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14th May

RE-EXAMINATION OF GORDON ROBERTSON (early afternoon session 14/05/2014)

Qc- can we start with the iterations between yourself and other experts – the fluid process you mentioned. Can you take up the transport assessment in b-9 and turn to page 46. Can you have a quick skim through the first para which sets out the work done in terms of traffic modelling – getting the Itm model down to a junction by junction assessment. You said ‘a no. of iterations have optimised junction design...’ what’s being referred to there, please?

Gr – just phrasing in a different way what I said before. That’s talking about the junction design being fed back into the model so it is running at the correct green times.

Qc – bus priority – his proposition is that they have a certain level of priority then if you give ngt priority over buses then the value on bus priority drops. You disagreed with the value and that there would be an improvement overall. Why?

Gr – an improvement in the physical infrastructure e.g. bus lanes widened and also improvement because we’ll be implementing bus priority at more junctions along the route

Qc – potential for bunching – one scenario was that the first bus might be ahead of time. You said there was no advantage of making it earlier – e.g. Arndell centre with the driver reading his paper. What’s the problem with putting buses ahead of time and giving that further priority?

Gr – 2 problems – 1) if you arrive on time and bus has been and gone – very big issue. Passengers won’t appreciate this issue of buses not keeping to their timetable. No point in making buses early as then they will have to wait at next timing point and also irritate passengers who might miss them.

Qc – and the point about congestion about buses held at timing points.

Gr – Arndell is particular pronounced example where a bus causes congestion because the lay by there can accommodate around 2 buses and if there are two buses with drivers there waiting and reading their papers, then buses that fall behind stick out into the traffic almost at the ped crossing and traffic coming through north lane can’t get pass them on occasions.

Qc – Jones moved on to a separate point – he says that buses will not have top priority – you referred to the conflict between ngt and late buses. What was your point there please?

Gr – can’t think of the exact use of the context

Qc – if they are using the same stage of the ngt down that route

Gr – ngt and buses will use same stage at a no. of areas, they will both get priority if late bus arrives at same stage at these signals. There are relatively few junctions where there are conflicts – priority for late buses overall will be quite reasonable.

Qc – transponders...mr jones said there is nothing in evidence in respect of reliability of transponders and you said it was a standard technique...

Gr – they are more reliable than any vehicle...it is an inert magnetic device and is extremely reliable. The transponder or something equivalent of a transponder will be an almost guaranteed way of detecting the vehicle. It is something greater [more reliable] than the current GPS system.

Qc – does it concern you there is no written report on their reliability?

Gr – I don’t think people familiar with transponders would question there reliability

Inspector – with the transponders, that will be built onto the bus?

Gr – yes

Inspector – will it be added onto the vehicles at a later stage?

Gr – depends on the terms of the contact. The transponder interacts with a device on street – and that will also have to be supplied

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Inspector – that would go out to contract with the whole thing?

Gr – that's correct

Qc – south to Croydon about hurry calling. How can we reject hurry calls for transport in leeds?

Gr – within the arsenal of logic that the stm system is able to implement, hurry call is [one of many] tools in our bag. We wouldn't want to use it in the way used in Croydon because 1) its effect on general traffic, the FOI response quoted didn't answer the question of the effects of hurry call was ameliorated, we wouldn't use it on such a congested situation, 2) we were concerned about safety due to stage skipping.

Qc – headingley – three or four different questions about how that would run through this area...questions were put to you suggesting that things could be done better than ngt. In short please, compared to the existing situation, ngt is good or bad?

Gr – the ngt scheme in my opinion makes improvement overall all along the route for buses, pedestrians and cyclists.

Qc – Thornberry avenue, page 12 appendix. You made point on signalisations being an improvement even though queues would increase.

Gr – glenn road/church avenue on page 13

Qc – signalisation being an improvement, although some roads would increase.

Gr – the pedestrian crossings existing (in darker blue) and we're changing that signal into a signal junction. I think that the traffic movement at the moment there particularly evening peak, could almost be described as chaos – all right turns want to take place at same time ... the result is v. difficult. I would imagine it is awkward getting out of churchwood avenue. The right turners are sitting in the junction in everyone's way. Signalling junction and banning that right turn means that everything takes place decently and in order – benefits capacity and makes it easier for traffic to do what it wants. The queue length is measuring average queue at the end of the red period – there is a delay but everyone gets through on the next green – although the side roads will alternate. The give way programme means that every vehicle coming out of side road or turning right has an element of delay even if it doesn't build up like with the signalised junction.

Qc – page 15/16 weetwood lane – we see there, saint chad's road under B – in the do minimum AM, maximum queue 1, do something – max queue is 10 but the degree of saturation is 87%. What does that mean in terms of the functioning of the junction and the 10th car in that queue?

Gr – means most of the time that queue will clear every cycle. Slight difference from glenn road situation as it is motivated by safety whilst glenn road is signalled because of the complicated traffic movements. Weetwood lane is well used by commuting traffic and makes the junction a problem.

Qc – Malcolm bell said that there would be a 'slow accumulation of entropy' – your answer was that ngt wouldn't generate the sort of shock mr bell was referring to – you said that cars wouldn't notice – why is that?

Gr – this comes back to a difference between stm and hurrycall. Stm will nudge green times along so there isn't a sudden change when ngt comes along and maintains the average green so that over the 3 or 4 traffic cycles between one ngt and another the amount of green on side roads will be the same. In terms of build-up of problems – that only occurs if you have got a restricted output – we have in general got spare capacity with exception of critical junctions on north lane which is not on the scheme and we aren't changing the existing junctions.

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[5 minutes adjournment]

2:31pm

EVIDENCE IN CHIEF OF JASON SMITH

Qc – in your evidence, you set out your qualifications and experience, we find that at s.1 on page 2 – you are an associate with Mott McDonald, and your firm is one of the largest consulting engineer firms in the UK. At 1.1.3 you set out your experience, including involvement in mass transit schemes similar to ngt and most notably, Sheffield tram train, Manchester metro link and Nottingham, West Midlands etc. is that an indication of your indication in this field

Js – yes

Qc – you are project manager for the inputs for ngt project – your personal experience and expertise is in engineering and traffic management

Js – yes

Qc – read out your summary proof

[Js reads out]

Qc – main heading I have is ‘scheme design’ – go on to some more detailed issues, and then we will consider impacts on existing highway users. He explained from the perspective of leeds city council and his responsibilities for the signalling that there was an iterative process between that design scheme and him. Is that right?

Js – yes, it was a collaborative approach with Leeds city council. E.g. if we take a junction, we would look at the traffic flows, we would discuss it with GR and then the design team would come out with a draft layout which looks like it would cope with the sorts of flows given. That would then be tested by GR and this team and we would discuss them to see what we would could do to improve the flows... and also talked about constraints which we simply couldn't have – more lanes in a particular place...etc. We'd iterate that several times and come to a solution that would be a balance of the competing interests whilst trying to get a workable junction

Qc – your proof para 2.1.2 and 4.2.1. – you make ref to design changes – you refer to the latest changes in march 2014 after the application for the order was submitted. Take up doc a-11 – revised drawings of march 2014 – and we can see that with a-11 there should be a **list running to 6 pages** which identify the changes. [they will be put up as submission for changes to the Order...the Inspector assumes there will be modifications even during this inquiry – he will get this at the end of the inquiry]. These changes proposed, reasons given in the list. Can you take out a new doc app 106 (handed out today) – headed designers response – road safety audit march 2014. Can you explain what it is?

J s- leeds city council undertook a stage one –preliminary road safety audit – based on application docs – as of sept last year. That recommended certain changes or queried certain things – the scheme designer then did a response to those points (some they just accepted or with some there was a good reason to do what they did and just supplied more info to the road safety team) – the things that were accepted are now reflected on the P4 (doc a-11) which has been used to guide the development of the scheme.

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Qc – if one changes the design in the way shown in a-11 are there related and consequential changes that need to be made to the propose traffic regulation order?

Js – yes maybe change where curbs are, or look at restrictions – that requires a commensurate change in the traffic regulation order plans - there is a note at 105 that sets out reasons for those changes.

Qc – so at 105 there is a note from BDB explaining the changes and why they were made – at a-13 those are the actual changes. Just like you to take it up and we'll see there is a key on the right hand side – if we take the first page there's a plan – sheet no. 1 which deals with Holt Park and we can see that on the plan there are circles (black, green, red). Can you tell us what those colours indicate?

Js – for clarity we wanted to flag up changes – all those circles which surround a tlr no. are all black – on this update to help highlight changes we colour coded them. If remains black = no changes, if green= that means minor changes to the TRO e.g. changed length or wording changed, ones in red = more substantial changes to TROs. Looking at sheet one, one thing at Holt Park was there was no timed parking etc. just past the surgery and kids academy – we decided we wanted to put in timed parking. That is highlighted in red on sheet one.

Qc – so on the north on what is on the eastern side of the road, you can see there are little symbols 'TP' – that means on street time limited parking. You have to have good eyesight to see that.

Inspector – these are reduced?

J s- you will get a full sized plan [**we should ask for one**]

Qc – in answer to your question on draft provisions to the order – we can provide the latest draft to you, sir, which incorporates the a-11 changes and proposed changes to the traffic Regulation Order.

Qc – having identified changes – let's take an example. If we go in your proof to 4.2.10 page 17 – we find a heading 'college of art' – at 4.2.12 over the page, we can see that the new area on the st. mark's road and the promoters would be prepared to discuss giving college of arts, rights to its use – its an offer. Are those types of offers peculiar to the college of arts?

Js – I think promoters are trying to be helpful to objectors where they can – e.g. compensation for land lost. In particular for college of art...the scheme has been pulled further away from Blenheim walk and that has reduced the land take from there – so communal seating area is no longer affected.

Qc – before details – please find the plans. so have similar offers been made to other people?

Js – **yes they have**

Qc – lets go to sheet 24 of A-11 (also need A-5 sheet 24) (we will take two examples: leeds college of arts and lawnswood school).

[gets it on screen]

Qc – if you could go to A-5 and explain the difference between that and the A-11, at A-5 the original proposals were that the ngt would be constructed 2.6m over to the college front and that meant the communal seating area would be partly taken up. The footway would be into that communal seating area...and this road – st. marks is at the side.

Js - **Further discussions were held with college** – so junction was amended. What happened was that this carriageway here[points] was reduced from 3 to 2 lanes – and removing left slip by elgin terrace – meant that the back of the foot way moved 2.6m further away from the college building. It does still mean that whilst we did avoid the communal seating area here, we did take from the hard surface area outside the college main door which at this point was near the apex of the building -

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there was reduction in hard space area there. Area lost was a 180m square and that retained was 92. So there was a reduction in that area.

However, in compensation we skewed the st. marks road further over so to increase take on that side ... st. mark's road moved 5.4m at it's greatest point further away from college building – so that created compensatory space on the st mark's road side of the building. So the main doors of the building and hard space out at the front, of which we would take about half of it. Total space lost originally was 254sqm. Space down the side we provide in compensation for that is 279sqm – give a net increase of 25sqm. We couldn't avoid a small folly brick building at the Blenheim walk frontage – that is taken by the scheme but could be rebuilt easily on the same corner. Essentially the scheme has moved as far away as the Blenheim walk frontage as possible but compensated by a space skewed on st mark's road.

qc – Blenheim walk becomes two –way traffic, and the changes have to be made in order to accommodate that.

Js – absolutely, we have tried to as much as possible reduce that. We have aimed to provide some compensatory space which is still lost.

[36:17 in recording]

Qc – concern expressed about ability of ped crossings to accommodate no of ppl who use them

Js – we've considered this – there was concern expressed as to the amount of ppl using that (college of arts did a survey themselves – peak requirement would be 25 ppl at any one time on the crossing – they themselves say that its 25 max crossing.) –I have looked at these issues – e.g. the guard railing etc...we've determined there is sufficient space to accommodate the 25...

Inspector – so you've just managed to accommodate 25?

Js – more than that. What we've done is use the survey by the college, and also Fruin test was done.

Qc – we can take it quickly that the anticipated peak demand is 25, what is the capacity?

Js – looking at area of crossing 27.5sqm – that gives a space per person of 1.1sqm – if we relate to the Fruin level of service – that would come into category B (scale from A-F) – B recognises standing with partially restricted circulation in the group but not much disturbance of others (A being free flowing). C would be standing and restricted circulation and disturbing others is likely... and so on. Just to set it into context...it is a bit less than free flowing (Category C is like a shopping area, and D in a railway station...etc). You could put more people on and still be within the B category – maybe around another 5 people at least for B, and maybe around 10 for it to be category C.

Qc – other main issue in relation to college of art is the noise.

Js – mr Fornin to answer please.

Qc – lawnswood school – another example of a change – 4.2.5 of your proof. We can see that in response to and following discussions with the school – a deceleration lane has been provided. We can also see that there was originally proposed a construction compound – 10.12.1 page 147 – it says the lawnswood school site is no longer required as a construction compound. Page 122 – you have a table and that shows construction compounds and work sites – item 3 shows Lawnswood school. Should it still appear in page 122?

Js – it is no longer required. The construction compound was originally proposed for NE corner of school grounds – having discussed with school we have worked with uni of leeds, and reason for compound required originally was to support construction before site was available. In fact– we get the main bodington park and ride site now so therefore than lawnswood site is no longer required.

Qc – sheet 9-b (doc a-11) – can we see where the deceleration lane has been provided?

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Js - the construction compound would have been there [points] but now we are certain there is a bodington site that is available – we don't need the school compound anymore. The deceleration lane is around 35m long.

Qc- woodhouse and monument moor – dealt with at 6.7 in your proof page 68 – can we take up a-11 again (sheet 23) – please explain the proposals for the route across monument moor and the consequences for the trees which readily apparent to anyone whose visited that area?

Js – I'll explain the current proposals and the alternative proposal and what that did. This is the current proposal on the drawing [points] – the reason for doing that is to give us a priority approach all the way up to the Farringdon road junction so that ngt will be more punctual and will not suffer from future traffic flow growth. It gives us an ngt stop right in the area next to the ped crossing and opposite to leeds uni. It is v. close to the main desired line (uni) and in proximity to junction crossings. It also connects to a large plaza area with a bus stop area as well. It gives good opportunities for urban rail uplift. Trees – 7 trees here, it allows those to be largely retained (3 are still at risk because of curb line modifications) but 4 are not. In doing this we take 2800sqm of land there from woodhouse moor – that has been appropriated by leeds city council already. Because now ngt goes onto moor, it provides for the uplift for the rest of the moor e.g. landscape design to enhance the environment. The whole area would have amenity and forced grass and trees on the border with a wild flower mix. There is an urban uplift to the scheme.

Js - Just to contrast that to an option (an alternative) – remaining on a carriageway and not constructing ngt on the moor -We have to consider certain things – right turn into roundpark road would be required. It is a strategic movement of traffic. So the existing facility there is not adequate its very narrow so must provide a full right turn facility at that point – that would involve...land take in this area and that land take is from the highway verge, maybe not the moor, but there is a widening there.

Going on the Farringdon road end – it would require more widening in this area as well e.g. cycle lane and widening existing bus lane and providing a bus lane on the inbound as well. This widening would be necessary for the on highway option but not for the option we have now across the moor.

In terms of the actual option on the highway with the widening – it provides a less efficient layout of the junction. Concerns over right turners – the no. of them, may force the stop to be set back by 100m to avoid the right turners queuing all the way down and blocking that stop. You'd block the head flow as bus lanes along side. It would require widening which would also take out almost all the trees on the side.

There was an option on the carriageway and an option on the moor which you see here. There is a difference in removal of trees, one takes seven and one takes three. With the option on the carriageway – the bus stop would be in a more remote location than near all the uni, crossing etc... so therefore not as integrated.

BREAK

3:38pm

[NB/ there is an A-12 – technical and landscape drawings together]

Qc – proof 3.1.8 – there you deal with the extent of segregation on the route – you produced a table that appears elsewhere. In response to that, mr Turner says that you don't deal with the qualitative

issues – what he contends in 4.1 of his rebuttal is that there isn't much benefit in providing segregation in uncongested areas like southbank and brewery wharf.

Js – when we considered segregation we were looking at operational benefits but also what opportunities were – e.g. future developments – like southbank and brewery lane it was possible to have segregation without affecting third parties as that was Leeds land. Also in the southbank area, whilst it isn't that congested right now, mr Farrington said it is a major redevelopment area - there will be more redevelopment in the future and ngt is trying to support it. We don't have segregation in holt park – free flowing traffic and we don't need it up there. Areas more congested like Headingley – there has been huge investment to do bypass etc...it is looking at opportunities and development and where congestion is. We have focussed on segregation where needs be.

[Our note: but where does he say what the actual benefits of this segregation are? The proof says that the ngt will be approx. 43% segregated but a bit part of that doesn't provide any benefits – all he is saying here is that the segregated lines in the south are for the future...]

Qc – vehicle speeds raised by mr Hague by cross examining mr haskins. Your proof 5.10.2 – you say that ngt vehicles will comply with speed traffic and refer to share surface space for those who studied the transport assessment b-9 para 3.3.3 page 26 – we see that all ngt vehicles will operate to highway speeds – it refers to lower speeds in regards to shared space –

Js - the vehicles are subject to usual speed limits and in the shared space will go down to around 15miles per hour... just to clarify – it is 15 miles per hour where ngt doesn't share with any other traffic e.g. millennium sq, whitfield way. Other areas like university, woodhouse lane it does share therefore it would be 20 miles an hour.

Qc –your proof para 5.3 page 23 heading 'bus stops' and 5.4 'ngt stops' – please explain reason for not sharing bus and ngt stops

Js – 3 reasons: curb side capacity of the existing bus stops (this is the busiest bus route) –certainly in the metro zone infrastructure standards doc it recommends no more than 20 buses per hours for these stops. Many bus stops are already over 20 vehicles per hour. I appreciate there may be response from First in terms of withdrawing services – but even withdrawing those buses the stops will still be extremely busy... mr anzir budoo remarks that leeds buses rely on single entrance double decker buses – taking a long time for them to board and alight. All these factors including lay over time etc. makes the bus stops extremely busy. There is a potential for ngt not even getting to the stops and being delayed – punctuality issue. At university, the dwell times are particularly long. Second reason for not sharing is geometry – where an opportunity exists we will try to locate an existing bus stop just downstream of ngt. If we try to put it in a layby because of the 2 diff doors...we can't put it into a layby – it may be on a bend and that wouldn't work as it's articulated. Bus stops will have to be substantially reconfigured to allow it to happen.

9.5.5 section 2.1 – branding and identity - stock design at 2.5 – the ethos there is to have a distinct system with a strong network identity. So passengers don't confuse ngt but also to be punctual etc. those are the three reasons why sharing would be a problem.

Qc – take up mr Turner's rebuttal proof and a ref to the nwlft rebuttal. Mr Turner's para 4.4 and nwlft 4.3 – what mr Turner says is that you haven't justified why ngt and conventional buses can't use the same stops. Nwlft says that your 7.5.5.2 you refer back to your 5.4 which we're looking at and in your 5.4 they can't find the justification. So now we have now got the 3 reasons – curb side capacity, geometry and design approach. That's the reason for having new stops. If you have new stops why can't you share them with the buses?

J s- the reason I just said above. In 5.5 I did cross ref sec 2.1 and 2.5 of the design statement

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Qc – to be fair to you we do have geometry at 5.4.4. and you have dealt with the design approach at 5.4.5 and dealt with stop capacity at 5.4.3.

Qc – opportunity for interchange, taken up by mr turner at 4.9 and nwltf at 8.45 – saying a disadvantage of having separate stops as it's a disadvantage to interchange

Js – certainly in terms of the engineering – I've looked at where we've had opportunity to put stops near each other – isn't possible for e.g. headingley stop. But in many locations it is possible to put them within short distance of each other. I've noted down the proximity – all bus stops are within 100m (10.3.2 page 139) – many (100) bus stops within 40m of an ngt stop. I've looked at each location, some of these along the same route a660 and some on different routes.

Qc – park and ride – mr turner's rebuttal he says it's doubtful that bodington is the best location of park and ride adjacent to the ring road (4.11) and we've also had questions put to haskins in particularly by mr bell questioning whether high way capacity is adequate in the p and r exits

Js - 1st point – park and ride sites are there to serve commuters and local demand – located to intercept traffic along the a660 – it's also near to the outer ring road – at the confluence of the a660 and main orbital route so strategically well placed on their intersection

2nd point – in terms of the junction itself (GR has done the modelling so it's designed to cope with another green time to let large no of vehicles leave the site) when you get back to your car how the exit worked (is it barrier or manual etc.) has not been designed yet – however, people have different walking times to their cars and not everybody will arrive at once and at the barrier (not specified yet) there will be multiple exit barriers and that will cope with the anticipated flow. I don't see it as any different from a rail station p and r – same thing, so I don't see any issues.

Inspector – do you see ticket as parking and riding on one ticket?

Js – no I think it's 'pay to ride' ... the ticket would give you both exit and access onto ngt

Inspector – do you foresee tickets being purchased there?

Js - I don't know...I assume so

Qc – you can't get out of car park unless you've shown you've been on the trolley??

Js - yes

Qc – page 44 proof – listed building consent applications. We can note at page 46 that two of the applications (relating to holy trinity church and 24 Briggot) have been withdrawn which resulted in objection of English heritage being withdrawn too. How do you deal with the Briggot issues - you can't fix it

Js – we did want to avoid having a pole – we looked at the adjacent buildings and whether it's possible to miss that building... and through that design work we could confirm that was the case and therefore we withdraw that LBC application

Qc – holy trinity church?

Js – unfortunately there is no alternative building fixing location so looked at a pole alternative instead – that was discussed with English heritage – we have a satisfactory location in terms of the overhead infrastructure.

Inspector – where does it show this pole, what drawing?

Js – it will be built in or immediately alongside the shelter.

Qc – impact on utilities – 8.1.5 on page 104 – heading 'statutory undertakers equipment' – during cross-exam of mr haskins by mr jones a comparison was made with a tram scheme in Edinburgh and the suggestion made was that those promoting the tram in Edinburgh had not done sufficient work

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to identify the utility statutory undertaker's infrastructure. What have you done here and is it comparable to Edinburgh?

Js – this isn't a tram scheme so a huge difference with the utility diversions. With a tram – you need to divert significant utilities to construct a track slab. We don't need to do that on ngt – we are running on a conventional carriageway. It is a huge difference. But there will certainly be some utilities that need to be diverted – certainly not on the same scale as a tram scheme. In terms of what we've done – we've followed a robust process – obtained info from utilities co.s and collated into drawings and how it would conflict with scheme works and we held a forum with all the stat undertakers and briefed them on the scheme and from that asked them to provide diversion costs for the scheme. We have got returns from some and not others. We have had meetings with them and went through their assumptions – we were then able to adjust the diversion prices they put in. where we didn't get any returns from some co.s we looked at the equipment that needed to be diverted and made our own calculations/estimates. These were robust estimates benchmarked on other schemes that have happened where we could look at real actual costs. This was the process to get as realistic cost as possible.

Qc – impact to highway users – start with page 97 para 7.8 'road safety' – you deal with likely impact of collisions and rates of collisions. You say in particular that traffic signal control junctions give clear priorities etc... is it that rather than just a simple process of saying that by increasing volume of the flow this will therefore increase the predicted rate of accidents, that it is more than this? What is your view on the likely impacts of the collisions rate?

J s- it's not so simple - need to look at what's happening with the highway layout. Certainly given that we are doing a lot to widen bus lanes and concentrating a lot around pedestrian safety e.g. signal control crossings, it's my view that it would lead to a reduction in accident collisions

Qc – 4.8 turner's rebuttal – his contention is that you appear to contradict yourself on the point at 4.8 – is there a contradiction?

Js – no I don't think so – in terms of reduction is regards to shared space areas. But if you were going to increase vehicle flow then you have got to view that in the context of being one component – and that is a small part of the whole picture

[4:09pm]

Qc – turn to cyclists. You deal with this in 7.2.10 on page 79 – we can see the extent to which cycle lanes are provided and whether combined with bus etc. we can see at 7.2.14 your overall summary where you come to the conclusion that ngt proposals deliver benefits to cyclists. 10.2.4 you're responding to an objector and dealing with cycle lane widths. There you refer at the top of page 132 to dft guidance in local transport note 02 of 08. What I'd like you to do is to take that up: g-4-74 "cycle infrastructure design" page 33, 6.2.2. can you help on the status of this guidance compared with e.g. the London cycling design standards g-4-75 and compared to the academic paper that the a660 joint council put in a660-jc-102. When the inspector has to grapple with all this, which is the doc which most weight should be given to?

Js – certainly g-4-74 that is the one that is recognised and generally followed. Local authorities closer to London do their own standard guides. It's all generally based on the **g-4-74 widths**. They are all gen same in terms of the general widths but the dft one is the one nationally recognised and expected to use on scheme like this.

Qc – guidance in 6.2.2 – this is the ref contained in your proof, the guidance if you're going to have a bus lane which cyclists also use – what is the width that is seen as the minimum?

Js – the width is lanes below 4m are not recommended unless they are over a v. short distance where the bus can follow the cyclist for around 100m.

Qc – in this scheme there are a range of different widths in ngt scheme. Some of it is at 4.5m, some go down to 4.2m - What is minimum it gets down to?

Js – so min for bus and cycle lane on the scheme is 4.2m.

Qc – you can have as wide a road incorporating bus cycle and other lanes as you like - except the fact that there might be buildings next to it. So how do you balance up the competing needs of not having to demolish at best too many buildings at the side with making adequate provision. How does the engineer deal with that?

Js- certainly we look to the guidance for the minimum can use – so it sets out that a footway should be at least 2m – we need to explore looking at a wider width, so we would go with the minimum there of 2m, the 4m here, we didn't want to go with– we wanted to go with a little more than 4 so we wanted to make sure we could get cyclists pass a bus – but do need to balance competing interests – do you narrow a footway to get in a wider bus cycle lane or would you use the traffic lanes? Where we've got an adjacent traffic lane we've narrowed that quite often to the minimum particularly at the pinch point...which is three metres – so in discussion with Leeds city council, they certainly didn't want the traffic lanes to be below three metres.... You can imagine there's HDV [the vehicles?] in there which is 2.5m metre width which doesn't give a huge amount of space. We've gone down to 3 m to squeeze traffic as much as we can – we certainly don't want to go lower than 2 on the footway – so we are bound by constraints – so really then trying to balance the traffic with the buses/cyclists/peds and clearly we can't get in the aspirational standards of all of those so in a particular location it is about the balance and our min standard for a bus lane is 4.2m which is above the recommended minimum.

Inspector – on the ones where they'd segregated completely from the road but shared by cyclists, what min would you see working on those?

Js – if its unsegregated shared path with pedestrians and cyclists e.g. lawnswood – then its 3m

Cameron: sorry the inspector is asking you e.g. about headingley offline

Inspector –yes, e.g. headingley offline, or one used just by ngt and cyclist segregated from the road – what is the minimum there? (e.g. when you don't have the constraints e.g. of buildings etc.)

Js – for the off road sections that are segregated with ngt with parallel footway and parallel cycle way – there is less of a constraint there so we've got 3m for the cycle lanes and 2m for the footway. In addition to separation strip to ngt running a line with itself

Inspector – so cyclists are segregated from these areas? When you built a purpose built stretch of ngt, you're not having to share with cyclists then? It's only on the existing highways where the cyclists will share with ngt, is that what you're saying?

Js – that's correct.

Qc – you've exceeded the minimum recommendation – in your evidence you indicate a trolley is 2.55 m wide without wing mirrors

Js – yes - max legal width of bus vehicle is 2.55m

Qc –at what height will it be if you include the wing mirrors?

Js – above 2 m – no impact on cyclists

Qc – and while we have got this g-4-74 – I'd like to deal with issue of segregation. It has been put to other witnesses that the desirable provision for a cyclist is a segregated route. This has been provided in some cases – as you just said. But can we look at table 1.1 of page 9 of the transport note. It says 'type of cycle facility' – on road or off road – and no. of factors. If you look at the second row would that apply to all part, or some of the proposed route?

J s- yes there are loads of side accesses – v. numerous on the a660 corridor.

Qc – we see that it makes on road more attractive as it reduces potential of conflict – what is the guidance where you've got a road with lots of side road junctions

Js – you ought not to have segregated facilities as this leads to conflicts on the side access points – its only useful if no side roads or few side roads. it is not recommended if there are side roads. Looking at 6.1.1 of g-4-74, part of that says that bus lanes are generally popular with cyclists, they are often preferred to off road facilities as they result in the advantage of remaining in the carriageway

Qc – so table 1.1. says it depends on circumstances. Let's take up mr Forin's doc – a660-jc-102. So you'll see there that it says segregation is the priority – is that simplistic comment an appropriate approach or does it depend on the circumstances.

Js – it depends – are you on a busy street, offline...otherwise simply applying that segregation could lead to conflict developing and lead to safety concerns.

qc – turn to pedestrians. Here you deal with this at 7.3.13 of your proof – concern is expressed about impact on pedestrians – can we start please with the Merseyside letter and report FWY 100 and 101. – go to paragraphs 13 and 14 of the letter, the sec of state notes that inspector was concerned about the quietness of trolleybuses and its consequent safety (report 4.5.8 and 4.5.9). How does the area to which ngt will pass compare with the parts of Liverpool under consideration there?

Js – for Liverpool it was the plan to introduce a trolleybus into an area which was established as a pedestrian area – in the heart of the city centre and there were a huge no. of peds back and forth between shops either side. In terms of ngt the only areas we are introducing ngt into which are established pedestrian areas are whitfield way where we come through the district centre (but this is not akin to the shopping area of Liverpool as much fewer pedestrians in comparison) – other established pedestrian area in Leeds is only a short 90m stretch at millennium square...but again you can't describe that as a major shopping street for the activities that go on there. It is a completely different context to Liverpool. We are also introducing ngt into areas such as woodhouse lane – whereby it isn't pedestrianized...we are actually seeking to limit to traffic, an improvement to what is there now.

Qc – it terms of warning devices and the like we can see if we take up the environmental statement (doc A-08e, tab 2 para 2.4.8 on noise and vibration) – we can see there it is a reference to an assessment of audible warning devices. How do these work?

Js – it will be similar to existing situations with tram systems e.g. Manchester city centre or Nottingham. The tram vehicles will come along, you don't actually hear them if you are in middle of crowded pedestrian area. If there is someone in the way they will sound their horn/bell to warn those in the way and wait for them to clear out before proceeding. It's pretty well established in other cities. This vehicle would have a similar warning device.

Qc – you said speed limits will be set at an appropriate level to local context - typically 15 miles per hour in shared space areas.

Js – yes, 15 if ngt only, but 20 miles per hour other times with other vehicles e.g. woodhouse lane – what we've done here is we need to carefully think about the street scape, the delineators for disability groups etc. so what we've done is we've set up an ngt equality access user group, that's been going from some time – drawn from LCC's disability hub- they've been in-putting in to the designs and providing comments on that. Also, the following mitigation is what we've got in mind for the shared space areas: pedestrian safety awareness campaign; and the user groups will participate in the designs (and continue in the detailed design); we'll provide training to highlight areas of high pedestrian activity and vehicles fitted with the audible warnings and speed limits in place.

Qc – mrs Fabri's questions – if you go to her document question 1 – how does the proposed scheme ensure children living on the route can walk/cycle safely in the community?

14/05/14

J s- multiple points – we do acknowledge that they do have confidence in being able to cycle on streets – we’ve significantly widened bus lanes e.g. west park is 3m wide and now we are widening it to 4.2m. that sort of thing in addition to the crossings and other cycle lanes will give ppl confidence to go on the roads. We also recognise that even with all of that there may be lack of confidence – so in accordance to LTM 2.8 – that suggests you put in dual networks in some places. We’ve expanded landswood roundabout etc. where you can go around the carriageway or use some segregated off carriageway cycle facilities – we’ve extended that onto the roundabout. there are intermittently cycle facilities on headingley way or offline facilities on the bypass – there are dual networks for less confident cyclists. Third thing – we have also tried to reduce speed and volume of traffic in certain areas...we can’t do that on ottley a660 but some areas like university we have done that. There we have reduced traffic and 20 mile hour area.

Qc – question 2 – how does the proposed scheme ensure preservation/improvement of current wheelchair etc access?

Js – bodington park and ride 44 disabled spaces and 48 family spaces and cycle stands etc. similar thing in stourton - arena stop at cookeridge street also has cycle stands. B-9 doc page 224 – table 9.1 – this is looking at parking on the scheme. This shows that although we reorganised parking there is a net increase of five disabled spaces in city centre in addition to 166 at the two p and r sites. Just one more point around the walking aspect – the whole route will be resurfaced, e.g. carriageways, footways etc. set out in a-8k at section 2. That says we will resurface – there are issues with uneven surfaces right now. That will greatly help too.

Qc – question 3 – what considerations given to ensure safe shared spaces for ped/cyclists/disabled etc.

Js – in addition to what I said before about equality access user group we are also following guidance in ltm 1.11 (g-4-77 on shared space – a best guide practice – we are following that guidance along with meeting with user group) – working through the shared space areas I’ve talked about. We are doing public awareness campaigns and driver training in addition to this.

Qc – two other user classes – if we go to your proof at 7.4 consideration given to impact on taxis (page 84 to 87). Buses are also another user group that are considered at 7.5. in terms of engineering (leaving aside run times etc. – for chadwick) – what’s been the approach to engineering the scheme to provide for buses?

Js – to share facilities where we can. The new facility up on headingley lane is being shared. The bus lanes on ottley road – that’s quite a long stretch – certainly where ngt is on street then the principle is to share with other buses.

END