

Technical note

Project:	Slough MRT	To:	Jolanta Rekiel
Subject:	Bus Service Headways and Journey Times	From:	Matt Gamble
Date:	5 May 2014	cc:	Oana Santos, Pascal-Thomas Byrne, Anan Allos, Eric Norton, Adil Chaudhrey

Introduction

This note describes the process undertaken in defining the service levels in the:

- 2015 – Do Minimum;
- 2015 – Do Something.

Do Minimum

For the Do Minimum, it is assumed that the package of measures currently being delivered as part of 'Better Bus' is completed. This includes:

- SCOOT at signals on A355 Farnham Road;
- Signals upgrades at certain junctions off the A4 in Langley;
- Upgrading junctions along the A4 to MOVA at Langley Road, Langley High Street and Upton Court Road;
- Widening eastbound A4 to 2 lanes (general traffic) at Brands Hill; and
- Bus lanes southbound A355 Farnham Road (junction at Three Tuns) and eastbound A4 London Road (junction at Upton Court Road).

Do Something

The definition of the Do Something is still under development but at present is understood to include:

- Bus lane A4 eastbound from a point opposite Twinches Lane to Three Tuns Junction;
- Bus priority in both directions in the Trading Estate;
- (Possible) Short section of bus lane eastbound A4 at the Ledgers Road junction;
- Continuous bus lane eastbound A4 between Upton Court Road and Langley High Street;
- Bus lane westbound A4 on the approach to Upton Court Road junction;
- Widening at the A4 / Uxbridge Road junction eastbound; and
- Upgrading further junctions along the A4 to MOVA including Montem Lane, Ledgers Road, Tesco and Uxbridge Road.

A feature of bus operations in Slough is that frequencies reduce at peak in the face of longer scheduled journey times but the same resource allocation as at off-peak. This is reflected in the model. For instance, routes 75 and 76 each operate on a 30 minute headway at off-peak times combining to provide a 15 minute headway over common sections. Frequencies reduce and become irregular at peak so that (for instance) westbound departures from the Bus Station towards the Trading Estate are at 07:51, 08:09, 08:27, 08:44, 09:00.

For 'Better Bus', we agreed with First in Berkshire that any time savings arising from lower journey times and improved punctuality would be ploughed into improving the frequency on the services affected. We have not seen any plans in detail but at the time of the preparation of the bid First estimated that this would result in

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an increase of 11,700 bus miles per year on route 78, a 5% increase. The measures would be primarily on bus routes 58 and 78 but other services (notably route 77) would also benefit.

We have assumed that the same approach would be taken here with the services which benefit from MRT, except in the case of routes 75 and 76 for which we have developed a step-change in frequency based on the latent demand for these services.

Routes 75 and 76

Proposition

Routes 75 (Heathrow Central – Slough – Maidenhead) and 76 (Heathrow Central – Slough – Cippenham) provide the public bus link between Slough rail station, the town centre and the A4 frontages of the Trading Estate. As stated above, the combined headway is 15 minutes but this increases at peak. This reduction in frequency and the irregularity described above reduces the ability of the service to provide an acceptable link for commuters on the Trading Estate and elsewhere.

We have taken the view that a frequency increase to a bus every 10 minutes at peak (a 'turn up and go' frequency) is required to fulfil the key role in bus / rail interchange at Slough. This is achieved in small part by recycling time savings into the timetable but more significantly in allocating additional resource.

The most efficient way to do this is to introduce another service (coded in the model as MRT). This operates between Heathrow Airport, Langley and the Trading Estate (Dover Road) every 30 minutes, and would combine with routes 75 and 76 to provide a combined 10 minute headway over the common section (Heathrow Airport – Dover Road).

Alternative

We have considered whether the MRT should operate via A4 London Road. This would provide a quicker journey time between the Trading Estate, Slough town centre and Heathrow Airport. Our view is that it should not because:

- If an even 10 minute headway is provided on the Trading Estate, then diverting every third bus to the A4 results in a lumpy '10 / 20 / 10 / 20' headway in Langley. This would be damaging to the bus market in Langley which in our experience is the major source of current demand on these routes;
- The resulting service proposition between the Trading Estate and Heathrow Airport is not particularly attractive – with only a 1 in 3 chance that at the time the passenger wishes to travel a 'fast' service is available; and
- Demand along the A4 London Road is relatively weak (route 77 is one of only two routes in Slough in receipt of daytime support). An additional service could undermine route 77 whilst not attracting very much intermediate demand.

Evaluation: Operating Cost

The current vehicle requirement on routes 75 and 76 is 10.

The service proposal above requires an additional 5 buses at peak; 4 at off-peak. Over the combined '75/76/MRT' operating cycle (incorporating the peak period) 16 minutes need to be saved if a regular 10 minute headway with this level of resource is to be provided.

The additional cost (in round terms) is estimated at £610,000 per annum.

Evaluation: Patronage and Revenue

The proposition is based on the replacement of existing shuttle buses to Bath Road frontages with the enhanced route 75/76. During recent observations around 400 2-way passengers / day were observed boarding shuttle bus services at Slough station. This gives around 800 1-way passengers / day.

Just under half the employees of the Bath Road frontages are estimated to have access to shuttle buses. We therefore believe that there is a significant opportunity to enhance the overall market for bus travel between Slough station and the Trading Estate.

We assume that shuttle services cease with MRT, and that the overall market grows by around 50% with MRT in place to around 1,200 1-way passenger journeys / day. With the annual Slough PlusBus fare of £480 (the cheapest available) this gives an annual revenue yield of around £300,000.

We would also expect growth along the route 75/76 corridor as a whole. Demand in Langley is observed to be strong and we feel should respond positively to an increase in frequency, while demand for travel to

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Heathrow is observed to be strong and such an increase in frequency would be in line with Heathrow Airport Ltd's Surface Access Strategy.

Demand west of the Trading Estate is weaker, however, and simply to increase the frequency of routes 75 and 76 to provide a combined 10-minute headway (so running every 20 minutes to Maidenhead and every 20 minutes to Cippenham) would saddle the service with substantial additional cost. Coding an additional service east of Dover Road minimises additional operating resource.

Using industry standard bus service elasticity and our own knowledge of the bus market and fares in Slough (note that this information is strictly confidential) we estimate an annual revenue yield of around £320,000.

In summary, shuttle bus revenue = £300,000 + frequency increase = £320,000 = total additional revenue £620,000 against additional operating cost estimate of £610,000.

Delivery

This service enhancement may require some pump-priming over the first 2 – 3 years while patronage builds. Clearly, the existing shuttle services need to cease operating. Currently, there is resistance to utilising public transport on the basis of:

- Planned and unplanned irregularity (which MRT addresses);
- Lack of awareness of the public transport options (this is being addressed as part of LSTF, though more work is needed); and
- Employees of different firms travelling together (this seems odd given that they catch the train together!).

It ought to be possible to make a financial case to current shuttle bus providers that it would cost less to subsidise free fares than it does to contract in services. And SBC could (if it chose) make life difficult for these services. It could deny them use of any bus priority measures (by making them available for registered local bus services only) and refuse to provide space at Slough rail station.

Routes 58 and 78

Proposition

The off-peak headway of each service is 30 minutes, combining to provide a 15 minute headway on the common section between Britwell, Slough and Langley (Trelawney Avenue). Again, at peak this headway is widened, and is represented in the model by a 36 minute headway for each route.

The BBAF measures should enable significant improvements to the journey time of both services and we assume a reduction in peak period headway from 36 to 33 minutes in the do minimum.

MRT brings further benefits and we assume a 30 minute headway service at peak on each service.

To achieve this with the current operating cycle (route 78 being interworked with routes 71 and 77), peak hour journey times need to reduce from 71 minutes at peak at present to 62 minutes.

Alternative

We have considered whether further frequency enhancements might be possible. Britwell and Farnham Road are observed to generate significant demand, and a frequency increase would be desirable. Demand to Trelawney Avenue in Langley is observed to be a little weaker (and east of Langley High Street sees in any case a frequency increase with routes 75 and 76). Further, route 58 combines with route 7 to provide an (almost) even 15 minute headway service between Slough and Uxbridge, and Iver Heath and Uxbridge. To increase the frequency on one service and not the other would result in a lumpy headway, and would not be expected to generate patronage.

The case for increasing the frequency of these services is therefore not clear. It would be possible to increase the frequency to every 10 minutes between Britwell and Slough Bus Station but unless this was projected on to Trelawney Avenue this would result in a lumpy '10 / 20 / 10 / 20' headway east of Slough Bus Station which we regard as undesirable. Further, the routes will probably see relatively little additional benefit from the MRT measures over and above that delivered by Better Bus. Whilst Britwell perhaps ought to see a higher frequency, this won't be delivered through MRT.

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Route 81

Route 81 (Hounslow – Colnbrook – Slough) is operated by Transport for London. It runs every 10 minutes (Mondays – Fridays, schooldays); 11 minutes (Mondays – Fridays, school holidays) and 12 minutes (Mondays – Fridays off-peak). Route 81 will see improvements to journey times as a result of both BBAF and MRT measures, but TfL are more likely to plough these benefits into reducing resource rather than increasing the already high frequency. This is because (unlike the First routes) the resource required at peak is substantially greater than at off-peak, representing an inefficient use of resource.

For this reason we assume a 10 minute headway all-day – which for a peak hour model effectively means no change.

Route 77

Route 77 (Dedworth – Windsor – Slough – Terminal 5) is one of only two daytime services currently in receipt of subsidy from Slough Borough Council. Its basic off-peak frequency is every 30 minutes but again the headway widens at peak.

The service benefits from both BBAF and MRT measures. We therefore take account of these by narrowing the peak headway to every 33 minutes with BBAF and every 30 minutes with MRT.