

CITY HUB				
No.	From/To	NGT Stops	Description	Key Issues/Further consideration
CH1	City Square and Boar Lane	City Square, Trinity	The NGT alignment on Boar Lane is shared with general traffic with minimal kerb line alterations except in the vicinity of City Square where there would be a westbound only NGT section to connect Boar Lane with Park Row. City Square is proposed to be shared space with pedestrians with the stop platforms sloping back at 1 in 40 to integrate into the surrounding surfaces. This location is an aspirational interchange location: indirect with Leeds railway station and direct with an adjacent bus stop (s) in City Square.	<ul style="list-style-type: none"> Consider bus stop provision (including FTR) and highway modifications in conjunction with Trinity West Developments Work has confirmed that 2 bus lay-bys are feasible at City Square to provide a direct NGT interchange Loop traffic reduced to 2 lanes with associated kerb line modifications as discussed with the highway authority Potential taxi queues blocking back on Boar Lane from New Station Street
CH2	(Westbound) Harper Street, Kirkgate, New Market Street and Duncan Street. (Eastbound) Duncan Street, New Market Street, Kirkgate and New York Street.	Briggate, Corn Exchange	Lower Briggate (currently one way northbound) will be modified to allow NGT & buses southbound. Call Lane to become a bus gate as per LCC's aspiration.	<ul style="list-style-type: none"> Opportunity for NGT only southbound on Lower Briggate with buses routed via Call Lane as existing - to be reviewed Change (not confirmed) to a one way only anti-clockwise NGT loop would require a northbound NGT stop (not currently provided) on Lower Briggate but creates a possible opportunity to remove the (current) southbound NGT stop which would then ease loading & parking issues adjacent to shops. Access restrictions to Call Lane to be reviewed to ensure access is maintained Access and servicing requirements (in particular in the city centre) are complex & a survey has been recommended by MM Corn Exchange bus stop interchange layout review required
CH3	New York Street, Off-line (through market site).	Central Bus Station, Markets	On highway NGT is mixed with access traffic except for a bus lane on the approach to the outbound signals in advance of the Duke Street junction. Off highway NGT would route alongside the multi-storey car park and through the Markets area.	<ul style="list-style-type: none"> NGT could conflict with any proposed development on the Markets area. Alternative scheme to turn New York Street (westbound) into public transport only between Duke Street & Cross York Street has been discussed with Leeds UTC and appears to have advantages; but has not been modelled. Includes local area traffic management and diversions/ re-routing via Kirkgate. Need to progress design and modelling further. Bus stop and loading provision to be addressed Markets NGT stop location to be reviewed with further investigation to enhance links to the bus station (currently severed by boundary wall)
CH4	Eastgate, Headrow and Park Row	Eastgate, Headrow, Cookridge	This section covers the new route from the markets area, on to a pedestrianised/ shared space Eastgate, running along the Headrow with general traffic to Cookridge Street and down Park Row.	<ul style="list-style-type: none"> The alignment between Milgarth Police Station (assuming it is retained) and the proposed Eastgate development is under review. If the Police station is demolished & the NGT alignment moved east (to improve alignment and maximise Eastgate) loading issues to the culverted Lady Beck will need to be considered PT box operations study has highlighted significant reliability issues for NGT on the Headrow from signals and bus stop capacity/ allocation. Requires further investigation to define mitigation measures Appears to be scope to rationalise bus stop usage in the city centre Cookridge Street Stop (together with Civic Stop) location avoids crowding at the edge of Millennium Square and better crowd dispersment (after events). Little scope to move Millennium Square stop closer due to servicing and access requirements <ul style="list-style-type: none"> Further work on shared surface proposals, includes engagement with access groups and real-world testing of mitigation proposals Needs confirmation whether this section is two-way or a one-way, anticlockwise loop Loading requirements near Cookridge Street NGT stop for frontages on western side of the road

NORTH LINE				
No.	From/To	NGT Stops	Description	Key Issues/Further consideration
N1.1	Cookridge Street, Off-line (through Millennium Square), Cookridge Street, Off-line (parallel to Woodhouse Lane), and Woodhouse Lane to Clarendon Road.	Civic, University	Route from Cookridge Street, through (shared space with pedestrians) Millennium Square on to an NGT only section on Cookridge Street to the Claypit Lane junction. Servicing and access for general traffic is maintained via the existing loop from Portland Crescent to Cookridge Street through a general traffic lane alongside NGT. The Civic Stop has been situated at the side of the highway to better integrate with the Civic Quarter and LGI access routes. The bridge over the Inner Ring Road is to be widened to accommodate an NGT only inbound lane to improve runtime and reliability. Blackman Lane is converted to one-way northbound as part of local area NGT traffic management proposals. These include widening of Blenheim Walk (currently one-way southbound) to accommodate a new northbound traffic lane. The proposals would remove through traffic from Woodhouse Lane between Blackman Lane and St Mark's Road reducing traffic flows past the University. This would then allow the 4 lane width (3 traffic plus parking bays) to be reduced to a lane in each direction with footway widening. New plaza to be created outside of Leeds University	<ul style="list-style-type: none"> Shared space recommended measures in Millennium Square are in line with LCC emerging policy but need to work through the issues with access groups Shared space (NGT only except servicing access) along Cookridge Street discounted on access grounds but provides a much better urban design solution; confirm whether we can resolve the access issues for this alternative Condition of Inner Ring Road bridge and adjacent retaining walls is unknown; current assumption is they are in a satisfactory condition. If not there may be costs for remedial works to the IRR structures or will be repaired prior to NGT construction. Alternative inbound bus lane (instead of outbound) between St Mark's Road and Clarendon Road considered but discounted; useful to model to help justification Refine options for turn back route or loop for south line services when full loop via Eastgate not operational.

No.	From/To	NGT Stops	Description	Key Issues/Further consideration
N2.1	Woodhouse Lane and Headingley Lane. [Direct crossing at Victoria Road junction]	Woodhouse, Hyde Park Corner	Inbound there would be an NGT only lane between Rampart Road and Clarendon Road which may route around the back of existing trees on Woodhouse Moor. This is to allow existing/ new trees to be on the same line (not set back) as the rest of the boulevard to maintain it's integrity. The turning restrictions at Hyde Park Corner junction are to maintain capacity (same as Supertram) to reduce the need for widening of Headingley Lane for a bus lane and to improve pedestrian crossings. Alternative right turn provision is available via Rampart Road or Cliff Road. An NGT lane is provided outbound to the north of Victoria Road with bus stops relocated. Inbound NGT is running with other traffic between Richmond Road and Hyde Park Corner junction. Demolition of commercial properties on southern side of Headingley Hill at the junction with Victoria Road.	<ul style="list-style-type: none"> Extent of (inbound) tree loss has not been determined Refuse vehicle access and egress on Regents Park Avenue to be maintained Proposals to overcome the level & threshold issues at Victoria Road have been designed require further consideration Replacement parking for Victoria Road houses to be considered Options to minimise the impact of NGT on Woodhouse Moor are currently under investigation.
N2.2	Headingley Lane (3 Lane Option)		NGT only lane outbound between Victoria Road and Buckingham Road requires the relocation of conventional bus stops. NGT with other buses outbound from Buckingham Road to Richmond Road. NGT with general traffic inbound. The alignment requires small areas of land take but has below desirable standard lane widths. New signal controlled junction and separate ped crossing where the NGT alignment goes off-street at the top of Headingley Hill. Richmond Road to be stopped up	<ul style="list-style-type: none"> Need to confirm acceptability of bus stop relocation/ rationalisation in terms of capacity, local impact & accessibility Investigate road widening to provide wider lanes to mitigate loss of cycle lanes. Conservation area consent issues New development proposals on Former Leeds Girl's School site to be determined and reviewed
N3.1	Off-line (parallel to Headingley Lane 3 Lane Option and Otley Road)	Headingley Hill, Headingley Centre	Off highway section through green space by-passing Headingley Centre. The NGT is assumed to be non-guided and requires earthworks and retaining structures, particularly in the vicinity of Headingley Hall. Scope for urban design planting/ screening. Cycle track (for pedestrians & cyclists) provided along this section of route to enhance facilities on this corridor.	<ul style="list-style-type: none"> Vehicular and pedestrian NGT crossing on access to Headingley Castle Blind & Deaf Centre will require risk assessment and consultation with relevant groups. Guidance less attractive due to visual appearance (overlook & visual intrusion issues), number and spacing of crossings requiring the NGT vehicle to come out of guidance Enforcement issues if NGT is not guided: consider CCTV, physical measures etc. Environmental & ecological impact and mitigation to be developed Replacement parking in the vicinity of Shire Oak Street and St Columbus Church under investigation Urban design and other measures on Wood Lane to enhance & reinforce the link between Otley Road & Headingley Centre Stop
N3.2	Alma Road and Otley Road (Junction with Shaw Lane and St Anne's Road).		NGT passes behind the Arndale Centre (leaving sufficient space for developer proposals) and rejoins the highway at Alma Road. It then continues onto Otley Road (with other traffic) and (outbound) passes through the Shaw Lane junction without stopping by tagging onto the end of the Otley Road northbound signal stage. It then continues with other traffic in a single northbound lane along Otley Road. Inbound NGT is on the offside on the approach to the Shaw Lane junction, which it will cross and pass through the Alma Road junction again without stopping.	<ul style="list-style-type: none"> All alternative junction layouts of the Shaw Lane junctions operated in excess of their capacity; the layout shown is feasible & minimises dis-benefits to buses and other vehicles Land acquisition and property demolition as per Supertram proposals Alternative layouts with an NGT stop on the Otley Road frontage were developed but required much more extensive property acquisition, and adversely affected the performance of the Shaw Lane junction Significant volume of tree loss includes some with Tree Preservation Orders on the alignment to the rear of the Arndale Centre.
N4.1	Otley Road (St Chads)	St Chad's	NGT inbound is switched from the nearside to the offside at pre-signals to allow a controlled movement by creating a gap in the inbound general traffic flow. The St Chad's Drive/ Burton Crescent junction is retained as a priority arrangement as signal control would unacceptably disrupt the Otley Road (NGT) flow. To the north of St Chad's Drive widening into the adjacent grassed verge is required to accommodate a bus lane in each direction (note no land take beyond the highway boundary); this is likely to damage/ remove several trees on the western side. Adopting sub standard (below desirable) lane widths and negating the pedestrian island (at Weetwood Lane) reduces the carriageway footprint but would still affect a large number of trees. Weetwood Lane is to be stopped up to create a plaza area in which to site the NGT stop. An alternative signalised junction would be created at St Chad's Road for traffic reassigned from the Weetwood Lane/ Otley Road junction. NGT outbound needs to run with other traffic adjacent to the War Memorial due to width constraints.	<ul style="list-style-type: none"> Servicing & access to shop frontages on Otley Road between Weetwood Lane and Cottage Road will be considered further Potential impact on the setting of the War Memorial to be considered further
N4.2	Otley Road	Churchwood Avenue	A bus lane is provided inbound along this section. The Churchwood Avenue/ Glen Road junction with Otley Road is retained as priority controlled as testing of a signal controlled alternative showed significant disruption of flows along Otley Road. To the north of Churchwood Avenue the outbound bus lane is terminated at a bus gate to minimise the outbound to a single lane for all traffic. This is to reduce width and reduce damage to the trees on the southern side of the highway. Inbound the existing bus lane is retained by the Thornbury Avenue junction.	<ul style="list-style-type: none"> Consider further layout options to minimise tree loss between Churchwood Avenue & Ancaster Road Churchwood Avenue stop likely to be located adjacent to Churchwood Avenue to minimise walking distance to the University Campus Potential enforcement issues due to possible implementation of controlled parking zones in the surrounding areas (not part of the NGT scheme)

No.	From/To	NGT Stops	Description	Key Issues/Further consideration
N5.1	Otley Road (with centre line running through outer ring road roundabout)	West Park, Lawnswood	A nearside bus lane is provided on both sides of the carriageway to the south of Spen Road but narrow (below desirable) widths are required to avoid third party land take. Inbound NGT is able to by-pass the Spen Road junction at which the West Park stop is located. Kepstorn Road is to be stopped up to simplify the Spen Road junction and create a workable solution; alternative access is available. Land take is required between Spen Road and Weetwood Road (on the eastern side of the highway) to accommodate a 4 lane arrangement with an outbound NGT Lane. NGT inbound switches from the offside to the nearside in the vicinity of Oxley Hall. This is to allow NGT centre running through the Outer Ring Road roundabout and this continues to the north on the approach to the Bodington P&R.	<ul style="list-style-type: none"> Significant loss of trees from central reserve (lower quality than those at the side of the road) on the approach to the ORR roundabout to be quantified. Design changes being explored to minimise tree loss. Review of access and loading to frontages on Otley Road that would be affected by West Park NGT stop Review of layout of Kepstorn Road/Otley Road junction to maintain access, so at least one direction for Kepstorn Road
N5.2	Bodington Park and Ride Site	Bodington Park & Ride	Indicative layout developed assuming central running on Otley Road. Requires earthworks to P&R site. Indicative layout (assuming no SUDS) is for around 800 parking spaces on an at grade lower level surface car park. The NGT stop (and feeder bus/ interchange if required) would be higher up at Otley Road level; possible drop off area, disabled parking & cycle facilities in undercroft beneath stop platform structure (at higher level) under consideration.	<ul style="list-style-type: none"> Confirm requirement for SUDS - check geology & infiltration rates Visual intrusion of site and urban design aspects need to be reviewed Check requirements for relocated sports facilities for University
N6.1	Otley Road, Old Otley Road, Holddale Approach and Holt Crescent.	Wise Owl, Hospital Lane, Tinshill Drive, Holt Park	NGT on highway with no carriageway widening except for bus lay-bys. Terminates at Holt Park District Centre and loops around the car park.	

SOUTH LINE

No.	From/To	NGT Stops	Description	Key Issues/Further consideration
S1.1	Bridge End, Hunslet Road, Leeds Bridge.		The NGT alignment crosses Leeds Bridge and the loop road. NGT runs with traffic except for southbound NGT lane on Lower Briggate and NGT lane inbound across Leeds Bridge upto pre signal on Lower Briggate.	<ul style="list-style-type: none"> OLE clearance under the railway (Lower Briggate) inadequate; may need to place route height restriction & place live parts centrally under the bridge to maximise path distance to pedestrians. Further investigation underway. The 3 lane arrangement on Leeds Bridge does not encroach upon the river span footway widths; however, the carrying capacity of the river span carriageway has yet to be proven and the design may need to revert to 2 lanes Kerb buildout outside of Adelphi PH removed
S1.2	Off-line (parallel to Waterloo Street and Bowman Lane), Bowman Lane.	Brewery Wharf	NGT only segregated (guided or unguided) alignment to run adjacent to Bowman Lane on Tetley Brewery land already acquired. Proposals may therefore affect the setting of a listed building.	<ul style="list-style-type: none"> Opportunity to co-ordinate with Tetley site redevelopment and run through the site has not been explored but opportunity remains. Layout options between Crown Point Road and Black Bull Street need to be confirmed. Alternative options are being explored.
S1.3	Off-line (parallel to Black Bull Street and Chadwick Street) and Chadwick Street	Crown Point	The alignment leaves the highway requiring the partial demolition and reconstruction of a historic listed wall & requires embankment/ retaining structures on its eastern side to overcome level differences. It then enters a shared space area with pedestrians and servicing traffic in a plaza area containing the NGT stop. Chadwick Street is restricted to southbound general traffic only with northbound (inbound) being for NGT only. A development is planned to the immediate west of NGT.	<ul style="list-style-type: none"> NGT inbound guidance would create severance issues and is not required or desirable. A better solution would be to have a 50mm up stand kerb between NGT (raised) and the southbound traffic lane. This would also allow passing of broken down vehicles & operational flexibility; to be explored further.
S1.4	Off-line (parallel to Chadwick Street South, traversing Carlisle Road, Sayner Lane).		NGT passes through the redevelopment area and past Museum and via a new right of way to the South Accommodation Road junction. Sayner Lane is to be stopped up to minimise traffic interface with NGT; good alternative routes are available. New junction layout of Carlisle Road and Chadwick Street.	<ul style="list-style-type: none"> Stop in this vicinity to be considered if redevelopment occurs in the vicinity.
S2.1	Off-line (parallel to Hunslet Road, crossing Hunslet Road at Forster Street)		After crossing South Accommodation Road the NGT alignment runs between the highway & footway in front of buildings. In addition it is constrained between the highway and an IRR7 bridge pier. This section may need to be guided to minimise widths. Pym Street is to be stopped up to remove the need for a signalised junction and improve safety; an alternative access route and turning facilities are available.	<ul style="list-style-type: none"> The adequacy of clearances at the IRR7 Bridge has not been confirmed; although it is understood that allowance was made for Supertram Once traffic flow data is available following opening of the IRR7 and ELLR we should review whether existing carriageway space can be reallocated to NGT; this would allow a landscape buffer strip & remove the potential need for guidance. Operational requirements of premises in the vicinity of Pym Street should be investigated

No.	From/To	NGT Stops	Description	Key Issues/Further consideration
S2/3/ ALT.1	Off-line (parallel to Hunslet Road, traversing Joseph Street), Whitfield Way, Whitfield Square (traversing Whitfield Avenue) off-line, Church Street, Balm Road, off-line (parallel to railway, traversing Pepper Road).	Joseph Street, Penny Hill, Flax Mill Lane, Pepper Road	<p>NGT crosses Hunslet Road and a stop is located in the green verge to the south of the carriageway. Epworth Place is to be closed with alternative access and parking provision provided for St Joseph's School. NGT briefly shares a short section of alignment with local access traffic before entering a shared surface area with pedestrians through Whitfield Square. It continues into Hunslet District Centre and a stop is located on a new plaza area adjacent to the Penny Hill Shopping Centre; giving a major urban design opportunity. NGT then joins Church Street to run with general traffic through the Balm Road junction, over Balm Road Bridge which is to be reconstructed with greater width and clearance to the railway, requiring substantial approach structures. There are threshold and interface level issues as a result requiring extensive highway regrading.</p> <p>NGT is to leave the highway immediately south of Balm Road Bridge and run alongside or through the sidings. A potential depot site is at the railway sidings. The alignment then ramps up to cross Pepper Road at grade and a new stop within a plaza area is located to the immediate east of the highway.</p>	<ul style="list-style-type: none"> The Balm Road Bridge (constructed 1902) does not currently have a weight restriction but may have fatigue loading (residual life) issues. The crest curve is below standards giving poor forward visibility, but is adequate for introducing a signal controlled junction as intended for NGT. Options are currently under investigation at Balm Road Bridge as follows:- <ul style="list-style-type: none"> Strengthening the existing bridge; Reconstruction (single span) following the same alignment of the existing bridge; and New NGT only bridge to the immediate east. The railway sidings are currently leased to a freight operator In the recent past, Hunslet pedestrianised area held annual events (but not recently) Desire to avoid the sports pitches adjacent to the railway sidings
S3.2/ S4	Off-line (parallel to railway), M621 Junc.7, and Stourton Park & Ride Site.		<p>From Pepper Road, NGT ramps down into the railway cutting with retaining structures on either side, before turning south to pass beneath Westbury Place North via a new underpass. It would then cross the M621 junction via a two lane segregated NGT only alignment through the existing M621 grade separated junction. NGT would then arrive at the Stourton P&R site. The M621 junction 7 would require additional signal control facilities and changes to the kerblines.</p>	<ul style="list-style-type: none"> A vehicle containment barrier will be required adjacent to the railway (especially near Wakefield Road) to provide errant vehicle protection to the railway. A vehicle containment barrier and headlight screening will be required through the M621 underpass The Highways Agency's current stance is that they require 3 circulatory lanes (rather than the 2 current proposals provide) and this should be reviewed once new (post IRR7) traffic data becomes available. A 30 mph speed restriction on the M621 circulatory with a one step relaxation from DMRB standards is likely to be required The OLE contact wire profile between Pepper Road and the P&R site will constrain running speeds and OLE design. Note that the M621 underpass is superelevated with raked beams, the lowest of which is at the southern edge. Initial (desk study) conclusions are that ground water infiltration at Stourton is likely to be inadequate therefore SUDS attenuation may not be appropriate; currently assuming storm cell attenuation beneath the P&R. Consider P&R access to Middleton Ring Road with through access restriction.

EAST LINE				
No.	From/To	NGT Stops	Description	Key Issues/Further consideration
E1.1	York Street.		Travels past Leeds bus station and provides good interchange opportunities. On street provision mixed with high volume of bus services.	Kerbside apce is at a premenium and further work is required to satisfy demands for buses and other users.
E1.2	York Street, Marsh Lane	Quarry Hill	Running mixed with traffic through the Quarry Hill area, negotiating the complex Marsh Lane signal controlled junction. The junction benefits from LCC's SPRUCE junction optimising software which currently attempts to minimise delays for buses and traffic whilst providing priority for selected bus services. The route travels beneath the A64(M) flyover, which creates clearance issues between the OHLE/Bridge Soffit/Pedestrians.	•A64(M) Flyover clearance issues to be fully determined.
E1.3	Burmantofts Street, Beckett Street, Off-line (parallel to Beckett Street).	Burmantofts Street	The outbound NGT leaves the Burmantofts carriageway and traverses a highway verge (to the immediate north of the carriageway) via a new segregated NGT only alignment to the Nippet Lane junction. Inbound NGT will utilise the existing bus lane. Beyond Nippet Lane NGT benefits from segregated off-street provision (inbound and outbound) avoiding the congested roads and junctions. Burmantofts Street (between the A64 and Nippet Lane) is a mix of residential properties to the southeast and open green space to the northwest. Beyond Nippet Lane the land use is predominantly green open space with mixed developments set back on the northside. A school is located to the northeast of the Nippet Lane junction. Burmantofts Street and Beckett Street are congested during peak periods, but existing buses benefit from bus priority features.	<ul style="list-style-type: none"> An alternative layout between York Road and Nippet Lane with NGT segregated to the south of a realigned Burmantofts Street has been drawn up and it's merits still need to be considered. However, this option requires the closure of Rigton Approach Need to determine the strategic provision of open space in this area. Also need to consider amenity value of residual open space.
E1.4	Off-line (parallel to Beckett Street) including a turn back facility which minimises tree loss.	St James's Hospital	Segregated off-street provision through green open space but requires the demolition of a public house. Incorporates a turn back facility with upto three platforms to provide operational flexibility and alternative stops in an emergency. Includes a plaza area on the Beckett Street frontage to better integrate with St James's Hospital and improve passive security and prominence. The option maintains the greatest number of trees in this location.	<ul style="list-style-type: none"> Issues associated with the demolition of the Fountain Inn Public House. Need to determine the strategic provision of open space in this area. Also need to consider amenity value of residual open space.