

**From:** [REDACTED]  
**To:** [Hopkins Richard](#)  
**Cc:** [Cadwell Amanda](#); [Kumapley Seyram](#); [Brady Colin](#); [Trinder Stefan](#)  
**Subject:** RE: West London Orbital Study  
**Date:** 14 January 2019 09:30:10

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Richard

Please see my answers in red below.

From: Hopkins Richard

Sent: 11 January 2019 17:00

To: [REDACTED]

Cc: Cadwell Amanda ; Kumapley Seyram ; Brady Colin ; Trinder Stefan

Subject: RE: West London Orbital Study

Thanks [REDACTED]. We will come back with views but one question is when you did your matrix calculations what if anything did you do about any negative values which may result from these calculations. E.g. in creation of A58N, etc. I included an 'if' statement in the matrix calcs so that if the result is negative the value is set to zero.

Also I note there were problems in Railplan coding at a number of "new stations" and as the coding from Railplan should be taken back into CUBE (or so I thought) were you happy that these problems were not in the Local impacts of CUBE? I presume the changes were down to how these stations are coded back into Street networks and not walk links but as then the walk networks are different in CUBE and Railplan you were happy that no need to do anything back into CUBE. As you suggest the WLO coding which we received for the GWC study and which was subsequently reused for this study was undertaken in CUBE, originally by WSP. After converting that coding into Railplan, we noticed errors in link lengths on newly coded street links approaching the new Harlesden WLO station. However the main "problems" were that some of the new WLO stations (namely Harlesden, Neasden and Staples Corner) were generating very little demand. Given that detailed planning has not been undertaken in relation to these stations (including where they are located) we took the opportunity to re-locate them in a way which would attract more demand i.e. we re-located the platforms so that they could be integrated within the existing Harlesden, Neasden and proposed new Brent Cross Thameslink stations respectively.

On the benefit calculations can you send me details/macro of what you have done so that we can consider this also. I have attached the macros that perform the benefits calculations. The process is called by *WLO\_benefits\_ge\_CTRL.mac*.

Thanks

Richard Hopkins

Transport For London

City Planning, 9th Floor, 9B2, 5 Endeavour Square

Tel [REDACTED]

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From: [REDACTED]

Sent: 11 January 2019 13:45

To: Hopkins Richard

Cc: Cadwell Amanda; Kumapley Seyram; Brady Colin; Trinder Stefan; Winkworth, David S

Subject: RE: West London Orbital Study

Hi Richard

Happy New Year to you. The information you have requested is below. On the subject of benefits outside London, we had a look at the runs we undertook with tighter convergence criteria and found that (dis)benefits were small which is what we would expect.

LTS

We used 1 existing scenario *40\_BakerlooLine\_Extension (code A131lp07)* - from this we generated Railplan matrices A45N (2031 AM Peak) and P80J (2031 PM Peak)

We also ran 3 new scenarios based on *40\_BakerlooLine\_Extension*;

1. A131WL01 - WLO 8tph  
from this we generated Railplan matrices A38N (2031 AM Peak) and P81j (2031 PM Peak)
2. A131WL04 - WLO 8tph + Baseline Development Capacity Growth

from this we generated Railplan matrix A56N (2031 AM Peak)

3. A131WLO5 - WLO 8tph + Max Development Capacity Growth

from this we generated Railplan matrix A57N (2031 AM Peak)

### Railplan

Here is the list of all Railplan runs which have been undertaken;

1. WO530A45N - 2031 AM Ref Case  
WO560A58N – 2031 AM Ref Case + Baseline Development Capacity Growth – as we hadn't run an equivalent LTS scenario for this we derived a matrix (A58N) for this run in Railplan using the calculation A56N-(A38N-A45N).  
WO561A59N - 2031 AM Ref Case + Max Development Capacity Growth – as we hadn't run an equivalent LTS scenario for this we derived a matrix (A59N) for this run in Railplan using the calculation A57N-(A38N-A45N).  
WO730P80J – 2031 PM Ref Case
2. WO540A38N - 2031 AM WLO 8tph (4tph Hounslow <> West Hampstead and 4tph Kew Bridge <> Hendon)  
WO740P81j - 2031 PM WLO 8tph (4tph Hounslow <> West Hampstead and 4tph Kew Bridge <> Hendon)
3. WO550A56N - 2031 AM WLO 8tph (4tph Hounslow <> West Hampstead and 4tph Kew Bridge <> Hendon) + Baseline Development Capacity Growth
4. WO551A57N - 2031 AM WLO 8tph (4tph Hounslow <> West Hampstead and 4tph Kew Bridge <> Hendon) + Max Development Capacity Growth
5. WO541A38N - 2031 AM WLO 4tph (4tph Hounslow <> Hendon)
6. WO542A38N - 2031 AM WLO 4tph (4tph Kew Bridge <> Hendon)
7. WO543A38N - 2031 AM WLO 4tph (4tph West Hampstead <> Hounslow)
8. WO544A38N - 2031 AM WLO 4tph (4tph West Hampstead <> Kew Bridge)
9. WO545A38N - 2031 AM WLO 4tph (4tph Staples Corner <> Hounslow)
10. WO546A38N - 2031 AM WLO 4tph (4tph Hendon <> Lionel Road)
11. WO547A38N - 2031 AM WLO 4tph (4tph Hendon <> Brentford)
12. WO552P81j - 2031 PM WLO 4tph (4tph Hounslow <> Hendon)
13. WO553A56N - 2031 AM WLO 4tph (4tph Hounslow <> Hendon) + Baseline Development Capacity Growth
14. WO554A57N - 2031 AM WLO 4tph (4tph Hounslow <> Hendon) + Max Development Capacity Growth
15. WO570A38N - 2031 AM WLO 8tph (4tph Hounslow <> West Hampstead and 4tph Kew Bridge <> Hendon) + updates to coding at Harlesden, Neasden and Staples Corner WLO stations
16. WO571A56N - 2031 AM WLO 8tph (4tph Hounslow <> West Hampstead and 4tph Kew Bridge <> Hendon) + Baseline Development Capacity Growth + updates to coding at Harlesden, Neasden and Staples Corner WLO stations
17. WO572A57N - 2031 AM WLO 8tph (4tph Hounslow <> West Hampstead and 4tph Kew Bridge <> Hendon) + Max Development Capacity Growth + updates to coding at Harlesden, Neasden and Staples Corner WLO stations
18. WO573A38N - 2031 AM WLO 4tph (4tph Hounslow <> Hendon) + updates to coding at Harlesden, Neasden and Staples Corner WLO stations
19. WO574A56N - 2031 AM WLO 4tph (4tph Hounslow <> Hendon) + Baseline Development Capacity Growth + updates to coding at Harlesden, Neasden and Staples Corner WLO stations
20. WO575A57N - 2031 AM WLO 4tph (4tph Hounslow <> Hendon) + Max Development Capacity Growth + updates to coding at Harlesden, Neasden and Staples Corner WLO stations
21. WO580A45N - 2031 AM Ref Case with stricter convergence criteria
22. WO581A38N - 2031 AM WLO 8tph (4tph Hounslow <> West Hampstead and 4tph Kew Bridge <> Hendon) with stricter convergence criteria
23. WO582A38N - 2031 AM WLO 4tph (4tph Hounslow <> Hendon) with stricter convergence criteria

### Benefit Calculations

For each Railplan Do Something run (i.e. with WLO) in the above list, the assigned demand matrix and the generalised time matrix output were used to calculate benefits along with the assigned demand matrix and the generalised time matrix output from the associated Do Minimum run (i.e. without WLO). The Do

Minimum matrices used in the calculations was dependent on the level of development in the Do Something (No additional development - WO530A45N/WO580A45N, Baseline development - WO560A58N, Max development - WO561A59N).

*Example – calculation of benefits for 3. WO550A56N - 2031 AM WLO 8tph (4tph Hounslow <> West Hampstead and 4tph Kew Bridge <> Hendon) + Baseline Development Capacity Growth:*

*Do Minimum Demand = A58N*

*Do Something Demand = A56N*

*Do Minimum Generalised Time Matrix = mf8.csv contained in WO560A58N standard outputs*

*Do Something Generalised Time Matrix = mf8.csv contained in WO550A56N standard outputs*

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From: Hopkins Richard [REDACTED] >

Sent: 10 January 2019 17:03

To: [REDACTED]

Cc: Cadwell Amanda <[REDACTED]>; Kumapley Seyram <[REDACTED]>

Brady Colin [REDACTED]; Trinder Stefan [REDACTED]

Subject: West London Orbital Study

Hi [REDACTED]

First of all Happy new year, I trust you are well.

I have been asked to review items with regard to this project and thought you might be able to help me.

I believe a number of LTS and Emme runs have been completed as part of the runs.

Can you provide the test list for al Railplan runs that have been completed, I believe there to be 4 levels of development taking place reference case, baseline, a medium level and Maximum development scenario, can you confirm or not that for each of these a LTS model run of 4 and 8 tph was completed (can you give us the LTS code or was this run on your own machine), these matrices were then taken into Railplan and separate runs have been completed looking at the benefits, etc.

These Emme runs did show some counter intuitive answers I believe but when convergence criterion was strengthened many of these feature were seen when looking at benefits/from and to zones in London. Did you look at benefits outside of this arae in a similar way at all.

You have then completed some benefit analysis can you tell me the relevant matrices that were used in these calculation and how they relate to the demand matrices created through LTS as part of this work.

I would like to get an answer to these questions can you perhaps confirm when it would be possible to provide these details to me please.

Thanks

Richard

Sent from my BlackBerry 10 smartphone on the O2 network.

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