

North Keynsham: A4 to A4175 Link Road Environmental Appraisal

PREPARED FOR: Bath and North-East Somerset Council

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1.0 Project Background and Methodology

1.1 Project Background

The scope of the WP2 study is to consider potential highway alignments for a new link road connecting the A4 Bath Road with the A4175 Keynsham Road on the north side of Keynsham. Three route entry options were considered: A; B; and C, alongside three route options: 1; 2; and 3. The environmental appraisal has been completed for all options except route entry option B, which was disregarded because it was considered an impractical engineering solution. If anything changes, this can be revisited.

The West of England Combined Authority (WECA) have produced a Joint Transport Study (JTS) for their administrative area, which includes improving transport links in Keynsham. The JTS objectives have been reviewed and tailored into general and corridor/site specific objectives, as follows (CH2M, 2017):

General Objectives

- Improve transport network resilience and journey time reliability.

Specific Objectives

- Provide effective access to the new development area in North Keynsham (SDL);
- Reduce traffic flows and relieve traffic pressures on routes through Keynsham; and
- Deliver improved facilities for pedestrians, cyclists and effective public transport in North Keynsham.

1.2 Appraisal Methodology

The first stage for the project team is the identification and sifting of a long list of options. This includes initial mapping of environmental constraints and scoping of potential impacts, to ensure that environmental criteria are considered from the outset in scheme assessment.

An initial desk-based study has been undertaken to identify the potentially significant environmental issues, constraints and opportunities associated with the potential road alignment options. The key environmental features within the study area have been described, as well as the degree to which these may present constraints or opportunities to the implementation of the development options listed above.

The appraisal focused on the following environmental topics:

- Noise;
- Air quality
- Greenhouse gases
- Landscape;
- Townscape;
- Historic environment;
- Biodiversity; and
- Water environment

The environmental topics were assessed in spreadsheet format, using the Department for Transport (DfT) 'WebTAG' guidance on the appraisal of major transport schemes (DfT, 2014). The appraisal method included collation and review of relevant available baseline data and GIS-based identification of key environmental features and characteristics. These data were then used to assess the likely severity of potential impacts for each of the route and route entry options.

Data sources included local environmental information and data from Defra (2018), Natural England, Historic England, Bristol Regional Environmental Records Centre (2013) and the Environment Agency (2018). In accordance with DfT (2014) guidance, data collection has been a desk-based exercise.

The environmental appraisal will be updated at successive stages of project development as the options are shortlisted and taken through to concept design (see Atkins, 2018), as follows:

- **More detailed development and appraisal of a shorter list of options:** with progressively more detailed appraisal of potential environmental issues as the number of schemes is refined;
- **Concept design to develop schemes to a sufficient level of detail:** 2D or 3D design, as required, to confirm the key technical requirements and potential implications for the water environment, biodiversity, landscape and historic environment (together with the other environmental impacts);
- **Appraisal of schemes:** using TAG Unit A3 (Environmental Impact Appraisal), including the use of the natural capital approach to the appraisal of water environment, biodiversity, landscape and heritage impacts (together with quantified assessment of impacts on carbon emissions and qualitative assessment of impacts on noise and air quality); and
- **Identification of mitigation:** drawing on the findings of the appraisal, identification of mitigation measures and integration into the scheme design to minimise the environmental impacts of the scheme.

1.3 Limitations

There were some limitations with the availability of information. The previous studies (see references) used to inform parts of this study did not fully cover the same spatial area of this project. Consequently, the level of detail provided in this assessment is slightly higher in the areas covered by these reports. Additionally, as no traffic modelling has been undertaken at the option appraisal stage, the assessment of air quality and greenhouse gas impacts for all route and route entry options was very high-level. For this reason, no significant air quality or greenhouse gas impacts have been identified in the appraisal summary in Section 2.

2.0 Route Entry Options Environmental Appraisal

Route Entry Option A

Main environmental findings:

Assessment of this route entry option includes an additional area of road improvements near to Keynsham station. The main environmental findings are:

- **Noise:** Increased traffic volumes and the resulting rise in noise could impact leisure users and those living on houseboats on the River Avon and employees of the garage and motorcycle businesses located nearby.
- **Landscape:**
 - There is a section of woodland, important to the local landscape character, which mitigates the visual impacts arising from the industrial complex (Bath and North-East Somerset Council, 2017).
- **Biodiversity:**
 - Travels through an area of UK Biodiversity Action Plan (BAP) habitat ('Open mosaic habitats on previously developed land'), which can support rich assemblages of invertebrates;
 - Badger setts have been reported near to this route entry option, NW of the sewage works (Mott MacDonald, 2009). However, there have been no more-recent surveys than 2009, so it is possible that badgers may use the site differently or are no longer present;
 - Road improvements required west of route entry option A could also impact biodiversity in an area of deciduous woodland.
- **Water Environment:**
 - Lies within National Flood Zone 2; and
 - The improvements to the Broadmead industrial estate access road, proposed as part of this route entry option lies within the functional floodplain of the River Avon, which flooded in December 2013 (Bath and North East Somerset Council, 2014).

Route Entry Option C

Main environmental findings:

- **Noise:** Increased traffic volumes and the resulting rise in noise could impact leisure users, houseboat residents, employees of the Broadmead Lane Industrial Estate and residents at Meadowdrive and Avondale House;
- **Townscape:** Views for residents at Meadowdrive, Avondale House and Roseneath and users of the River Avon Trail footpath are likely to be negatively impacted.
- **Biodiversity:**
 - Route entry option crosses River Avon Site of Nature Conservation Interest (SNCI) and Cleeve Wood Hanham SSSI is approximately 421m from Route Entry Option C;
 - Travels through areas of UK BAP Priority Habitat - Coastal and floodplain grazing Marsh and Open mosaics on previously developed land;

- Badger Setts have been reported near to this route entry option, NW of the sewage works, (Mott MacDonald, 2009). However, there have been no more recent surveys than 2009, so it is possible that badgers may use the site differently or are no longer present;
- **Water Environment:**
 - Lies within areas of National Flood Zone 2 and 3; and
 - This route entry option lies within the functional floodplain of the River Avon, which flooded in December 2013 (Bath and North East Somerset Council, 2014).

3.0 Route Options Environmental Appraisal

Route 1

Main environmental findings:

- **Noise:** There is potential for increased traffic volumes to increase noise in the area surrounding the route;
- **Water Environment:** This route has areas within National Flood Zones 2 and 3

Route 2

Main environmental findings:

- **Noise:** Increased traffic volumes and the potential rise in noise could impact users of facilities located near to this route - including Avon Valley Adventure and Wildlife Park and Avon Valley Country Park;
- **Townscape:** Views from the Avon Valley Country Park could be negatively impacted;
- **Historic Environment:** The route passes close to Pixash Lane Bridge, which is Grade II listed and was designed by Brunel. Road development here could affect views of the historic bridge from the railway (Bath & North East Somerset Council, 2018);
- **Biodiversity:**
 - This route bisects Broad Mead Field SNCI, which is an area of swamp and marshy grassland (BRERC, 2013). Running along the east side of the SNCI is a shallow stream, a possible UK BAP Priority Habitat (BRERC, 2013);
 - This route also runs near to a stretch of hedgerow, composed mainly of native species and considered UK BAP Priority Habitat Hedgerows (BRERC, 2013); and
- **Water Environment:** Part of this route lies within National Flood Zones 2 and 3.

Route 3

Main environmental findings:

- **Noise:** Increased traffic volumes and the potential rise in noise could impact users of facilities located near to this route - including Avon Valley Adventure and Wildlife Park and Avon Valley Country Park;
- **Townscape:** Views from the Avon Valley Country Park could be negatively impacted;
- **Historic Environment:** Travels near to a milestone which is Grade II listed (Bath & North East Somerset Council, 2018);
- **Biodiversity:**

- This route will bisect Broad Mead Field SNCI, which is an area of swamp and marshy grassland (BRERC, 2013). Running along the east side of the SNCI is a shallow stream, a possible UK BAP Priority Habitat (BRERC, 2013);
 - This route also runs near to stretches of hedgerow, composed mainly of native species and considered UK BAP Priority Habitat Hedgerows (BRERC, 2013); and
 - Manor Road Community Woodland, a Local Nature Reserve, is located approximately 410m from Route 3 and Stidham farm SSSI is located approximately 370m from route 3; and
- **Water Environment:** Part of this route lies within National Flood Zones 2 and 3.

4.0 Summary

This environmental appraisal has found no major impacts on any of the environmental topic areas assessed. No nationally or internationally designated sites will be affected by the proposed works, but locally designated sites are affected in some cases. There are therefore some environmental issues that should be considered when deciding route choice. The main findings are described below, by topic area.

Air Quality:

Impacts are thought to be minimal at this stage of the assessment.

Greenhouse Gases:

Impacts are thought to be minimal at this stage of the assessment.

Landscape:

There are no designated sites near to any of the route entry and route options. Impacts are thought to be minimal for all routes, except Route Entry Option A. There is an area of valued woodland, important to the character of the area and for shielding of visual impacts from the industrial complex.

Townscape:

The main impacts concern views for users of the Avon Country Park (Routes 2 and 3) and River Avon Trail footpath (Route Entry C) and for residents at Meadowdrive, Avondale House and Roseneath (Route Entry C).

Historic Environment:

Routes 2 and 3 are the only options to impact the historic environment. Route 2 travels near to Pixash Lane Bridge which was designed by Brunel, and views from the railway could be impacted. Route 3 passes near to a Grade II listed milestone.

Biodiversity:

Routes 2 and 3 bisect Broadmead Field SNCI and two possible UK BAP Priority Habitats, a stretch of hedgerow and a stream.

Both Route Entry options (A and C) travel through an area of B&NES designated open mosaic habitat and an area on the Priority Habitat Inventory. Badger Setts were also reported near to both Route Entry options, although the latest available information was published in 2009.

Water Environment:

All route entry and route options lie within National Flood Zones 2 and 3. Both Route Entry Options lie within the functional floodplain of the River Avon, which flooded in December 2013.

5.0 References

- Atkins (2018). Environmental Appraisal of Transport Schemes – Draft Technical Note.
- Bath & North East Somerset Council (2018). Historic Environment Record. Available on: <http://www.bathnes.gov.uk/services/tourism-and-heritage/archaeology/sites-and-monuments-record>
- Bath & North East Somerset Council (2017). North Keynsham Strategic Development Location (SDL) Landscape and Visual Assessment.
- Bath & North East Somerset Council (2014). Broadmead Lane Industrial Estate Flooding Incident Winter 2013 / 2014 Flood and Water Management Act, Section 19 Flood Investigation.
- Bristol Environmental Records Centre (BRERC)(2013). Strategic Development Areas Preliminary Ecological Surveys and Assessment.
- CH2M (2017) WP2 - North Keynsham: A4 to A4175 Link Road Briefing Note to the Client Group: Technical Memo.
- Defra (2018) Available at: www.Magic.gov.uk, accessed 26/01/18.
- Department for Transport (2014). Available on: <https://www.gov.uk/guidance/transport-analysis-guidance-webtag>, accessed 01/02/18.
- Environment Agency (2018). ‘What’s in your backyard?’ Available on: http://maps.environment-agency.gov.uk/wiyby/wiybyController?ep=maptopics&lang=_e, accessed 01/02/18.
- Mott MacDonald (2009). Geotechnical Report Former Landfill Site, Broadmead Lane Keynsham.