

CAPITA

Furthergate Link Road Outline Business Case

VfM Assessment Methodology
March 2018



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1. Introduction

1.1 Background

This report has been prepared to provide the overall methodology for the Value for Money (VfM) appraisal of the Furthergate Link Road scheme to inform the Business Case submission for the scheme. The proposed methodology is based on the Department for Transport (DfT)'s Transport Appraisal Guidance (WebTAG).

1.2 Scheme Summary

A new link road between the Red Lion Roundabout and the A678 Furthergate was first proposed as part of the Pennine Reach Major Transport Scheme Business Case.

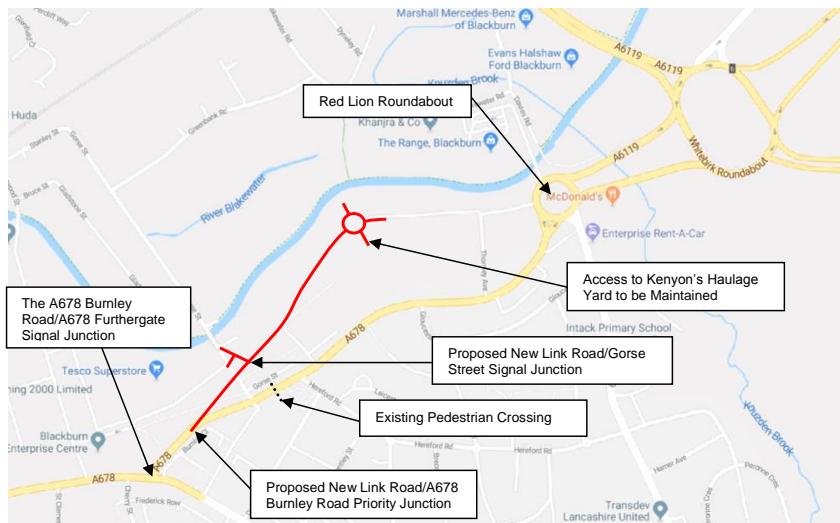
The original proposals for the new link road involved construction of the new highway running roughly parallel to the A678 Burnley Road to its north, through a disused industrial area. Due to complications relating to 3rd party ownership of land required to deliver the scheme the full proposals were dropped from the Pennine Reach scheme.

However, improvements to the existing A678 Furthergate/Burnley Close priority junction were completed in 2016, upgrading it to a signal junction, with Burnley Close effectively becoming the A678. An enhanced bus priority route has been also provided through the A678 Bottomgate and the A678 Furthergate, with an intention to expand the bus priority road through the A678 Burnley Road as part of the original scheme proposal.

A north-eastern section of the new link road was also delivered in 2016 using funding from the original Pennine Reach Scheme. This currently forms a fifth arm of the Red Lion Roundabout which currently provides for local access only to Kenyon's Haulage and allotments. This part of the link road has been constructed to the specification outlined by the original scheme design in anticipation that the issues relating to the full scheme could be resolved.

Under the full scheme proposals, a new link road would be constructed between the Red Lion Roundabout and Gorse Street, running parallel to the A678 Burnley Road. At its north-eastern end, the new link road would tie into the existing section of the carriageway, which currently forms a fifth arm of the Red Lion Roundabout, constructed as part of the Pennine Reach scheme. At its south-western end, the proposed link road would tie into the A678 Burnley Road, approximately 130m to the north of the signalised junction with the A678 Furthergate.

The existing and proposed networks are schematically shown in Figure 1.1 overleaf.

Figure 1.1. Existing and Proposed Highway Network

The proposed link road would provide one traffic lane in each direction (3.65m wide), with 1.5m wide cycle lanes and 2m wide footways on both sides of the road.

A section of Gorse Street would be stopped up, as a new link would be provided to tie into the proposed link road, via a new signalised junction.

A new priority junction would be provided, where the proposed new link road intersects the A678 Burnley Road, with the link road forming the major arm of the junction.

2. Proposed Methodology

2.1 Background

At present, there is a high volume of traffic passing through the residential area along the A678 Burnley Road.

It is envisaged that the proposed new link road would improve journey times, providing an alternative route for through traffic between Blackburn and Junction 6 of the M65 motorway, as well as reducing congestion through the residential area along the A678 Burnley Road. As a result, it is expected that the scheme will generate journey time savings for motorists and that the resulting user benefits will be a key element which will underpin the Business Case.

The potential impact of the scheme will be analysed using a spreadsheet model and individual junction models, where the proposed scheme is considered to have an impact on journey times, based on the latest WebTAG values of time¹. In order to estimate the user benefits it is proposed that the following methodology be adopted:

- Stage One – Data Collection and Analysis
- Stage Two – Base Year Junction Modelling
- Stage Three – Junction Modelling and Scenarios
- Stage Four – Identification of Journey Time User Benefits

Each of these stages is described in more detail in the following sections.

2.2 Stage One – Data Collection and Analysis

Data collection will include the following:

- 12hrs (7am to 7pm) Manual Classified Turning Counts (typical weekday) at:
 - The A678 Burnley Road/Whitebirk Road roundabout junction (Red Lion roundabout)
 - The A678 Burnley Road/Gorse Street priority junction
 - Gorse Street/Tesco Access priority junction
- 7 day 24hrs speed Automatic Traffic Count (ATC) survey at the A678 Burnley Road (between the Red Lion roundabout and the Gorse Street priority junction)

Commented [SJ1]: By whom?

Commented [WA2R1]: As one of the scheme objectives along with improving journey time reliability and improving journeys times and journey time reliability for public transport users it is envisaged by the scheme promoter that the Furthergate Link provides the missing link to the Pennine Reach Scheme to provide an improved route between M65 Junction 6 and Blackburn Town Centre.

Commented [SJ3]: Will it? This is my biggest concern – the scheme itself adds an additional junction to the currently extant route. On that basis, it seems to me that it will most likely lead to a small worsening of journey times along the A678 Burnley Road compared to the Do Min. There will obviously be increased capacity due to the new link road, so at times of high congestion there could well be benefits to offset this. I'm not suggesting there definitely will be disbenefits, just that it seems there could be.

What will you do if the modelling shows net disbenefits? This is to my mind a possibility, so I think we need to be clear at the outset as to where else there would be benefits (unlocking development, primarily), and how this could be incorporated to form a good VfM case.

Commented [WA4R3]: It is acknowledged that the scheme introduces new junctions to the route and has the potential to increase delay. A 40mph speed limit is currently being considered for the Link Road. We may also need to consider the possibility that without the link road traffic calming measures may be required on Burnley Road as a road safety measure (3 serious incidents in the last 3 years). There are also worsening on-street parking issues on Burnley Road which would likely impact on do-min journey times.

While it is expected that the new link road shall unlock land for development there is currently a lack of detail in this regard. It is envisaged that we will look to generate a GVA value based on acceleration of development although we would not look to capture this within the BCR calculation.

¹ WebTAG Databook (December 2017 release v1.9.1)

- Pedestrian Crossing Survey (crossing demand and duration)

2.3 Stage Two – Base Year Junction Modelling

Base models will be based on existing network (geometry, signal timings, etc.) and observed traffic count data (2018) and sense checked against queue length data and local knowledge of typical network conditions during AM, IP and PM peak periods. The following junctions will be assessed:

- Red Lion Roundabout
- The A678 Burnley Road/Gorse Street
- Burnley Road Pedestrian Crossing (using LINSIG based on observed data)

2.4 Stage Three – Future Year Junction Modelling and Scenarios

Future year demand matrices for Do-Minimum and Do-Something networks will include:

- 2019 Opening Year
- 2024 Horizon Year 1 (for planning application refresh)
- 2034 Horizon Year 2

Future year matrices will include committed development controlled to NTM/TEMPro with appropriate planning assumption adjustments and fuel/income adjustment factors applied.

The Do-Something matrices shall take account of likely transfer of through traffic from the A678 Burnley Road onto the new Furthergate Link Road. A central estimate based on previous work undertaken for the Pennine Reach study (counts at side arms along Burnley Road) assumed a transfer of 80% of traffic from Burnley Road onto the new link road. NB. Sensitivity testing may be required.

The Do-Minimum modelling shall include future year traffic demands applied to the base models, as listed in Section 2.3.

The Do-Something modelling shall include future year traffic demands to be applied to the future year junction models to include:

- The New Link Road/A678 Burnley Road priority junction
- The New Link Road/Gorse Street signal junction
- The New Link Road intermediate roundabout

Commented [SJ5]: So this work will simply use the same assumption as the previous work? Can we interrogate this assumption at all, or at least provide some analysis of it to establish how robust it is? Agree that sensitivity testing will be appropriate here.

Commented [WA6RS]: The use of ANPR or RSI surveys to establish the amount of through traffic on Burnley Road has for previous studies been considered too expensive and disproportionate. There are a limited number of side streets and accesses along Burnley Road between the Red Lion roundabout and Gorse Street. Previous counts of traffic turning into and out of Hereford Road, Gloucester Road and Thornley Ave. suggest that 80% would be a conservative estimate of through traffic. Traffic signs and further measures on Burnley Road are envisaged to ensure through traffic transfers onto the new Link Road. We consider this to be proportionate and appropriate to the scale of the scheme given inclusion of sensitivity tests (envisaged 60% of transfer).

The Do-Something scenario at the Red Lion Roundabout junction shall be undertaken through use of additional flow groups within the do-minimum model to take account of the transfer of through traffic onto the new link road.

2.5 Stage Four – Identification of Journey Time User Benefits

Journey time savings for each junction and along the existing A678 Burnley Road and proposed new link road shall be derived by comparing the Do-Minimum and Do-Something scenarios.

- The Do-Minimum journey times shall be based on the following:
 - Journey time on the A678 Burnley Road between Furthergate and Red Lion Roundabout using distance and average speed (by time period from speed survey)
 - Delay at junctions and the A678 Burnley Road pedestrian crossing
- The Do-Something journey time shall be based on the following:
 - Journey time on the new Link Road between Furthergate and Red Lion Roundabout using distance and the speed limit (30 or 40 mph TBC)
 - Delay at junctions

Travel times on approach links other than the A678 Burnley Road and the new link road will not be included in the journey time calculations. Delay times from junction modelling on these approaches will however be included.

The journey time savings shall be used to determine transport user benefits in the same way as for DEDC using updated values from WebTAG Databook (December 2017 release v1.9.1).

Commented [SJ7]: So is the assumption just that everyone travels at the speed limit, except during congestion? Is this likely? At the least, I'd have thought there would be a need to account for slowing down on the approach to junctions.

Commented [WA8R7]: Junction delay will be captured through junction modelling. There is a reasonable chance common with other high specification links in Blackburn that average speeds will be above the speed limit. The speed survey for the existing Burnley Road will be mid link and therefore the approach to capturing delay on the approach to junctions is consistent between the do min and so something.

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