

NET PHASE 2 – CHILWELL VIA THE QMC AND BEESTON ALIGNMENT DEVELOPMENT.

General comments

The text below summarises the main environmental impacts for the scheme as identified in the Environmental Statement (ES). In general terms, the ES is required to assess the worst case rather than the most likely scenario.

Environmental Consultants ERM has undertaken the townscape and visual impact assessment following the standard Landscape Institute/ Countryside Agency method. This tends to overstate the townscape impacts because, for example, it has to be assumed that buildings that have to be demolished as part of the scheme will not be replaced, even when there is space to do so, unless the building replacement is part of the scheme. In practice, new development would be expected to take place. In general, sensitive landscaping proposals identified in the Urban Design Guide will be established to ensure a best fit for the tramway into the varied local environments along the routes.

The impacts identified in the text for townscape and visual impact below are those 15 years after the commencement of the operation and following, for example, the establishment of planting, settlement of earthworks and weathering of structures.

During the construction phase, there will be an impact on the setting, character and appearance of a number of listed buildings and conservation areas. However, a range of mitigation measures has been developed in the draft Code of Construction Practice (CoCP) which will minimise impacts on cultural heritage during the construction phase. There will also be construction noise impacts in a number of locations, in particular during enabling works and where demolitions are required. These will however mostly be of a short duration.

It will be important to maintain appropriate electromagnetic capability along the route, and particularly at the QMC and University of Nottingham.

If NET Phase 2 does come into operation, parking will be carefully monitored on residential roads close to tram stops and preventative action, such as residents parking schemes, will be introduced where appropriate and sought by residents.

THE ROUTE ALIGNMENT

1. Meadows Way (Bridge Ward).

1.1 The alignment diverges from the Clifton route at the Sheriffs Way/ Meadows Way junction and operates along Meadows Way with other vehicles as far as the NG2 site. A series of parking bays will replace on-street parking. Cyclists will remain on-street with other vehicles due to the low volumes of traffic although off-highway provision will be maintained adjacent to Wilford Road and extended in the vicinity of Meadows North tram stop. A number of trees will be lost along Meadows Way resulting in a slight to moderate adverse visual impact for some receptors, but substantial planting of replacement trees is proposed.

1.2 The Meadows North tram stop is located adjacent to Beardsley Gardens, ensuring that the tram remains accessible to residents on Meadows Way. It is proposed to mostly retain and extend or replace existing fences which separate

Meadows Way from Waterway Street, Wilford Road and Queens Drive. The tramway will run past Meadows Police Station on Meadows Way and some land will be required from the front on the station to alter the footway and provide a police parking bay as a replacement for the existing on-street police parking facilities.

- 1.3 Two metre high garden fencing (subject to local agreement) will minimise noise impacts in the vicinity of Kingslake Place, Gritley Mews and Saffron Gardens. However, moderately significant noise increases would still be expected at first floor level of 20 properties in Gritley Mews and Saffron Gardens, although permanent impacts will be below sleep disturbance level and below statutory levels for insulation in accordance with the Noise Insulation Regulations.

2. NG2 site (Bridge Ward).

- 2.1 The tramway will cross over Queens Drive at the entrance to ng2 and operate through the site. Vegetation will need to be removed at the junction with a moderate adverse impact on townscape although additional planting elsewhere on Meadows Way together with a new fence will be used to reinforce the natural barrier between Queens Road and Meadows Way. Consultants Mott MacDonald advise that the addition of the tram will result in some additional queuing in the morning peak period at the junction. The flow of traffic along Queens Drive will therefore need to be carefully managed by the Highway Authority.

- 2.2 Discussions have been held with the Developer to minimise impacts on adjacent developments within NG2. The tram stop is central to the site allowing it to serve the developing area. A small number of offices within the site are predicted to experience moderately significant noise increases. Permanent noise impacts will however be below statutory levels for insulation in accordance with the Noise Insulation Regulations. The loss of recent planting in the central reserve within NG2 to accommodate the tram will result in a moderate adverse visual impact.

3. Kings Meadow Nature Reserve and Lenton Lane Bridge (Bridge, Dunkirk and Lenton Wards).

- 3.1 Leaving the NG2 site, the alignment will cross an open area and the Midland Main Line before rejoining the highway on Lenton Lane.

- 3.2 The Chilwell via QMC and Beeston report in June 2004 approved a route alignment which impacted on the Kings Meadow Nature Reserve (which is leased by the City Council to Nottinghamshire Wildlife Trust) and crossed the Midland Main Line on the existing Lenton Lane road bridge.

- 3.3. Following further work, a revised alignment is now proposed with a new tram bridge constructed to the east of the existing bridge which links back into Lenton Lane adjacent to Easter Park. This has a number of advantages including: avoiding the Kings Meadow Nature Reserve (although there will be significant impacts on the lower quality Wilford Power Station SINC), a segregated alignment, and a reduced cost, principally through avoiding expensive utility diversions.

- 3.4 The NET alignment affects parts of the Wilford Power Station SINC characterised by ubiquitous and species poor vegetation types, which contrast with more species rich vegetation types elsewhere in the SINC. ERM consider that the

permanent loss will not be significant in view of the small proportion of the SINC lost (approximately 10%) and the type of habitat to be lost.

- 3.5 Significant, albeit temporary impacts are anticipated during the construction phase on the SINC although a higher quality of habitat and vegetation type will be provided compared to that lost where parts of the SINC are to be reinstated following the construction works. It is also proposed to improve the nature conservation value of an area to the east of the nature reserve. It is considered that, taken as a whole, this complies with the Councils' new duties under s40 of the Natural Environment and Rural Communities Act 2006 to have regards to the purposes of conserving biodiversity in accordance with the Rio Convention. Discussions have been held with Nottinghamshire Wildlife Trust about extending their existing Kings Meadow lease to include the improved area. The Trust have some concerns about the proposal and further discussions will be held.
- 3.6 There will be a loss of public open space in the area, and a small piece of open space land within the SINC will need to be acquired compulsorily as it has not been possible to identify the existing owner. Public open space that is compulsorily acquired should normally be replaced by an area of land of equal size and quality which is in close proximity to the area lost. A replacement area of public open space has been identified within land currently included in the Kings Meadow lease to the Wildlife Trust, and it is proposed to introduce a stile to provide public access into an area currently inaccessible to the public. The proposal has been discussed with the Trust and concurrently with the main application, it will be necessary to apply for an Exchange Land certificate from the Secretary of State for Communities and Local Government that the Exchange Land is appropriate.
- 3.7 ERM have advised that the changes in the Kings Meadow area will result in a moderate adverse impact on the landscape and moderate to significant adverse impacts on visual amenity.
- 3.8 The revised bridge alignment crosses directly above the switch and crossings (S&C) at Lenton south junction where to address Network Rail's concerns, sufficient clearance to all existing tracks is provided to allow future line upgrades and maintenance of the S&C elements. The design detail has been developed to Approval in Principle stage and formal acceptance sought from Network Rail. The tram bridge will be a single span half through structure and construction will involve embankments leading up to the bridge with a retaining wall on the east side.
- 3.9 Some land will be required from the car parking area of Easter Park for the bridge and associated works. To the south, land is required from the parking area of the Games Workshop site for the realignment of Lenton Lane.

4. Lenton Lane/Gregory Street (Dunkirk and Lenton Ward).

- 4.1 The tram would operate on-street along Lenton Lane and Gregory Street with other vehicles. The existing bridge over Beeston Canal is not suitable for tram operation and a replacement of the central section or whole structure would be required. Land opposite Claytons Drive will be required during the construction phase to assist with the bridge works.

- 4.2 The Gregory Street tram stop will be convenient for the surrounding large housing area. An 'island' tramstop is proposed to enable residents to access existing driveways on the north side of the road.
- 4.3 Streetscape improvements will result in a slight to moderate positive impact on townscape and a moderate positive visual impact.
- 4.4 There will be some small land take from properties and businesses on Lenton Lane and Gregory Street, including the Timber Yard, the Trent Vinyard Church, the Red Cow Public House and the British Red Cross Building, to accommodate the revised highway alignment and tramstop. An electricity substation is proposed adjacent to Lenton Lane adjacent to an existing substation.
- 5. White Hart Junction (Dunkirk and Lenton Ward).**
- 5.1 The tramway will pass through the White Hart junction, and for a short distance along Abbey Street before turning into an existing QMC staff car park to the north.
- 5.2 The junction is very busy during peak times and the land currently available at the junction and its approaches is restricted, particularly by the proximity of Lenton Priory Park. There are currently no pedestrian crossings and it has long been a policy and safety enhancement aim to improve the situation for pedestrians. Having considered a number of design options and reviewed them with Her Majesty's Railway Inspectorate (HMRI) and the Highway Authority, it is concluded that to accommodate the tram, road vehicles, pedestrians and cyclists safely, it would be necessary to widen Abbey Street on the approach to the junction. This can only be achieved by acquiring 8 buildings (commercial and residential properties) along Abbey Street and Gregory Street and acquiring small areas of land from the White Hart public house and adjacent former petrol station. A building from Deborah Services is also required. However, the proposals enable significant improvements to pedestrian crossing facilities at this busy junction.
- 5.3 The proposals do not directly impact on Lenton Priory Park, although a number of the trees adjacent to the highway in front of the Park will be lost.
- 5.4 The alignment passes through the Lenton Lane archaeological constraints area, which includes the remains of Lenton Priory, which is designated as a scheduled ancient monument (SAM). Although the alignment is outside the boundary of the SAM, remains may survive outside the protected area. The potential for finding archaeological remains is therefore assessed as high, and they may be of national significance.
- 5.5 Field investigations will take place at the detailed design stage in off-road areas, with a watching brief during groundworks focusing on areas where pre-construction investigations are impractical. Every effort will be made to find ways to preserve significant remains as structures in situ, and residual impacts will be significant if important remains have to be removed. However, in such instances the remains will be fully recorded and preserved elsewhere, in accordance with best practice.
- 5.6 There will be a permanent residual adverse impact on the setting of Lenton Priory as a result of the proposals, although mitigation measures, including high quality designs, will seek to minimise impacts. The listed boundary wall at Priory Church will be protected during construction to prevent damage to this important feature.

- 5.7 ERM have advised that the proposals will result in a moderate to substantial adverse impact on the townscape and a substantial adverse visual impact.
- 6. QMC viaduct** (Dunkirk and Lenton, Wollaton East and Lenton Abbey Wards).
- 6.1 A major new viaduct will carry the tram alignment from the QMC car park accessed from Abbey Street, across the River Leen, through the QMC site and across the A52 Clifton Boulevard before descending onto Science Road within the University Grounds.
- 6.2 The main QMC building will be served by a new tram stop at a high level on the south side, providing a direct and convenient access into the hospital for employees and patients through a new entrance. Direct access is also proposed into the new treatment centre (TC) currently under construction to the south of the tram route which will have a high volume of Out Patient and Day Surgery activity. Discussions have been held with the QMC and the TC developer, Nations Healthcare. Discussions are on-going with the QMC concerning permanent and temporary construction land impacts through their site.
- 6.3 A bowstring bridge is proposed to enable the tramway to pass over Clifton Boulevard and a footway is proposed across Clifton Boulevard between the QMC tram stop and Science Road.
- 6.4 To the west of Clifton Boulevard, the viaduct will require the acquisition of buildings housing the Merrivale Nursery School and the University of Nottingham Play Centre. Separate to the NET Project, proposals have been developed to relocate the Merrivale School in 2008 along with two other nurseries to a new site in Radford. The vacated area will be used as a temporary construction site and in the longer term will provide replacement car parking to mitigate losses within the University campus as a result of the proposals.
- 6.5 The tramway structure will descend to ground level approximately half way along Science Road. The tramway will be visible from University buildings and residential properties on Highfield Road. However, gardens on Highfield Road have mature trees along their boundaries that will create a filtered screen to the viaduct and tramway. Tree planting at the rear of the new car parking will provide further screening for some properties at the eastern end.
- 6.6 To minimise disruption to traffic on the A52 Clifton Boulevard, it is likely that short periods of night time work will be required to build the bowstring bridge and this will have a short term significant impact on adjacent receptors. A noise barrier will be located along the edge of the structure adjacent to Highfield Road to mitigate potential operational noise impacts.
- 6.7 Overall, the new structure will affect the character of the area and with the exception of positive impact on Clifton Boulevard, is expected to have a moderate adverse impact on the townscape. Visual impacts are anticipated to be moderately adverse through the QMC site, but substantial adverse on Highfield Road and in the vicinity of the University buildings on Science Road.
- 7. University of Nottingham** (Dunkirk and Lenton, Wollaton East and Lenton Abbey Wards)

- 7.1 The City Council Executive Board and County Council approved in principle the tram alignment for the Chilwell route in 2004, but decided to keep open two alternative routes through the University's campus during the TWA process in order to allow a more detailed consideration of the options. However, the delay in receiving Programme Entry Approval has enabled the necessary work to be undertaken to identify the preferred option.
- 7.2 Through the University's campus it is proposed to operate along Science Road and then to the rear of the Arts Centre and Recital Hall before joining University Boulevard at its existing junction with East Drive. This will require the acquisition of land from 22 residential properties primarily situated on Greenfield Street and the loss of approximately 40 car parking spaces to the rear of the Arts Centre and Recital Hall.
- 7.3 The alternative (now recommended to be rejected) route alignment option for this area would have involved running the tramway along East Drive in front of the Arts Centre and Recital Hall. In further considering the two options a number of factors were looked at. These included noise and vibration, operation and maintenance of the tramway, tram geometry, highway and traffic, land uses (including townscape, amenity and open space), costs, car parking, development potential, feedback from public consultation, tram stop location and safety. Key determining factors were as follows:
- 7.4 *Noise and vibration.* Both route options would pass close to a number of teaching, research and performing venues within the University campus, all of which are very sensitive to noise and vibration. A detailed technical consideration concluded that the potential noise and vibration impacts for both options would be broadly similar and could be successfully mitigated mainly by using a specialist trackform, although a noise barrier would also be provided to the rear of the Arts Centre for the proposed option. However, the proposed route is further away (approximately 20 metres) from the recently constructed Orchestral Rehearsal Space (on the corner of Science Road and East Drive) than the other route option (approximately 5 metres) and is therefore likely to avoid potential impacts on the new building. Noise impacts on Greenfield Street are not anticipated.
- 7.5 *Track maintenance and system reliability .* The alternative route would have had a complicated track arrangement, incorporating tight track radii at the corner of Science Road and East Drive. Utilising specialist trackform required for noise mitigation in combination with such a complicated track arrangement would have increased the risk of significant long term maintenance issues, resulting in the need for more intensive and frequent track maintenance with increased potential for disruption to tram services and local traffic. This would have included the risk of rail corrugation occurring, which has been a problem on other tram systems including Manchester Metro link and results in increased noise and vibration and poor ride quality, as rail corrugation produces an uneven rail surface. Furthermore, the possible mitigation measures, including rail grinding, more frequent rail replacement and speed restrictions would have been undesirable and disruptive to tram operations, other road users and frontage occupiers and would have been likely to have significant maintenance and cost implications affecting the long term viability of the system. The proposed route would have a simpler track arrangement and such risks would be significantly reduced as a consequence.
- 7.6 *Open Space.* The proposed route would avoid impacting on high quality open space within Highfields Park, a Grade II Registered Historic Park, which is

extensively used by the general public and has an important amenity value in the local area. Highfields Park has a special and unique setting within the University's grounds and is surrounded by high quality buildings. It is considered important to maintain the completeness and integrity of the Highfields Park in its unique setting for the wider public to enjoy.

7.7 *Local impacts.* Although the proposed route would result in the reduction in size of rear gardens to 21 residential properties, some of which are owned by the University and some by private landlords, the likely impact on those properties has been reduced by moving the route approximately 5 metres closer to the Arts Centre and Recital Hall than the route which formed the basis of public consultation and which gave rise to objections from some residents. Although less than previously expected, there would be some permanent loss of amenity for the affected parties and a moderate adverse visual impact. However, usable gardens would remain and the existing boundary wall along the back of the properties on Greenfield Street would be relocated or replaced by a new boundary wall with adjacent tree planting (some of which could be in the rear gardens of affected properties (space permitting) by agreement with the property owners(s)) and would provide visual screening. Only the tops of passing trams and associated infrastructure would be seen from some of the ground floor rooms of the affected properties. The proposed route would also result in the loss of part of the ornamental garden and pond next to the Arts Centre, to which the public have very restricted access, and there would be some tree loss at the East Drive/University Boulevard junction which can be mitigated by new planting.

7.8 Although the route to the rear of the Arts Centre is marginally more expensive, overall it was considered essential to provide a relatively maintenance free section of tramway which does not undermine the reliability of the route, a fundamental requirement for successful tram operation. Given the open space benefits together with reduced impacts on gardens and the partial mitigation that can be provided, it is strongly recommended that the route to the rear of the Arts Centre should be adopted.

8. Highfields Leisure Trust.

8.1 The alignment impacts on land which is within the jurisdiction of the Highfields Leisure Trust, and will require release from Trust control. The affected land includes land to the rear of the Arts Centre, an area between University Boulevard and Tottle Brook in front of Highfields Science Park and a small part of the Tennis Centre and Highfields Sports Club.

9. University Boulevard (Dunkirk and Lenton, Wollaton East and Lenton Abbey Wards)

9.1 From the University, the tramway will run alongside University Boulevard to its junction with Queens Road, passing Highfields Science Park, Nottingham Tennis Centre, Highfields Sports Club and University Sports Pitches. For most of this section it will run to the south, of the existing cycleway and footway which will be retained.

9.2 *Landscape and visual impacts.* The Boulevard is an attractive tree lined avenue, consisting of mainly lime and beech trees. It is an important feature in the Nottingham landscape. A detailed survey has been undertaken to assess the

quality of all the trees along the Boulevard, which has been used in preparing the tram alignment, which has sought to minimise impacts on tree loss.

- 9.3 At some locations, the loss of mature trees is unavoidable, in particular at the entrance to the Highfields Sports Club, adjacent to the Hockey Pitch and at the western end of the Boulevard. In mitigation, additional trees will be planted elsewhere on the Boulevard and existing gaps will be planted with appropriate species to reinforce the tree lined character of the road.
- 9.4 Overall there will be a substantial or moderate adverse impact on the visual amenity and townscape along University Boulevard, but the relatively small impact on the avenue of trees and the proposed mitigation will ensure that the integrity of the Boulevard is maintained.
- 9.5 A section of the Tottle Brook watercourse will need to be bridged.
- 9.6 *Highfields Science Park and Tennis Centre.* The tram alignment will operate in the centre of the Boulevard for a short distance in front of the Highfields Science Park. A tram stop would be located in this section, providing good access to the University and surrounding facilities. The East Drive junction with University Boulevard will be modified and will include signalised pedestrian facilities (which currently do not exist) to give good passenger accessibility to the stop. The modifications to this junction will require some restriction on vehicle movements, with the right turn into and out of East Drive being diverted. The tram route will then operate along the northern edge of the Tennis Centre and there will be some minor land take from the car park although no car parking capacity will be lost. The proposed access arrangements will create a longer diversion for vehicles exiting the Tennis Centre wishing to travel eastbound to Nottingham, although access for vehicles travelling from the west will be improved.
- 9.7 In mid 2006 outline planning permission was granted for the development of the remainder of Highfields Science Park for office and research and development purposes. The development is considered a positive one for the area and would provide additional patronage for the NET system and discussions have taken place with the developer. Should the development proceed, the tramway and tram stop would be relocated to the north side of University Boulevard for the section in front of Highfields Park.
- 9.8 As part of the development, highway alterations are proposed and a new road would be provided to the south of Tottle Brook between the Science Park and the existing vehicular entrance to the Tennis Centre. All vehicles for Highfields Science Park and the Tennis Centre would enter at the Science Park and exit at the Tennis Centre, allowing direct exit onto University Boulevard both westbound and eastbound. The NET proposals would be modified to take account of the proposed changes, and the scope of the TWA application would allow for both layouts.
- 9.9 The showpiece courts at the Tennis Centre are used for a major international event and other tournaments throughout the year. Following a meeting with the Tennis Centre and Lawn Tennis Association, ERM advised that appropriate planting and temporary speed restrictions and noise barriers during major tournaments would ensure any impacts are minimised.
- 9.10 In view of the close proximity of adjacent tram stops, it is not proposed to provide a stop to serve the sports clubs. However the potential for a stop will be included

in the limits of deviation and the possibility of a tramstop provision would therefore remain available in the future.

- 9.11 *Highfields Sports Club.* To avoid direct impacts on a high quality pitch, the tram tracks have been moved further north at the Highfields Sports Club and a barrier will provide a screen to the tramway. A second access into the site for special events will be retained. A right turn entry into the Sports Club from the Beeston area is now proposed giving a high level of accessibility to the site.
- 9.12 *University Sports Field.* The tram alignment will require a strip of land from the University pitches to the south of University Boulevard. Although some relocation of pitches within the site would be required, all existing sports pitches (as understood to be currently laid out) can be retained. An empty residential property within the University playing fields will need to be demolished.
- 9.13 The adjacent tram stop would serve east Beeston and offer the potential for feeder bus services from local businesses, including Boots, and residential areas. An electricity substation will be located to the east of the University Boulevard tram stop, at a location where screening can be provided.

10. University Boulevard/Queens Road junction.

- 10.1 The tram alignment will operate through the existing University Boulevard/Queens Road junction and enter Lower Road. The existing roundabout will be replaced by a new signalised junction with improved pedestrian crossing facilities.
- 10.2 Consultants Mott MacDonald advise that the proposals will result in some additional queuing in the morning peak period, and the flow of traffic at the junction will need to be carefully managed by the Highway Authority. Vehicle access onto Lower Road from University Boulevard will be prohibited, with alternate access via Albert Road. Exiting from Lower Road will be restricted to northbound only with u-turns facilitated by the closely located Broadgate/Woodside Road roundabout.

11. Lower Road/ Fletcher Road and Neville Sadler Court (Beeston Central Ward).

- 11.1 The tram alignment will run along Lower Road and Fletcher Road, and requires the demolition and subsequent replacement of 21 (out of 48) retirement flats at Neville Sadler Court, as well as some ancillary facilities.
- 11.2 Lower Road and Fletcher Road are culs-de-sac and it is accepted that there will be a significant impact on these quiet streets and at Neville Sadler Court as a result of the tram. However, alternative routes have been considered and when reported to the County Council May 2002, Members approved the proposed route so as to achieve its transport, economic and environmental objectives.
- 11.3 At Neville Sadler Court, considerable discussions have been held since 2002 with the owners of the site, Housing 21, who are naturally concerned about disruption to residents, but recognise the benefits of a possible redevelopment to enhance facilities, and the potential for providing 'extra care' services as part of the redeveloped scheme. Extra care is a high priority for both Adult Social Care and Health and for Broxtowe Housing. The NET Promoters and Housing 21 are keen to re-provide at least the same number of flats as those lost to an enhanced standard, offering modern facilities and easier access to the buildings for people

living in them. The proposed flats and car parking will all be located to the north of the tramway, thereby keeping the tram away from the main circulation area of the complex. The redevelopment will require the acquisition of one adjacent residential property. Planning permission for the proposals will be sought through the TWA process. An area of land to the south of the tramway may be available for development.

- 11.4 A working group comprising Nottinghamshire County Council (including Adult Social Care and Health), the NET Project Office, Housing 21, and Broxtowe Borough Council (Housing and Planning), has been refining proposals for the redevelopment since 2002 with an aim to minimise disruption to residents. Two well-attended presentations and 'question and answer' sessions have been held for residents at the Court, to advise on the proposals and listen to their concerns. A further session will be held in late spring 2007 to engage them in the design process, and will be supplemented with a residents' site visit to another of Housing 21's 'extra care' schemes.
- 11.5 Lower Road and Fletcher Road will continue to be closed for through traffic (except cycles). Parking bays will be located along both roads for residents to use, although the exact provision will be determined at the detailed design stage and will seek to meet the needs of existing users. Residents parking schemes can be introduced if appropriate and sought by residents. The TWA Order will include a narrow strip of land from approximately 40 gardens to accommodate the bays but designs at the detailed stage will seek to minimise or remove impacts on such third party land. Cyclists will run on street alongside the tram. The light traffic and removal of on-street parking into parking bays will ensure a safe route is provided. An alternative cycle route via Salisbury Street will be considered by the County Council as Highway Authority.
- 11.6 Some tree planting is proposed between parking bays, but due to the current quiet nature of the area, there will be a moderate to substantial adverse impact on visual amenity and a slight to moderate adverse impact on townscape as a result of the proposals. Over 70 houses and flats on Lower Road / Neville Sadler Court are predicted in the ES to experience substantial noise impacts (with one property on Fletcher Road experiencing a moderate impact). Permanent noise impacts will however be below sleep disturbance levels and below statutory levels for insulation in accordance with the Noise Insulation Regulations.

12. Middle Street (Beeston Central Ward).

- 12.1 From Fletcher Road, the tramway will operate along Middle Street. A tramstop is proposed on Middle Street, which will provide good access to the system in east Beeston. There are a number of minor land takes along Middle Street in addition to the need to acquire one business (see paragraph 14.3 below).

13. Beeston town centre (Beeston West Ward).

- 13.1 In 2004, the City Council Executive Board and County Council approved a route alignment through Beeston town centre along Middle Street, Styring Street and Chilwell Road. This alignment enabled the tramway to operate through the heart of the town centre, providing a central tramstop with excellent bus interchange potential. It required the acquisition of 14 retail units in the Square shopping centre.

- 13.2 Discussions with Broxtowe Borough Council have continued since the 2004 Council resolutions. The Borough have recognised that the introduction of the tram into the town centre represents a real opportunity to change the shape of the town centre and, in partnership with the NET Promoters and Nottingham Regeneration Limited/Greater Nottingham Partnership, have commissioned a Masterplan for the town centre which is seeking to establish a strategic framework for its development. The draft Masterplan is approaching completion and will set down the overall approach for bringing forward the developments in the next few years. The Borough are proposing to adopt the Masterplan as an Area Action Plan (AAP). The draft will be published for consultation during 2007, and the AAP could be adopted by the end of 2008.
- 13.3 The Square shopping area has been central to the proposals included in the draft Masterplan, which identifies significant potential for the redevelopment of the block between Middle Street and the Square, including the multi-storey car park and bus station. Around the Square itself, there are a number of development options, and one of the major aspirations of the Masterplan is to see a much enhanced public area which is opened out to encompass views of the adjacent Conservation Area, including St John the Baptist Church. To achieve this would in itself require the removal of a number of shopping units, including Argos and Wilkinson.
- 13.4 Within the context of the Masterplan, the tram alignment and bus services would operate through this new open area and to maximise its usefulness as an area of public space, would need to operate close to the boundary of the churchyard on land currently occupied by Wilkinson. When compared to the alignment proposed in 2004, this would move the tramstop further south by approximately 50 metres, although its location would remain highly accessible for the town centre. Bus services would share the tram alignment and a series of bus stops would be provided on Styring Street, replacing the existing bus station and offering excellent interchange with the tram.
- 13.5 The above alignment could also be pursued without the full Masterplan proposals coming forward, subject to further consideration of access arrangements to the multi-storey car park, but would require the closure of the existing bus station (to be replaced by the on-street bus bays) as it conflicts with the tramstop, and the removal of a small part of the car park.
- 13.6 The timing of any development coming forward is however unclear. The proposed Area Action Plan would cover a period of 15 years and could mean that development proposals come forward at a time that is different to the NET Phase 2 timescale.
- 13.7 In view of the considerable uncertainties surrounding the future of the town centre, including confirmation of the Masterplan and the timing of any developments it is proposed to adopt relatively wide limits of deviation through this section, and to hold further discussions with the Borough Council, Henry Boot, who are the current leaseholders of the Square shopping centre, and the potentially affected parties. The NET Promoters recognise the importance of the Masterplan proposals to the future development of the town and wish to establish the tramway to achieve the best overall layout to take Beeston forward as a high quality district centre. ERM have recognised the positive contribution the proposals could make to the local streetscape, with enhanced public realm making the town centre more inviting. Securing wide limits will allow flexibility to respond to the emerging development proposals and to achieve the optimal

alignment and tram stop location, good bus accessibility and adequate replacement car parking facilities, and expanded commercial development through the Masterplan.

- 13.8 In ES terms, a substantial noise impact is predicted at the recently developed Manor Centre. Permanent noise impacts will however be below sleep disturbance levels and below levels for insulation in accordance with the Noise Insulation Regulations.

14. Beeston Town Centre Traffic Management.

- 14.1 Very detailed assessments have been undertaken on traffic flows for the main routes in the Beeston area, including the development of a traffic model for the town centre. This work has identified that a significant proportion of traffic is destined for areas beyond Beeston and is currently using the route through Chilwell Road and Beeston as an alternative to the main road route along A6005 Queens Road. It is proposed to introduce a package of traffic management measures, which include alterations on Queens Road at its junctions with Station Road and Meadow Lane to divert an appropriate level of traffic from the tram route especially in the morning and evening peak periods. Including layout improvements on the tram route, the proposal will allow trams to have a reliable journey time, with no significant impact on travel times for remaining traffic along the tram route. The junction alterations at Queen Road/Station Road will require small parcels of land from the adjacent residential and commercial properties.
- 14.2 A new Commercial Avenue link from Wollaton Road will become the main vehicle access to the Foster Avenue car park, Catholic Church, library and Roundhill School with the link from Chilwell Road closed to general traffic. This will require the acquisition of one business premises (currently vacant) and the widening of Commercial Avenue. The new access will alleviate traffic queues on Chilwell Road, particularly vehicles accessing the Foster Avenue car park which could affect the reliability of trams approaching the town centre, and will enable the pedestrianised centre of Beeston to be extended further west. Vehicle access will be allowed for the tram and bus service vehicles and access only. The Highway Authority do not consider that the provision of the link road, and its close proximity to traffic lights in the town centre, will significantly impact on traffic flow on Wollaton Road.
- 14.3 The Middle Street/Station Road junction is to be widened as part of the adjacent retail development and the assessments have included traffic generated by the proposed retail store. Further improvements to the junction, including localised widening using further land from the retail development (agreed through a section 106 agreement), will be required to enable priority for inbound trams. This would also require the acquisition of an additional business. Further west, and subject to the Beeston town centre Masterplan proposals, a retail unit and land from a second unit, and a parcel of land from the Fire Station which is not used for operational purposes will be acquired to provide sufficient land for the necessary modifications to the existing layout including a new signalised junction at Middle Street/Styring Street. Consultants Mott MacDonald have advised that some parking can be retained for the retail unit that can continue to operate.
- 14.4 Cycling provision has been made where space allows, and at all junctions in order to give cyclists an alternative to staying on the carriageway. The reduction of traffic in the area and the removal of on-street parking along the tram route will assist in minimising any traffic conflict with cyclists.

15. Chilwell Road (Beeston West and Chilwell East Wards).

- 15.1 The route alignment leaves Beeston town centre along Chilwell Road and continues to Castle (formerly Broxtowe) College.
- 15.2 In developing the alignment along Chilwell Road, the proposals seek to achieve a balanced outcome, and have been carefully designed to safely accommodate the tram, but also maintain and strengthen the long term prospects of the retail and commercial area to create an attractive environment which will encourage people to visit. The measures include;
- Major environmental improvements including high quality paving and tree and shrub planting. A new area of public space would be created, providing a focal point for Chilwell Road and improving the pedestrian environment.
 - Two tram stops serving the area, including a tram stop in the central area to encourage people to visit the retail area and other community facilities.
 - Two new off-street car parks, parking bays on side roads and loading bays for businesses. By relocating parking and loading away from the main carriageway, traffic will be helped to move freely and conflicts reduced between parking/loading and pedestrians and cyclists. The proposals will be a significant improvement on the existing limited on-street spaces. Beeston town centre Masterplan proposals which rationalise accesses off Chilwell Road and aim to reduce HGV movements will improve the local environment further.
 - The potential for a new commercial development area at Ellis Grove. The draft Masterplan proposes an extended redevelopment to the south of Chilwell Road.
- 15.3 To achieve the above proposals it is necessary to slew Chilwell Road between Imperial Road and Grove Avenue. As a result, the loss of property is unavoidable, but it is considered that this impact is necessary for NET Phase 2 and the benefits that will accrue from NET Phase 2 make a compelling case for the acquisition of these properties. The aim has been to maximise the retention of shop frontages while accommodating the parking/loading and tramstop. It will be necessary to acquire 15 buildings which currently house residential and business premises although the potential new commercial area could offset some of the loss of business premises. There will be some minor land impacts on other Chilwell Road properties.
- 15.4 One of the proposed new car parks is situated adjacent to the Methodist Church off Chilwell Road. Following discussions with the affected parties, it is proposed to acquire a residential property, to provide a suitable car park for use by shoppers, the Church, and visitors to nearby Doctors and pharmacies. The layout will be open and together with other measures, will ensure a safe and secure car park.
- 15.5 The construction phase will be particularly important for High Road/Chilwell Road, and great care will be taken to minimise disturbance when works are taking place. Access to shops along Chilwell Road will be maintained and careful management of the works, together with good communications with local residents and businesses is proposed. Nonetheless, conditions may be difficult for traders for a significant period and the County Council are therefore proposing a financial assistance package based on that used for Hyson Green on NET Line

One. It is proposed to use acquired land along High Road/Chilwell Road as temporary construction sites during the works.

- 15.6 A number of trees will be lost at the Middle Street/Chilwell Road junction, although these losses will be offset with planting elsewhere. In relation to the ES, the changes proposed on Chilwell Road will result in a moderate adverse impact on the townscape and visual amenity, although streetscape improvements will be positive.
- 15.7 The Police Station on Chilwell Road is a listed building and demolition of its curtilage wall will require a listed building consent. No long term impacts are anticipated following reinstatement of the wall. The route operates through the West End and St Johns Grove conservation areas and the loss of perimeter walls for the locally listed Chilwell Road Methodist Church and 2 Devonshire Avenue will require conservation area consents. The appearance of the conservation areas will be altered but the adoption of mitigation measures will ensure there are no long term impacts.
- 15.8 Overall it is considered that the proposals would maintain and enhance the viability of Chilwell Road as a retail centre, creating a safer and more pedestrian friendly environment, increasing accessibility and bringing long term benefits to the area.

16. Castle (formerly Broxtowe) College (Beeston West, Chilwell East Wards).

- 16.1 The tramway leaves Chilwell Road at Castle College and turns north, operating on College land. The junction design in front of Castle College has been difficult, in view of the space constraints and the number of turning movements to be provided for. Although some restrictions are required on movements to and from the Bartons site to the south, the layout has been determined to slow down traffic entering the Chilwell Road environment, and to rationalise two potential junctions into one, and is considered the most achievable layout. The restrictions on the Bartons access are necessary for safety reasons to prevent right turn manoeuvres in the vicinity of the junction, and there are alternative local routes. One business on the north side of High Road needs to be acquired at the junction.
- 16.2 The provision of a tram stop in front of the college results in some land take from Lime Grove Avenue gardens. However, it is considered important to have two stops along Chilwell Road/High Road area in order to serve the shopping area and cater for residents and people working and studying in the area. The proposed tram stop in front of the college will provide high levels of accessibility for people to the west and south of the tram route.
- 16.3 The alignment and tram stop location in the Castle College grounds have been discussed in detail with the College, who have protected the tram alignment in their development proposals for the Beeston campus site.

17. Castle College to Cator Lane (Chilwell East, Beeston West Wards).

- 17.1 The route section from Chilwell Road/ High Road to the park and ride site uses an alignment originally left free of development to accommodate a road but was subsequently partly developed or used for leisure purposes. The section to Cator Lane requires the acquisition of third party land and has been carefully developed

to minimise impact on people and property, and in particular to ensure that Richmond Court can be retained as a habitable elderly residents home.

- 17.2 However, the alignment requires the acquisition of two properties on Gwenbrook Avenue and the partial demolition of properties on Gwenbrook Avenue and Cator Lane, and impact on the gardens of approximately 27 properties on adjacent residential streets. Existing vegetation and trees will be lost, including within gardens. The alignment passes alongside Greenwood Court and requires a small amount of land take.
- 17.3 In developing the alignment and during public consultation, representatives of the NET Project Office met individually with some of the residents affected who are clearly concerned about the proposals. Open meetings were also held with residents in Richmond and Greenwood Courts. In view of the comments received, more detailed surveys of the area have taken place and more detailed plans have been drawn up to give the residents a better understanding of the likely final scheme.
- 17.4 There will be moderate to substantial adverse visual and townscape intrusion into the residential area as a result of the proposals. Woodland planting and 2 metre high fencing will be provided alongside properties and replacement tree planting could also be carried out within the garden areas of adjacent properties to help shield them from the tramway. These measures will also ensure a secure boundary, and assist in making the alignment inaccessible to the public.
- 17.5 Noise increases are predicted alongside Gwenbrook Avenue, Brookland Drive and Cator Lane and 2m fencing will mitigate much of the noise impacts at these locations. Moderate/substantial noise impacts at first floor level on two properties on Gwenbrook Avenue could be removed with higher fencing, and this would be subject to local agreement. A moderate noise impact is predicted at Greenwood Court, but a barrier is not proposed as it would affect natural light. Permanent noise impacts at Greenwood Court will however be below sleep disturbance levels and below statutory levels for insulation in accordance with Noise Insulation Regulations.
- 17.6 There will be a loss of approximately six allotments at the Grove Avenue site, managed by Broxtowe Borough Council, three of which are currently vacant. A mitigation proposal has been proposed involving improved access, car parking and security fencing. An electricity sub-station is proposed adjacent to the allotments, and there is scope for screening planting. There will be a need to acquire land from Broxtowe Borough Council in this area, with additional land needed temporarily.
- 18. The route through Chilwell between Cator Lane and Inham Nook (Chilwell East, Chilwell West Wards).**
- 18.1 From Cator Lane, the tramway runs within the open space through the Chilwell residential area crossing Bramcote Lane (adjacent to Sandby Court) and Inham Road.
- 18.2 *Cator Lane to Bramcote Lane.* The Chilwell via QMC and Beeston report in June 2004 approved a route alignment along the north side of the open space between Cator Lane and Bramcote Lane primarily to retain a continuous area of public park to the south of the alignment.

- 18.3 More detailed information is now available following discussions with Severn Trent concerning a high pressure water main which provides water for up to 80,000 people and conflicts with the northern alignment. The water main has no back up facility, and building the tramway over it could prove problematic during construction, and particularly during operations when works to the main could cause major disruption to services. Consultants Mott MacDonald consider that such risks should be avoided if possible.
- 18.4 Having considered alternative options, it is now proposed to locate the tramway approximately 5 metres further south than proposed previously, which will leave an area of approximately 10 metres in width to the north and 20 metres to the south for public use. The majority of trees would be retained with this option and the space would continue to function as an attractive recreational walking route. An option to run along the south of the open space was considered but this would run close to existing bungalows with short back gardens, making the installation of effective noise and visual barriers difficult. Significant tree loss would also result.
- 18.5 It is proposed to include the full width of the open space within the limits of deviation to allow the alignment to be reviewed through the detailed design stage, with additional risk analysis and further discussions with Severn Trent at that time.
- 18.6 Public consultation on the revised proposals identified concerns in particular about the loss of playing areas and public safety issues. The use of the open space as an area to play games would be restricted; however, there are alternative public fields in the locality for playing games, and the alignment would be kept as far to the north as possible to maximise the largest part of the green space. Safety issues with regard to the Open Space are considered in section paragraphs 18.14 and 18.15 below.

Open space between Cator Lane and Inham Road.

- 18.7 There will be land take from the open space along the whole corridor, and although it is accepted that the amenity value of the area will be reduced, detailed design would preserve and enhance many of the existing features. The existing level of provision of footpaths and cycle tracks along the corridor will be maintained and enhanced. Additional lighting will be provided on approaches to tram stops. The creation of a new footpath and cycleway north of the tracks between Cator Lane and Bramcote Lane will provide a suitable link to the tram stops and would enable people to cycle the full length of the open space without having to cross the tracks. The children's play area at Eskdale Drive will be relocated to the south of the tennis courts, which will not be affected by the proposals.
- 18.8 An area of new open space is proposed west of Eskdale Drive to replace the space lost. The land is currently agricultural and the replacement area will be similar in make up to the existing open space, being designed as an attractive open environment with paths and low level planting. ERM view this as a positive development on townscape and visual amenity. The land is privately owned and will need to be acquired.
- 18.9 An electricity substation is proposed adjacent to Inham Road and some screening can be provided.

- 18.10 *Sandby Court.* The tramway will operate to the south of Sandby Court, taking the tram away from the main circulation area of the complex and the entrance to the adjacent Doctors Surgery. Fencing and screen planting would be provided to minimise the visual impact on Sandby Court and to maintain privacy at the surgery. An open meeting has been held with residents. There will be a small land impact on the adjacent residential development site which is under construction (although the developer has taken account of this impact), the Doctors Surgery Car Park, and on two gardens on Holkham Avenue, and from a small number of garden extensions beyond the original property boundary on Holkham Avenue. Part of the rear garden from Sandby Court will be lost. Some existing vegetation will be lost, although new scrub planting is proposed alongside Holkham Avenue. Overall ERM advise there will be a substantial adverse impact on visual amenity in this area.
- 18.11 Significant noise impacts are anticipated at Sandby Court and the adjacent development site. Noise barriers will minimise the impact at ground floor level but moderate (Sandby Court) and substantial (development site) residual impacts are still anticipated. Permanent noise levels will however be below sleep disturbance level and below statutory levels for noise insulation in accordance with the Noise Insulation Regulations.
- 18.12 *Impact on trees and ecology.* A significant number of trees are lost along this section, including some of the mature trees in a copse opposite Eskdale Junior School at the Bramcote Lane and Cator Lane tram stops and in front of Garton Close and Lark Close. Replacement trees will be provided for all those lost and these will be situated either along the open space section, or in the proposed new area to the west of Inham Road. It is accepted that it will take a number of years for replacement trees and copses to reach the stature of existing trees. Shrub planting is also proposed along the corridor and within the new open space. Overall, ERM consider there to be a moderate adverse townscape impact along the open space.
- 18.13 *Visual intrusion.* A number of properties backing onto the open space, the schools and users of the recreation ground will have views of the tramway infrastructure. ERM consider that the impacts on visual amenity will be moderate or substantial adverse with views along the green corridor considerably altered by the tramway although proposals for tree replacement and shrub planting will offset the visual impact of the tramway in some locations.
- 18.14 *Speed and safety.* The safety of people, and particularly children, along the Chilwell open space is a very important issue and at this stage a number of safety features have been included. Crossing points have been provided opposite Eskdale Junior School and Alderman Pounder School (the latter is immediately next to the proposed tram stop). The proposed knee high post and rail fencing acts as a barrier between the tramway and the adjacent open land to make sure that it is not possible to accidentally stray onto the tramlines. This open fencing allows clear visibility between the trams and pedestrians. All public access and crossing points will be carefully located at the detailed design stage and ensuring the safety of children will involve giving them a good understanding of the tram with information incorporated into safety education programmes. Tram speeds along the open space would be low, allowing the driver to react to any encroachment on the tramway. This will be strictly enforced through automatic recording of the tram movements.

- 18.15 Overall, the safety record of tram systems is very good and the system will not be allowed to operate until Her Majesty's Railway Inspectorate are satisfied that it is safely designed and implemented taking account of its local environment.
- 18.16 *Tram stops and impact on traffic.* Four tram stops are proposed along this section at Cator Lane, Bramcote Lane, Eskdale Drive and Inham Nook. The tram stop at Cator Lane was included following public feedback to consultation. Four tram stops represents a high level of provision for the local area, making the tramway accessible to a large proportion of the local population. Feeder bus services are also likely to make the tramway accessible to those who live further away.
- 18.17 It is not anticipated that crossing points on Cator Lane and Bramcote Lane will cause any significant disruption to traffic. A tram is likely to cross once every seven to eight minutes in each direction (i.e. approximately every four minutes in total) and traffic levels on these roads are not high enough for this to create any significant tailbacks. New pedestrian crossings will be provided as part of the works.
- 18.18 *The water culvert and drainage tanks.* The route of the tramway between Castle College and Eskdale Drive runs parallel to a watercourse which will require modification or diversion at some locations where it runs underneath or adjacent to the proposed tram alignment. Small sections of the open channel may need to be culverted and existing vegetation and trees lost at these locations would be replaced within the same area. An underground sewer also exists along part of this section which has a large tank just west of Cator Lane to hold large flows during times of heavy rainfall. From discussions with Severn Trent Water, it is considered that where the tram route crosses them, strengthening or replacement of existing structures might be required.
- 19. Toton Lane park and ride site** (Chilwell West, Toton and Chilwell Meadows Wards).
- 19.1 Leaving the Chilwell built up area, the tramway crosses agricultural land and terminates at a park and ride site adjacent to Toton Lane.
- 19.2 Based on the economic assessments, 1,400 spaces are proposed at the park and ride site. Since the 2004 report, the boundaries of the site have been altered to include land currently used for parking for adjacent businesses to reduce the impact on Green Belt land. An area of parking will be reserved for the retail area. The land for the park and ride site and alignment from Chilwell is privately owned and will need to be acquired.
- 19.3 The layout of the site will be fully considered at the detailed design stage, concentrating in particular on creating a secure environment, and providing substantial landscaping and planting to mitigate any impact on the openness of the Green Belt. There will be provision for bus interchange. Prior to its development, the park and ride site will be used as a temporary construction site.
- 19.4 The tram alignment and park and ride site are located on Green Belt land, and planning policy guidance advises that park and ride is not necessarily inappropriate provided that non-Green Belt alternatives are considered first and a number of criteria are satisfied. There are no suitable locations outside the Green Belt and an assessment of seven alternative sites for the park and ride within the Green Belt was therefore undertaken by an Officer group including Nottinghamshire County Council, Broxtowe Borough Council and the NET Project

team. The initial seven sites were sifted to three for a more detailed assessment and Toton Lane was identified as the most suitable site as it had lower landscape, visual intrusion and biodiversity impacts, and was the most accessible and attractive site for park and ride users and bus interchange, with a high profile location adjacent to the A52. It is not considered an inappropriate development in Green Belt.

- 19.5 The park and ride site and some track will be located on Grade 2 agricultural land. However, ERM consider the important contribution of NET to the development of a sustainable transport system outweighs the loss of this high quality agricultural land. The park and ride site and associated track will have a slight to moderate adverse impact on townscape and a moderate impact on visual amenity.
- 19.6 Toton Lane will be accessed by a new signalised junction and assessments of traffic levels now and in the future on Toton Lane have indicated that the new access can be accommodated without significantly worsening traffic conditions on this busy road. The new park and ride site is not expected to significantly impact on the A52 'Bardills' roundabout, as most users of the park and ride will be existing travellers who divert to the tram rather than continuing their journey into the City by car. It is understood that the Highways Agency are proposing to implement an interim scheme to improve safety and capacity at the roundabout; including provision of pedestrian and cycle crossings over the A52.