

## Submission Relating to EXD/082

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### Summary of Key Points

- Despite it being an undisputed point at the EiP, **the NEAs have again made the basic error of ignoring historical inflation in relation to comparables' capital costs (despite making other corrections)**, indeed even intentionally misrepresenting some of the routes as being in line with the Bristol capital costs
- **Our inflation-corrected analysis shows that the capital costs are very low compared to the comparables**, which are 26-57% higher than the midpoint of the NEA higher investment case
- The only output of the RTS analysis used by the NEAs (Hyas report), however, is the lower end of the higher investment case. **The comparables are 43-78% higher than those figures**. Bizarrely, the NEAs actually show only midpoints and high bounds in their tables in this document, virtually irrelevant numbers in context.
- **The comparables are anyway poorly (if at all) justified and our previous concerns raised in relation to capital costs remain** (lack of clarity around routes obscuring calculation of route lengths and therefore undermining capital costs further; significantly incomplete composition of capital costs; pump priming, effectively a capital cost, being largely ignored e.g. we estimate it is 5-10x too low in Hyas)
- **Mr Johnstone has always referred to Fastrack Route A which has direct relevance, whereas Route B does not**. However, the information around the meaningful (i.e. having RTS characteristics) segment of Route B, when adjusted for historical inflation, still shows that the most basic of BRT systems (and indeed one which "borrowed" capital elements from Route A) **has higher capital costs than the NEA proposals**
- **We note that our concerns are entirely in line with the UDC Inspectors' letter (EXD078)**, particularly paras 56-58. It refers, of course, to part of the same RTS system as here

### Questions 1 & 2

No responses provided as concerns outlined verbally at EiP.

### Question 3: Further information regarding RTS routes

The response to Q3 by the NEAs is **very problematic coming as it does in the context of being written and submitted post the EiP**.

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<sup>1</sup> As noted previously Mr Johnstone was commissioned jointly by CAUSE, Mr O'Connell and Shalford PC. This document was prepared by Mr O'Connell in close consultation with Mr Johnstone, but it is endorsed and effectively shared by the other parties.

Specifically, we raised at the EiP (Matters 6 and 7) as well as in hearing statements beforehand that the comparable costs (Bristol and Salford) **had not been adjusted for historical inflation, such that the implied differential between the NEA system and the quoted comparables is significantly understated.**

In light of the NEA’s correction for their error (Table 1 of EXD082), we show below an updated table taking into account historical inflation (i.e. our previous table correcting the NEA’s mistake). We have also simply reversed our previous analysis – now showing how far comparables are above NEAs rather than how far NEAs are below comparables – as this seems most intuitive in context.

Figure 1 – Adjusting Comparable Capital Cost Benchmarking for Inflation

	NEA	Bristol	Salford
<b>Capital Costs in EB/079</b>	£2.8 - 4.2m/km	£4.6m/km	£5.5m/km
<b>Corrected for Inflation *</b>	£2.8 – 4.2m/km	£5.3m/km	£6.6m/km
<b>Table 1: Comparables Premium to NEAs **</b>	-	26% - 89%	57% – 136%
<b>Hyas: Comparables Premium to NEAs ***</b>		43%	78%

\* For inflation corrections we have assumed straight-line distribution of capital costs across project construction period and 3.5% as an assumption for UK civil engineering inflation.

\*\* Range is for midpoint of each of higher and lower NEA investment cases (EXD/082).

\*\*\* Hyas use low end of higher investment case (we calculate this to be **£3.7m/km**): this is significantly below the higher investment case figures provided in Table 1 of EXD/082, which is the mid point of a wide higher investment case range.

In particular the inflation-adjusted comparables premium to Hyas shown above merits note, as this – the low end of the higher investment case – is the only output of the RTS study which is used in viability analysis, despite the fact that the NEAs mysteriously only show the midpoint and upper bounds of the higher investment case in Tables 2 and 3 of EXD/082 as a per km output.

To ensure that the table in Figure 1 is as clear as possible: **the Salford scheme for example had hugely higher capital costs – by ~80% – than those used by the NEAs in the Hyas viability analysis (6.6/3.7 - 1 = 78%).** Applying even a 40% contingency within the Hyas analysis still leaves the capital costs plus contingencies as being lower than both comparables (given Bristol is 43% higher, as shown in the table above).

**The requirement to adjust historical data for inflation to bring the numbers up to a “present day” basis was not at any point disputed at the EiP and was raised multiple times:** indeed this is not surprising as it is a basic matter of fact. We note that when Jacobs were discussing Fastrack (albeit the “wrong” route, on which see Q4 response), they acknowledged that an adjustment for historical inflation would be required. Despite the basic nature of this point, we nevertheless – and for the Inspector’s convenience – quote below government and RICS guidance to this end:

Government Guidance<sup>2</sup> (our emphasis): *“Re-basing for inflation: Data should be **normalised for inflation as accurately as possible**. Projects will generally have different start and end dates, meaning the **costs recorded will vary with fluctuations in inflation**. To adjust for inflation, indices are utilised to normalise project costs at different price time bases.”*

RICS Guidance<sup>3</sup> (our emphasis): *“Project Indexation: **If historical data is to be used as a source of cost data for current or future projects then it is likely that it will need to be adjusted** in some way to account for the change in location and **to bring costs up to date** or to project them into the future. A simple way to address this is to attach indices to the cost data – one to deal with location and **the other to consider the time associated with the historical construction cost.**”*

However, not only were the comparable numbers presented incorrectly in the first place in EB/079 (a mistake we make a professional courtesy of assuming was accidental despite the basic nature of the error), **more problematically still they have not been corrected in EXD/082, despite the table being corrected for other errors.**

Indeed the NEAs comment in EXD/082 that *“It is worth observing that average per kilometre estimates are now above the Bristol benchmark on both the Colchester sections.”* Given the points made – and acknowledged – at the EiP regarding the error relating to inflation, **this is quite simply intentional misrepresentation by the NEAs, indeed which would be acknowledged as such in a legal context if required.**

We believe this error (and now intentional misrepresentation) **makes legal soundness around the RTS justifying Sustainable Transport credentials of the GC sites in the context of the Local Plan examination very problematic** given the Inspector’s question in para 42-43 of his June 2018 letter (IED011).

In addition to the above, we comment briefly for completeness on a number of further summary points which merit consideration in the context of the benchmarking for which further evidence is given in EXD/082:

- **No justification has ever been provided for the relevance of the comparators, which after all do not actually bear much resemblance to North Essex, both being linked to large cities (Bristol and Manchester).** We note in this context government guidance: *“In each case, it is important to ask whether the benchmark is an appropriate and useful reference point to compare the particular project in question”<sup>4</sup>.*
- **Apart from vague assertions** that the partial greenfield nature of the NEA project should mean cheaper capital costs than eg Bristol or Salford (in fact we assert the opposite – no ability to use existing bus lanes for example; more difficulty in acquiring the relevant land in terms of CPO costs / blight; and so on), **there is no justification whatsoever for why the capital costs should sit below comparators.**

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<sup>2</sup> Infrastructure and Projects Authority *Best Practices in Benchmarking*, 2019, p39.

<sup>3</sup> RICS Professional Guidance, global, *Cost analysis and benchmarking*, 2013, p10.

<sup>4</sup> Infrastructure and Projects Authority *Best Practices in Benchmarking*, 2019 p41.

- **We continue to have concerns that the comparator costs will have excluded certain key capital cost elements** (see Appendix A and associated comments in relation to Q4). We also note in this context government guidance: *“How appropriate is your benchmark figure? Comparing predicted figures against a benchmark only works if the benchmark is a valid figure itself. Stating the robustness and quality of your benchmark, and the data from which it is derived, is therefore good practice.”*<sup>5</sup>. **This has not been considered at all in the evidence base.**
- Document EXD/082 does not consider long-term pump priming as a capital cost despite Hyas then making a separate small capital cost allowance for it in the viability analysis. **We reiterate our previous comments including at the EiP that the long-term pump priming / usage incentivisation in the viability analysis is likely to be understated by 5-10x (500-1000%) in Hyas** based on Fastrack Route A (one of or indeed the only BRT systems which achieved a strong modal share change, even if what it achieved is lower than what is targeted in North Essex), where for comparative reference this cost was around 65% of the size of the system construction cost.
- The by-infrastructure-type segmental costs which Jacobs have used to put together the capital costs **will themselves almost certainly have been based on data which has not been adjusted for historical inflation**, so there should be no misunderstanding that the “bottom up” data is any more robust than that used for comparables.
- Referring to Tables 2 and 3 in EXD/082, given the uncertainty around routes (see for example the obviously very different lengths of the options for Routes 3 and 4 in EB/079), **it is unclear which route options are actually being used for the per km calculations, indeed such that the capital cost information is obscured to an even greater extent.**
- As alluded to above, Tables 1, 2 and 3 show midpoints and upper bounds as per km figures, **but the only output of the original EB/079 report used in the Hyas analysis is the lower bound of the higher investment case.**

#### Question 4: Clarifications regarding Fastrack

Mr Johnstone – here and as the main consultant objecting to the UDC RTS proposals – has drawn on his professional experience as designer of Fastrack Route A in order to assess the NEA RTS plans. **Route A is highly relevant in context**, as it is one of the only – or indeed possibly the only – BRT systems which achieved >10% modal share change (albeit not as high as that required in North Essex), while it is also a suitable comparator in that it was created to support a significant new housing development, which has interesting read-across in the context of pump priming / usage incentivisation.

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<sup>5</sup> Infrastructure and Projects Authority *Best Practices in Benchmarking*, 2019 p41.

In the course of preparing his submissions, Mr Johnstone revisited his work on Fastrack Route A, including making the necessary adjustments for historical inflation, and calculated that total capital costs (including prime pumping / usage incentivisation) represented £13.3m/km. **He emphasised at length – including during EIP Matter 6 – how capital costs needed to take into account a significant number of items in order to reflect an all-in “real world” cost for a BRT system.** His concerns were, and continue to be, that a number of these have not been reflected in the Jacobs analysis.

It appears that Jacobs and/or the NEAs were attempting to discredit Mr Johnstone at the Matter 6 EIP by citing lower costs for Fastrack. **Unfortunately they were referring to the wrong Fastrack route;** this and the information relating thereto in EXD/082 give rise to a number of key points:

- **Fastrack Route A is the most relevant** in the modal share change it delivered and also its development to support a large new housing development.
- In particular Fastrack Route B required little new BRT infrastructure: as EXD/082 p6 outlines only around 1/3 of the route is dedicated busway (and – see below – we believe this relates in part to route sections which were actually constructed and paid for by Route A). **It is, as noted by Jacobs in fact, therefore not a useful comparator, whereas Fastrack Route A is a very relevant comparator.**
- Mr Johnstone informs us that the terminus (and associated roads) at Dartford were built by and paid for by Route A and used by Route B. **As a result this key and expensive item will not be reflected in the Route B capital costs.**
- It will likely not be a surprise that we note that Jacobs (or the NEAs, whichever) have not adjusted the quoted figures (£15m for 5.5km in historical price terms) for the semi-segregated piece of Fastrack Route B for historical inflation. **If they had done so, our calculations suggest it would give a figure of £4.7m/km (above the NEA capital costs).** However we note again that we believe that the figures provided are not considering that Route A actually paid for part of this segment which means the £4.7m/km should be higher.
- The £4.7m/km stated above does not include any pump priming/usage incentivisation.
- We reiterate Mr Johnstone’s frequently cited broader concerns that **the capital costs will almost certainly exclude many key items which are required for “real world” delivery of BRT** – these are shown in Appendix A for completeness.

We here have an example – Fastrack Route B – of a very basic BRT route from a technical perspective, but still the capital costs (which we know are missing key elements) for the segment which represents meaningful BRT, once adjusted for historical inflation, are above that which is being put forwards for the NEA examination. **While Jacobs raised Fastrack Route B for all the wrong reasons, it actually has some utility for the examination in that it succeeds in casting yet further doubt on the credibility of their work.**

## Appendix A

The following items comprise capital and quasi-capital costs for such schemes. Mr Johnstone has included all of them in the costs provided previously for Fastrack Route A:

- Core construction costs
- Offsite land costs
- CPO and associated blight
- S278 costs and Land Compensation Act payments
- Car parking and other measures (plus associated land) to remove third-party obstructions from the route
- Design fees
- Legal and other professional fees
- Terminals and associated roads / connections
- Bridges and other structures
- Ticketing systems
- Control centre and staffing
- Informatics and cameras
- Initial lump sum payment on bus lease contracts
- Adoption costs
- Abstraction cost from other routes (i.e. payments to operators such that they agree to operate the new route even though it will cannibalise existing routes)
- Pump priming / long term usage incentivisation