



Directorate of Economy and Place

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Ref: YBF York Station

10<sup>th</sup> October 2018

Dear Graham, John and Dave,

### **York Bus Forum Proposals for York Station Frontage**

Thank you very much for the presentation of York Bus Forum's proposed bus interchange at York Station at your meeting on September 18<sup>th</sup>. It was very clear, to those of us present, that a great deal of effort and thought had gone into what Alan Robinson presented. This is important – we don't pretend to have all the answers to everything, and discussion, presentation of alternative proposals and challenges to the approaches we take are an important part of the democratic process and scrutiny of government – and we hope you'll continue to do this.

At the end of the meeting your group passed a motion for CYC to look again at their proposals and make an evaluation of the alternative proposal by the Bus Forum. This letter sets out that process and our thoughts going forward. In it we provide background on the current CYC proposal, a critique of your own proposal, present a comparison of the two approaches and close with some concluding remarks.

#### **The current CYC proposal**

The current CYC proposal is shown in figure 1. As can be seen, it features:

- A movement of the bus stopping area from being immediately in front of the portico to a location approximately 200m west of the portico
- A replacement of the current 8 on-road stops with 10 on-road stops – (eight of which are within super-stops (ie space for two buses to stop but just one pole – so there are six bus stop poles).
- Two layover bays on the circulation road adjacent to the Railway Institute to accommodate terminating buses during drivers' rest breaks (there is no facility for this at present)

- A bus stop and layby on the access road adjacent to the entrance to the proposed short stay car park – to accommodate services which would turn at York Rail Station, but which do not lay over there (such as the existing service 66). Like the layover bays, this is an entirely new provision.
- There is no change to the location of the Tour Bus stop near to Tea Room Square, although the new stop is somewhat longer than the existing stop.
- It is also worth pointing out that the new bus stops will be provided to current design standards for bus stops (which the existing stops are not), so, for example, the length of the proposed lay-bys is 120m, replacing the current layby on the south side of Queen St (adj to the old tram shelter) which is 87m long. Further space is freed up by the replacement of articulated buses on two of the park and ride services to the Rail Station (3 and 7) with double decker buses, which are considerably shorter (although it is, of course, possible that articulated buses may return in the future).



The CYC design was arrived at through a process which combined consultation with bus operators, an assessment of future design capacities (attached as Appendix A to this letter) with an engineering assessment of constraints on the site. The overarching objectives of the design process were to improve interchange facilities at the Station, but also:

- Alleviate the conflicts around the entrance/ exit to Tea Room Square, because these introduce serious reliability problems on the road network around the Station. It also had to facilitate removing vehicles from the Portico, which currently suffers from extremely poor air quality because it is an enclosed space in which vehicles sit with engines idling;
- Accommodate the full range of facilities which are currently provided at the Station Frontage, including long and short stay parking, servicing for the rail industry and Royal York Hotel, pick up/ set down facilities and a taxi rank large enough to accommodate the high peaked demands which are typical of large railway stations;
- Improve the setting of the Station, making it far more attractive to people walking along Queen Street, waiting for/ getting on and off buses, arriving in York on the rail network or viewing the area from the City Walls.

In bus terms, the consultation with bus operators, which took place through the QBP, set out that:

- The design needed to be able to accommodate increases in services resulting from travel growth as a result of the Local Plan housing and employment growth in York;
- We needed to be cognisant that the Rail Station is served by a variety of bus services – not just local stage-carriage and park & ride services, but also rail replacement bus services, shuttle buses (race days, events, university open days etc), buses dropping school parties off at the Station, excursion coaches and scheduled coach services by National Express and others. Demand for the non-conventional services is variable from day to day – therefore it was important to build flexible operation into the plans – and that these services use a variety of vehicles, including vehicles with doors part way down the sides of the vehicles;
- There should be no reduction in passenger amenity compared to the current arrangements; and
- The design needed to provide a facility to turn buses around at the Station, replacing the current turn-arounds using either Lendal Arch Gyratory or Nunnery Lane/ Prices Lane Gyratory (which currently either result in some services failing to reach the Station or suffering significant reliability issues as they travel long distances in congested traffic to turn).

The issue of providing terminating facilities for all services was not explored in any great depth – this was because the bus operators did not request this provision, over the ability, referred to above, to turn vehicles and undertake some layover at the Station for longer distance services which terminate there (for example, EYMS's services). When put to them, operators said they preferred to retain "straight through" bus stops because they had greater operational flexibility.

Of course, it also goes without saying that whatever scheme is taken forward has to be deliverable, which in this instance means:

- It has to be affordable within the funding that CYC can realistically attract, in the immediate term, from its own sources and the West Yorkshire Transport Fund for delivering this measure. It also either needs to have ongoing operating costs which are similar to the current facilities or which, if they are greater, can be recovered in some way that does not impose an ongoing cost on limited local funds;
- It has to be deliverable with the assistance of partners in the Rail Industry – for example, Network Rail. This is critical because the scheme involves substantial loss of surface parking and the erection of a new multi-storey car park. In order to proceed, a critical design objective was no net reduction in parking provision on the site – and release of some land for development to cover the cost of constructing the new multi-storey car park;
- It should minimise any congestion on Queen Street from its operation – particularly that effecting bus services;
- The design had to be "safe" – for pedestrians, cyclists, people in buses, motorists and those waiting for buses or enjoying the new public spaces around the Station. Regrettably, in this day and age this also involves considering how design can mitigate terrorism risks – for example, from vehicles entering pedestrian areas at speed.

Turning then to the design put forward at your meeting on the 18<sup>th</sup> September.

First of all, I think you have taken a slightly different approach to us in that your design is concentrated around the southern end of the trainshed, but includes elements which would be deliverable over the longer term than the bus interchange – particularly the new concourse and bridge. It also only addresses the southern end of the Station, whilst we have considered the whole eastern facade of the Station, including Tea Room Square. As you have said, trips to and from York Station are forecast to increase by a factor of 3 to 50m by 2050, and it is quite possible new facilities for crossing the rail station – either a bridge or (perhaps better aesthetically<sup>1</sup>) a subway – may come forward as those plans are developed, or to serve York Central – however, as only £15m is presently available (for the demolition of Queen Street Bridge, new highway and delivery of the interchange scheme) it is

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<sup>1</sup> A good example can be found in Salzburg.

perhaps easier to put aside consideration of the new bridge/ concourse for now and I have done this in the assessment below. It is worth pointing out that there is nothing about the CYC proposal that would preclude a new bridge or subway in the future.

If the bridge/ concourse, then, is excluded from this analysis, we can consider the relative merits of the YBF scheme against the design objectives and constraints for the scheme as a whole. For the Bus Forum's scheme I have made four assumptions about its basic deliverability:

- Without the new concourse/ bridge the scheme's cost would be broadly the same as the CYC scheme and hence affordable (essentially, this is a consideration that the additional costs of providing the concourse and alterations to the arches would be balanced by the reduced cost of urban realm improvements required – because landscaped pedestrian areas would be smaller with the loss of the large paved areas adjacent to the bus stops and laybys in the CYC). This may or may not be the case in practice and if the cost was higher it would be a significant barrier to delivering the scheme.
- The design to be assessed is that presented on September 18<sup>th</sup> – ie a design with 17 terminating bus bays facing the concourse and accessed through arches between structural arch supporting pillars in the Station's eastern wall. This would be accessed by a single junction immediately east of the Railway Institute and an exit immediately west of the Station Portico. I have seen other designs by you with both more bays (to the south of the trainshed) and fewer bays (13 adjacent to the trainshed), but am assuming the design presented on the 18<sup>th</sup> is the final iteration;
- Bus services and routings would be broadly the same as now – in a deregulated market, which would almost certainly be the case when the interchange is delivered - CYC cannot specify service routings, or, indeed, compel operators to use particular facilities;
- I have also assumed that highway junction geometries, sightlines, cycleways and the internal layout of the bus station itself in the YBF proposal could operate safely and efficiently, or could be modified to do so relatively easily and without compromising the overall design. Again, in advance of a safety audit, swept path analysis etc this may or may not be the case and represents an uncertainty in your proposal which would have to be resolved if the proposal was taken forward to a detailed design.

I have then considered the YBF scheme and CYC's scheme against a number of criteria related initially to bus services/ interchange and then to the wider objectives of the scheme. These are set out in the table below.

**Table 1: Design Comparison**

Design Objective	Consideration	CYC Proposal	YBF Proposal
<p><b>Bus &amp; Interchange items</b></p> <p>Capacity available to handle services anticipated to serve Local Plan growth</p>	<p>Station served by 59 buses per hour (outbound) and 61 buses per hour (inbound) – though includes 6 City Sightseeing services, which go from a different stop) (at design – slightly different now due to some changed routings). Assessment for Local Plan suggests that it would be reasonable to plan for an increase to 76 (inbound (70 without City Sightseeing)) and reduction to 50 outbound (not an absolute reduction – some services (e.g. 59 move to western side of Station). See attached note – overall services at the Station (both sides) increase.)</p>	<p>2 x 2 bus superstops and one single stop in each direction gives theoretical capacity of 100 buses per hour in each direction (assuming Nottingham QP agreement standard of 20 buses per stop per hour), plus a further 12 buses for the single stop on the access road = 100 buses outbound, 100 buses inbound, 12 terminating buses = 212.</p> <p>Capacity criteria met and significant room for increased service levels.</p>	<p>17 x single angled drive in/ reverse out stops gives total capacity of 136 buses (assuming each stop can handle 8 buses per hour with acceptable levels of bus on bus congestion occurring (based on service headway spacing for busiest stands at Leeds Bus Station)). Matching demand to bays suggests that 10 bays would be required inbound (capacity of 80) and 7 outbound (capacity of 56).</p> <p>Capacity criteria met on paper, but no real room for expansion. Actual capacity may well be significantly lower than theoretical capacity because it will likely not be possible to arrange services so that each bay is used by 8 buses per hour – for example, several services in York operate at 6 per hour and would have to be combined with 2 bus services to make up an 8 – with the likelihood of uneven headway spacings at the needed to accommodate this. Some services (e.g. Coastliner/ CityZap) are specialist and may want to have a bay to themselves even though they operate &lt;8 buses per hour. Risk that additional capacity would be needed elsewhere for some services (e.g. adj Portico) as design uses 17 of 19 available arches and 2 remaining arches are too close to taxi rank to be used? Also problem that there is no immediately obvious stacking space for dealing with occasions when buses bunch and a second bus presents at the stop before the first has left (as currently happens with 66). Cause of congestion in bus station?</p>

<p>Flexibility to serve different types of service (e.g. stage/ P&amp;R, coach, rail replacement etc)</p>	<p>Capacity needs to exist to serve additional/ non-standard demands, which may peak at certain times of year (rail replacement services, race day shuttles etc). Also, buses on some services have doors half way down vehicle as well as at front (e.g. park and ride artics) to speed boarding/ alighting.</p>	<p>CYC design has significant spare capacity, particularly in form of layover bays, which could be used to accommodate seasonal demands etc. Operators have expressed a preference for "straight-through" bus stops for services which don't terminate at Rail Station. Stops can be used by vehicles with intermediate doors.</p> <p>Criteria met</p>	<p>Very little spare capacity exists – and would have to be provided elsewhere – e.g. western side of Station (noting constraint of Leeman Underpass on use of some types of vehicle) or adjacent to Portico. If "straight-through" stops were provided, these would have to be elsewhere (e.g. adjacent to Portico). Use of docking at front of buses would preclude using doors along body of vehicle at this location (e.g. on park and ride or future other high capacity vehicles).</p> <p>Criteria not met</p>
<p>Equivalent Passenger Amenity</p>	<p>Currently open front shelters provided adjacent to City Walls. Open front canopy adjacent Station Portico and shelter on stop island</p>	<p>CYC design is broadly comparable to present accommodation. Portico could be used as undercover waiting area for passengers with longer waits (e.g. for less frequent services). On this basis there would be a small improvement for passengers.</p> <p>Criteria met</p>	<p>Proposal would allow much higher quality accommodation for passengers – covered accommodation, greater seating space and integration with facilities (e.g. food and drink) at Rail Station.</p> <p>Criteria met – passenger facilities could be better with this option</p>
<p>Layover and turnaround facilities</p>	<p>None. Buses have to turn around using Nunnery Lane, Lendal Arch Gyatory or use of contrived routings through city centre (e.g. Skeldergate). No formal layover facilities, although some informal facilities scattered around city centre.</p>	<p>Provides a turn round facility and two layover bays.</p> <p>Criteria met</p>	<p>Provides turn around facility through bus station. Layover provision not clear, but would further detract from facility capacity if provided in the 17 bays.</p> <p>Turnaround criteria met. Layover criteria not met (?), but perhaps could be with modification to the existing design.</p>



**Other design objectives**

Alleviates congestion and delay around Tea-Room Square and removes vehicles from Portico

Extensive congestion in this area can add several minutes to journey times out of the Portico at peak times. Portico air quality extremely poor. Potential threats to safety for pedestrians/ cyclists through extensive conflicts around entrance/ exit to tea Room Square and bus laybys/ traffic on Queen Street.

Tea Room Square pedestrianised (apart from a very small number of vehicle movements associated with servicing and British Transport Police). Vehicles removed from Portico. Space currently occupied by inbound bus stops released for use as public square.

Criteria met

Design doesn't consider this area. However, no provision for short stay parking or set down/ pick up in the YBF design for southern end of Station. Short stay parking could theoretically be accommodated in an additional storey of the multi-storey car park (although there may be massing/ structure height concerns about this), or in area immediately to the South east of the trainshed (though the design currently shows this area as being partly occupied by reinstated rail lines and the eastern base of the proposed new bridge/ concourse). Pick up/ set down needs to be near a Station entrance (to accommodate people with restricted mobility). Potential options to do this would be retaining use of the Portico (which would require a new access road, not shown on the plan), Tea Room Square or providing to the side of the new square adjacent to the Portico.

Not clear if criteria is met

<p>Improves setting of Station for pedestrians, cyclists, from Walls, for those arriving on trains</p>	<p>Setting currently poor and dominated by blacktop/ highways.</p>	<p>Highway/ blacktop space is significantly reduced with substantial increase in space for pedestrians. View from City Walls would be much improved, new pedestrian area in front of de-trafficked Portico and Tea Room Square will have much higher amenity than current setting.</p>	<p>Large area of heavy duty surfacing provided for bus turning manoeuvres would detract from setting. Reduced areas for pedestrian circulation. Outcomes at Tea Room Square/ Portico and ped. area adjacent to Portico would depend on provision for short stay parking and set down/ pick up. Vehicle intrusion into these areas would detract from any improvement in amenity.</p> <p>Criteria not met – bus turning area likely to be unsightly. Gains from removing traffic from TRS/ Station Square/ Portico may not be realised.</p>
<p>Accommodates current use – long/ short stay parking, pick up and set down, taxis, rail industry servicing</p>	<p>Long stay car park is surface to south of trainshed, short stay is accommodated in northern section of trainshed (accessed through Tea Room Square), taxis/ pick-up/ set down is in Portico, although much also happens in bus stops adjacent to Portico. Servicing from Tea Room Square. Extensive traffic conflicts at entrance/ exit to Tea Room Square from various different transport uses.</p>	<p>All uses accommodated.</p> <p>Criteria met</p>	<p>Not clear where short stay parking and pick-up/ set down facilities would be provided. Taxi facilities provided adjacent to Bus Station.</p> <p>Criteria not met. Perhaps could be but would require modification of design and possible adverse impacts on pedestrian areas/ Tea Room Square/ Portico/ Station Square.</p>

<p>Safe by design</p>	<p>Facility is historic design retro-fitted with mitigation where required. Not Applicable.</p>	<p>Minimises opportunities for penetration of pedestrian areas by vehicles by design of kerb lines etc.</p> <p>Criteria met</p>	<p>Potential problem with vehicles entering bus turnaround area (no access restriction) and using empty space to gather speed towards stationary taxis/ taxi queue. Mitigation difficult.</p> <p>Criteria not met</p>
<p>Affordable and deliverable within current structures</p>	<p>Not applicable</p>	<p>Webtag business case in preparation. Passengers gain amenity uplift, with no adverse journey time impacts. Some benefits from bus journey time savings/ reliability benefits through no longer needing to travel around Prices Lane/ Lendal Arch Gyrotory to turn around. Some adverse impacts from longer walk distances for some bus passengers boarding/ alighting at Station. Ongoing costs would be no different from existing facilities.</p>	<p>Increases in journey times for buses and passengers would impose a significant drag on business case benefits which would be very difficult to overcome with the amenity benefits which would be experienced only by the passengers boarding/ alighting at the Station (a subset of the passengers seeing a change in their generalised cost as a result of the intervention). Possible adverse impacts on service reliability because of constraint of single entry/ exit to facility. Bus operators have not committed to paying a user charge for the facility (or expressed a desire for it), so there are risks and uncertainties about how the ongoing costs of the facility would be met.</p> <p>Likely ongoing operational cost from providing banksmen to help buses reverse as area behind them could not be kept free of other uses (e.g. taxi queue and possibly pedestrians and cyclists, confused drivers etc).</p>

As such, the view that we have formed in comparing the two proposals is that:

- The YBF proposal presents better amenity for waiting and interchanging passenger, but;
- The YBF proposal does not meet, or only partially meets, the other 8 design criteria for the new interchange at the Rail Station, with particular problems with:
  - Providing enough capacity for foreseeable increases in services/ frequencies associated with the Local Plan in a practically usable form;
  - Accommodating “Straight-through” buses, non stage services like race day shuttles and rail replacement services, and set-down/ pick up car movements and short stay parking – with the implication that these may need to be provided elsewhere in the Station area, such as Tea Room Square, the area in front of the Portico, or the Portico itself – which would detract from the setting of the Station. The YBF proposal would also prevent use of intermediate doors on buses (e.g. the current park and ride buses) which can be used to speed up boarding and alighting times.
  - Whilst it provides extensive turnaround facilities, it is not clear how it provides layover facilities, unless they are provided somewhere outside of the plan area – which again might have an adverse impact on the setting of the Station. If layover facilities were provided within the proposed 17 bays, this would further reduce the facility’s capacity (as per point above), which is already marginal.
  - The large area provided for buses to reverse out of their bays would be unsightly and could potentially be used for terrorist ram attacks, and this would be difficult to design out. It also reduces space available for pedestrian circulation around the station because more space is needed to turn/ reverse buses as they enter and exit their stands.
  - We are not clear how a business case could be assembled to support the introduction of a facility of this design. We would also be concerned about CYC’s exposure to unavoidable ongoing revenue costs (for banksmen). We are not clear how these costs could be recouped because the facility is not responding to a call from bus operators for an interchange of this type at York Station – consequently, we would not be able to assume the operators would fund the facility through access charge revenue as they do at other bus station (e.g. those in West Yorkshire).
- We are also concerned that introducing the facility would introduce a new constraint on bus operations in York because the single entrance/ exits to the facility would be likely to cause congestion getting into and out of the facility. There may also be congestion associated with accessing individual bays – for example, as is currently seen now when more than one service 66 bus presents at the existing station stop RJ. By your own estimates, the facility would add 1 minute to inbound passenger journey times, and 3 minutes for outbound passengers. It is worth pointing out that this would impose a very significant disbenefit to any business case for the facility which would be difficult to overcome with the amenity benefits experienced by passengers with trips beginning or ending at the Rail Station. As such, we are concerned that the Bus Station would not be affordable with the funding we are currently intending to access (and we are not aware of other funding).

There are differing degrees of difficulty overcoming the issues flagged up by this exercise. Some, such as the issues around layover spaces or short stay parking, could be designed out relatively easily. Others, such as around facility capacity and pick up/ set down are likely to be more challenging to solve without unintended consequences elsewhere in the scheme (e.g. would there be a need to leave pick up/ set down provision in Tea Room Square? Would there be a need to put straight-through bus stops adjacent to Station Square?). The problem of amenity detracting from the large area of heavy-duty surfacing in the bus turning area and the additional journey time for straight through passengers and buses – and resultant challenge to the business case for the scheme – are issues that we think are not possible to resolve.

As such, we are confident that the approach we are following will deliver better outcomes for York and its bus services. Public consultation on the CYC proposed arrangement also appears to generally support the design that is currently put forward. The bus operators in particular gave feedback which was supportive of the approach being taken. There is, of course, an appetite amongst some people for providing a bus station at the Rail Station, but we don't think that this is such that it overcomes the support we have received for the proposal we have put forward, even if there were not some significant technical shortcomings with the scheme you are suggesting.

We are very grateful for the work you have done on your proposal and we have found comparing it with the CYC proposal to be a thought-provoking and rewarding process. We hope that this letter is not too disappointing and look forward to your input into further schemes as they move forward.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Gary Frost', with a long horizontal line extending to the right.

**Gary Frost**

Major Transport Projects Manager

**Appendix: Bus Services at York Station – forecasts for planning the new interchange: November 2017.**

**South/ Westbound (outbound)**

Service	Current stop used	Type of use*	In 2015	Current (Nov 2017)	15 year forecast	Notes
1	RF	S	6	5	6	Aspiration for 6 bph, for new dev. at Haxby
3	RG	S	6	6	6	Currently articulated
4	RG	S	8	6	6	
5/5A	RF	S	0	4	4	Aspiration for 6 bph
7	RH	S	6	6	6	Currently articulated. One direction only.
10	-	-	2	0	0	Route changed
11	RH	S	2	2	2	
12	RH	S	2	2	6	Increase reflects development at Monks Cross
13	RH	S	1	2	2	
14/ 16	RH	S	1	1	1	
21	RJ	S	0.5	0.5	0.5	
22/ 23	RJ	S	0.5	0.5	0	Move to other side of Stn
24	RH	S	1	1	1	
26	RH	S	1	1	1	
36	RJ	S	0.5	0.5	0.5	
37	RJ	S	0.5	0.5	0.5	
44	-	-	6	0	0	Set down only. Route ceased.

59	RF	S	6	6	0	Move to other side of Stn
66	RF	O	0	8	8 <sup>2</sup>	Needs to turn
412	RJ	T	0.5	0.5	0.5	
422	RJ	T	0.5	0.5	0.5	
Coastliner	RJ	T	4	3	3	
National Express	RJ	T	1	1	1	
CityZap	RJ	T	0	2	2	
<b>TOTAL per hour</b>			<b>56</b>	<b>59</b>	<b>57.5</b>	

\*T=timing point, S=calling point, O=set down only

<sup>2</sup> Because this service would turn at the Station, it would probably be possible to stop it on only one side of the road – hence reduce the number of stopping movements on this side of the road by 8.

## North/ Eastbound (inbound)

Service	Current stop used	Type of use*	2015	Current	15 year forecast	Notes
1	RA	T	6	5	6	Aspiration for 6 bph
3	RD	O	6	6	6	Currently articulated
4	RA	O	8	6	6	
5/5A	RB	T	0	4	4	Aspiration for 6 bph
10	-	-	2	0	0	
11	RB	T	2	2	2	
12	RB	T	2	2	6	Increase for development at Monks Cross
13	RA	T	1	2	2	
14/ 16	RA	T	1	1	1	
21	RB	T	0.5	0.5	0.5	
22/ 23	RA	O	0.5	0.5	0	Move to other side of Stn
24	RA	O	1	1	1	
26	RB	T	1	1	1	
36	RJ	T	0.5	0.5	0.5	
37	RJ	T	0.5	0.5	0.5	
44	-	-	6	0	0	Service ceased
59	RE	O	6	6	0	Move to other side of Stn
66	RD	T	0	8	8	Needs to turn
412	RB	T	0.5	0.5	0.5	
422	RB	T	0.5	0.5	0.5	



Coastliner	RC	T	4	3	3	
Nat Express	RC	T	1	1	1	
EYMS	RC	T	2	2	2	Needs to turn
CityZap	RC	T	0	2	2	
City Sightseeing	RE	S <sup>3</sup>	6	6	6	Seasonal. One direction only.
Land SE of York service	-	T	0	0	6	Terminating, needs to turn
Land NW of York service	-	T	0	0	6	Terminating, needs to turn
415 to Selby	-	T	0	0	4	Aspiration - needs to turn
<b>TOTAL per hour</b>			<b>58</b>	<b>61</b>	<b>75.5</b>	

#### Western side of Station

#### Outbound

Service	Current stop used	Type of use*	2015	Current	15 year forecast	Comments
5/5A	-	-	4	0	0	
10	None	S	0	2	2	
22/23	RJ	T	0	0	0.5	From east side
59	RF	S	0	0	6	From east side
<b>TOTAL per hour</b>			<b>4</b>	<b>2</b>	<b>8.5</b>	

<sup>3</sup> Not a timing point, but there is a need for the service to dwell here because of the commentary.

## Inbound

Service	Current stop used	Type of use*	2015	Current	15 year forecast	Comments
2	None	S	6	6	6	
5/5A	-	-	4	0	0	
10	None	S	0	2	2	
19	None	S	1	1	1	
29/31	None	S	1	1	1	
30	None	S	1	1	1	
22/23	RA	O	0	0	0.5	From east side
59	RE	O	0	0	6	From east side
<b>TOTAL per hour</b>			<b>13</b>	<b>11</b>	<b>17.5</b>	

Note: in practice, services 2, 10, 19, 29/31 and 30 currently stop on Leeman Rd (adj Railway Museum) and on Station Rise Stop RK (10 outbound only) and Station Avenue Stop RM (all inbound services)

### Operational considerations

- Services 23/23 and 59 would be moved to western side of station as closer to new post York Central line of route – would reduce outbound side demand to 57.5 per hour and inbound to 75.5 per hour
- Is assumed that services which terminate and turn at the Station (Land SE and NW of York, 415, EYMS, 66) only serve one side of road – is assumed they are on Eastbound side now – but they could be on the west bound side, balanced between the two sides of the road, use the layover bays on the Station circulatory road or moved to the western side of the Station (nb – services 66 and 415 and EYMS services currently use double deckers, so wouldn't currently be able to use Leeman Road tunnel unless the vehicle type was changed – which may cause capacity problems. Method of traffic control through Leeman Arch would also be critical). Likewise any new services moved to the western side of the Station would also need to use single deck vehicles to get through the tunnel. Turning facilities would also have to be provided on the western side of the Station).
- Layover bays – access to and from/ blockages/ reliability crucial to effective operation – enforcement critical.