for trying to introduce median on whole length for peds. Significant numbers of emergency vehicles. Parking bays may block a few private driveways at western end. Central median near to Suffield Road junction does not provide good crossing point for pedestrians if frequently run over by large vehicles – is there a pedestrian demand here? Uneven overrun area may be difficult for pedestrians to cross. 	<ul style="list-style-type: none"> Potential for diagonal crossing points on QAR outside hospital to serve desire lines to hospital entrance and Marlow Hill. Median along QAR acts as a visual narrowing prompt, as well as providing places for pedestrians to cross. Action: Agreed to remove western parking bays to allow access to properties. Remove from design drawings and replace space with widen footway and potential opportunities for tree planting / street furniture Central median near to Suffield Rd junction not being provided for pedestrian crossings per se (not expecting large demands), but more as an over-run area for vehicles. Action: Retain build-out at Suffield Road junction. Only one driveway affected and there is potential for rear access to property

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	<p>pedestrian crossing near to this location.</p> <ul style="list-style-type: none"> • <i>Comment – Proposed pedestrian crossing.</i> Consider retaining the existing zebra crossing (close to roundabout) to reflect desire line. 	<p>drivers with visual features.</p>		<ul style="list-style-type: none"> • Agreed that build out should be designed as a distinctive feature ('end point') but this would be done in detail at a later stage • Acknowledged that emergency vehicles use QAR. See comments above re gradient & length of raised crossing points. In addition Lily's Walk would be available for emergency vehicle access (as alternative to QAR)
MARLOW HILL	<ul style="list-style-type: none"> • <i>Comment – Currently no proposals to indicate how the entrances to the new urban realm of the town centre will be emphasised.</i> Provide 'gateways' on all entrances & exits to the zone to make drivers aware of the change in conditions & change in priority. 	<ul style="list-style-type: none"> • The large scale of the approach at the Marlow Hill Roundabout will not send the correct signals. • Need this to be a clear entry point, from dual-carriageway into town centre. 		<ul style="list-style-type: none"> • Gateway entrance points identified but to be designed in detail at a later stage
SWAN FRONTAGE	<ul style="list-style-type: none"> • <i>Comment – Re-alignment of road.</i> Retain existing features in the road to naturally slow traffic or introduce subtle/soft measures in order to reduce forwards 		<ul style="list-style-type: none"> • Shared space junction should incorporate the northwest bound bus lane and footways, which are shown as separate on the plan. They could be highlighted as a different kind of area, or 	<ul style="list-style-type: none"> • Identified as shared space on design drawings. Detail of layout, materials etc. to be designed in detail at a later stage

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	visibility slightly.		<p>even with a level difference, but they should be incorporated into the design of the space</p> <ul style="list-style-type: none"> • The area should extend to include the new bus layby and link to Queen Victoria Road. • This space including the river could have the 'Public Realm Treatment' to enhance the low speed environment. 	
OXFORD ROAD ROUNDABOUT			<ul style="list-style-type: none"> • What are the traffic flows – realistically one flow may need to be dominant in order for junction to operate well • Footways are marked on the edge of the shared space – is this intentional? • Where is river? How is it proposed to be opened up? 	<ul style="list-style-type: none"> • Identified as shared space on design drawings. Detail of layout, materials etc. to be designed in detail at a later stage

OTHER COMMENTS

TfB D&C Review	Decision Taken
<p>No statements on the following are provided:</p> <ul style="list-style-type: none"> - Typical cross section - Removal of overpass and implications and opportunities 	<ul style="list-style-type: none"> - Cross sections / street profiles to be included in final materials - development opportunities following removal of highway not considered within design report

TfB D&C Review	Decision Taken
<ul style="list-style-type: none"> on land below. - Kerb height - Loading - Guardrail - Need autotrack movements - Vertical alignment at key locations. - Ground investigation (contaminated land) - Landscape - Stats - M40 Diversion Route / Plan B if accident occurs 	<ul style="list-style-type: none"> - kerb heights, guardrail etc dealt with through design principles - no implications for existing loading opportunities at this stage. Exact locations etc to be addressed at further detailed stages - Autotrack movements completed and to be show in appendix of design report - 3D analysis done at key locations along route - Ground investigation & stats not part of remit of Design report - Landscape / townscape addressed through any elements of work - need to ensure network resilience although Abbey Way flyover currently not part of M40 diversion route. To be addressed in background paper.