

TRAMWAY TO HIGHAM WAY – OUTLINE FEASIBILITY REPORT TECHNICAL NOTE 1

WSP | Parsons Brinckerhoff submitted a report to Oxfordshire County Council outlining the feasibility of linking Tramway with Higham Way in Banbury by constructing a new link road and bridge over the existing railway lines, dated the 20th May 2016.

The preferred route for the link road from Tramway to Higham Way was described in the “Tramway to Higham Way Link – Consultancy Brief” and discussed at the inception meeting on the 15th February.

The design standards used to prepare the outline design were in accordance with the Department for Transport’s Design Manual for Roads and Bridges. Using TD9, the minimum horizontal curvature for a speed limit of 30mph is 360 metres which could not be fitted within the design envelope for the link road. There are permissible relaxations which allow for smaller radii to be used by increasing the superelevation of the road. The three design options detailed in the report use the following constraints:

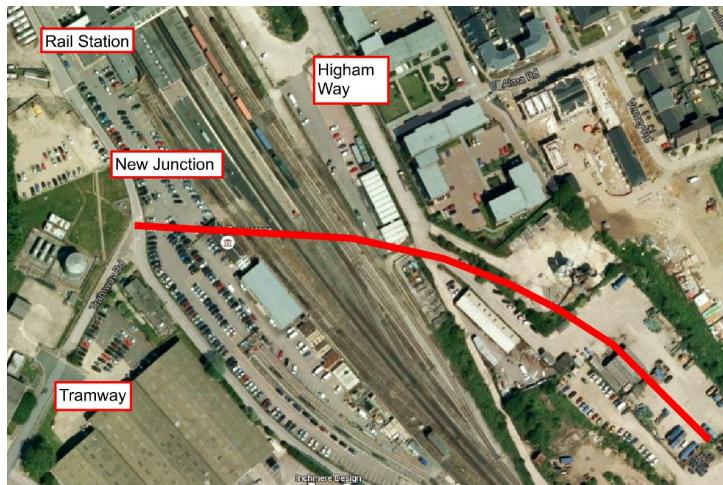
- i.) Option 1 uses a (permissible) 180 metre radius with superelevation of 5%
- ii.) Option 2 uses a radius of 130 metres which is “one step” below the permissible minimum radius with a superelevation of 7%
- iii.) Option 3 uses a radius of 110 metres which is “two steps” below the permissible minimum radius with a superelevation of 7%

Option 3 was used in the design schematics as it gave a good alignment for the link road while not requiring the removal of any existing buildings; this was particularly important as the new multi-storey car park for the rail station is in a direct line between Tramway and Higham Way. Options 1 and 2 were included in the appendices of the report but were not developed any further as they would have required clearance of existing buildings.

TD 27 was used to review the vertical alignment of the proposed link road and headroom over the existing roads. A vertical alignment using a gradient of 5%, which is well within the maximum permissible gradient, could be used which wouldn’t affect the existing canal bridge in Tramway and give good clearances over the existing rail station service roads as well as complying with Network Rail’s clearance requirements over the rail lines.

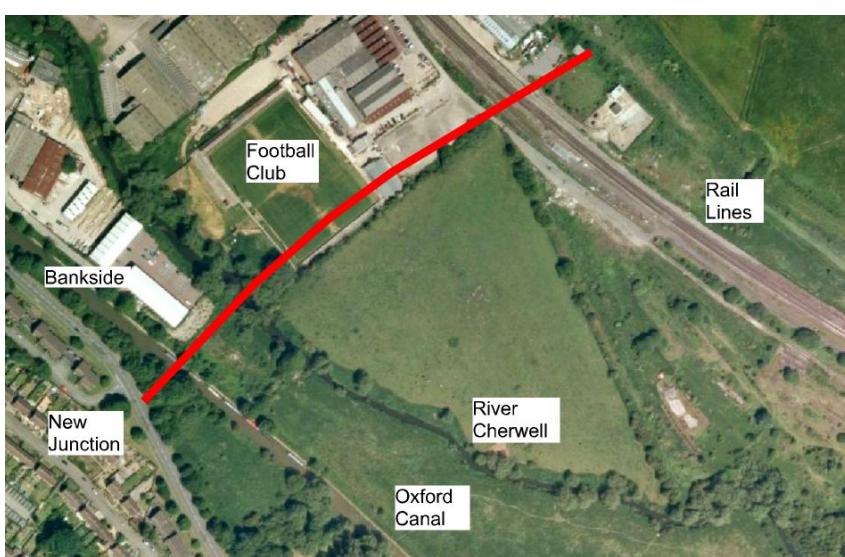
Alternative straight or larger radii link roads (linking Tramway and Higham Way) were considered during development of the link road alignment but these would require new junctions on to both Tramway and Higham Way. While these options could provide the necessary link and would also not require clearance of existing buildings, they would not give a through route to any future development and would give a disjointed or piecemeal appearance to the area. These alternative routes with their additional junctions would also require significant signing to manage incoming traffic into the area. Further any alignment starting from the bottom of Tramway and at the junction with the station service road would not have sufficient distance to acquire the required clearance over the rail lines. (see fig. 1 below)

Fig. 1: Alternative Link Road from Tramway



Alternative routes further south of Tramway/Higham Way were not considered at the time of completing the report due to time constraints and limitations of the area to be considered. However, following a request to review this again, a direct link could be proposed from Bankside in to the development area. An initial review suggests that there would be sufficient room for a link road between the development boundary and the existing Fitness Centre and industrial buildings. Although this could give a better horizontal alignment than the route proposed in the report, it would require three new bridges crossing the Oxford Canal, River Cherwell and the rail lines. The crossing of the rail lines at this location could be achieved in a single clear span using the construction methods for the bridge described in the report (and without the need for any structure on Network Rail land). The location of a link road here is within the area that is protected by recent flood alleviation measures but this would need to be carefully reviewed as it would lie close to the boundary of the River Cherwell flood plain and may require mitigation measures to prevent the link road from flooding and to maintain peak river flows during times of flooding. (see fig. 2 below)

Fig. 2: Alternative Link Road from Bankside



Prepared by Graham Hemmings

Associate – Highways and Bridges