
From: David Powell
Sent: 26 February 2007 11:45
To: Matthew Crosse
Cc: Jim Harries; Roger Jones (Transdev); 'Dorrington, Kim (Edinburgh Tram)'; Martin Donohoe - TSS; Tony Glazebrook; David Crawley; Susan Clark
Subject: Top 20 Engineering Issues

Matthew,

As part of the recently formed Project Engineering Steering Group, we agreed to independently table our individual "Top 20" issues. My contribution is as follows:

1. Wheel-rail interface – we have some definition in this area but considerably more work is needed
2. Contact wire height – this has been poorly managed with shifts in responsibility and unrealistic technical parameters developed in the design to date
3. Workshop equipment scope – this is poorly defined with contradictory documents having been provided to bidders
4. Tram length – I am conscious that PB are claiming that the information from the Tramco bids constitutes a change – this is incorrect, their designers have interpreted our requirement for a nominal 40m tram to mean 40.000m. What is clear is that their interpretation has created difficulties in a number of areas which need to be understood.
5. Tram interfaces – some are reasonably well defined, others less so. I am developing a process for managing this through the next few months – if we haven't got a credible position by the time we have both preferred bidders established, our novation strategy may be compromised.
6. Definition of RAMS targets – this has shifted significantly as the project has developed
7. Depot design – decision making needed to enable progress
8. Trackform design – PB's progress has been limited and their brief has varied over time. Infracos have been left to propose their own solutions.
9. Supervisory & communications system – this has been the source of much confusion historically. It may have improved lately but the relationship with what has been bid by Infraco needs to be examined.
10. Utilities design – I have little visibility of this, but don't believe that I'm alone in this regard!
11. Standards – the original tabulation of standards was removed from the Employer's Requirements and is being re-instated. We need to be certain that the listing is accurate, particularly as it will come as a "new" requirement to our Infracos.
12. Status of Infraco bids – generally, we have not yet sought to benchmark Infraco bidders' proposals against either the Employer's Requirements or the emerging PB design.
13. Run time – I understand that we have a mis-match between the requirements and the results of the simulation work undertaken thus far.
14. Lack of development of junction priorities – this is critical to firmly establishing run time
15. Ticketing strategy – this has changed substantially over the course of the project and remains a source of confusion
16. System integration – this has not been undertaken on a systematic basis thus far
17. Securing Infraco's acceptance of performance risk – this will not be a trivial task, particularly with a number of the aforementioned elements of work outstanding
18. Maintenance scope and definition – there are three interlocking contracts which need to be aligned and coordinated with the City's residual responsibilities. This still seems poorly defined.
19. Changing ownership of documentation – various documents have originated from PB and have been re-badged as tie's own. The most obvious example is the Employer's Requirements. This has let PB "off the hook" for a variety of issues
20. Decision making - all parties have been generally indecisive about technical issues. tie's ongoing changing of personnel and shifting emphasis on what is expected of the various parties has probably been at the root of this.

I have been reasonably blunt here and hope that this doesn't sound too negative. Unsurprisingly, my list is probably biased towards issues which affect the tram and the procurement process over the next six months or so. There are also a number of the points raised where I am not necessarily 100% up to date with the latest developments, so my comments may be out of date.

On the positive side, many of these issues could be solved without undue distress, indeed there are a number where I am aware that effort is being applied, however this is generally rather ad-hoc. The recently announced amplification of the Engineering function provides the ideal opportunity to tackle these points in a structured manner and to clearly

communicate the conclusions. I would be happy to take the lead on a number of these and support others as appropriate.

Best Regards

David