



# MetroWest

Phase 2 Preliminary Business Case

## Appendix F - Henbury Station Locations Options Appraisal

July 2015

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# MetroWest Phase 2

## Henbury Station

### Options Appraisal Report

May 2015

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## **1 Introduction**

### Background

- 1.1 MetroWest is a programme of improvements to the local rail network in the West of England. A consultant study<sup>1</sup> recommended a phased approach:
- Phase 1 – up to half hourly train services for the Severn Beach line and local stations between Bristol Temple Meads and Bath Spa plus the re-opened Portishead line.
  - Phase 2 – half-hourly train services to/from Yate plus hourly services the Henbury Line with up to two new stations and up to two new station(s) on Filton Bank.
  - New stations - Portway, Saltford, etc.
- 1.2 The West of England authorities endorsed this approach and its Local Transport Body Board prioritised Phase 1 for devolved major scheme funding from 2015/16 to 2020/21; to be followed by Phase 2. Further funding for MetroWest has been secured through the Strategic Economic Plan and from the four local authorities.
- 1.3 The projects will be procured through Network Rail's GRIP stages; the four stages of the project are:
- Stage 1 - Option Development (inc GRIP 1-2);
  - Stage 2 - Scheme Case (inc GRIP 3);
  - Stage 3 - Planning Powers and Procurement (inc GRIP 4 - 5);
  - Stage 4 - Construction & Opening (inc GRIP 6 – 8).

### Henbury Line

- 1.4 The Henbury Line runs adjacent to Filton, Southmead and Henbury. North of the line is the former-Filton Airfield, which is included in the Cribbs Patchway New Neighbourhood, the largest re-development area in South Gloucestershire.
- 1.5 A consultant study<sup>2</sup> considered potential locations for new stations on the Henbury Line; it recommended one at North Filton and identified two site options for a station serving Henbury and environs.

### Purpose of this Report

- 1.6 This report compares the two potential sites for Henbury station.

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<sup>1</sup> West of England Rail Study, Halcrow, April 2012

<sup>2</sup> North Fringe Stations Study, CH2MHILL, March 2014.

## 2 Site Descriptions

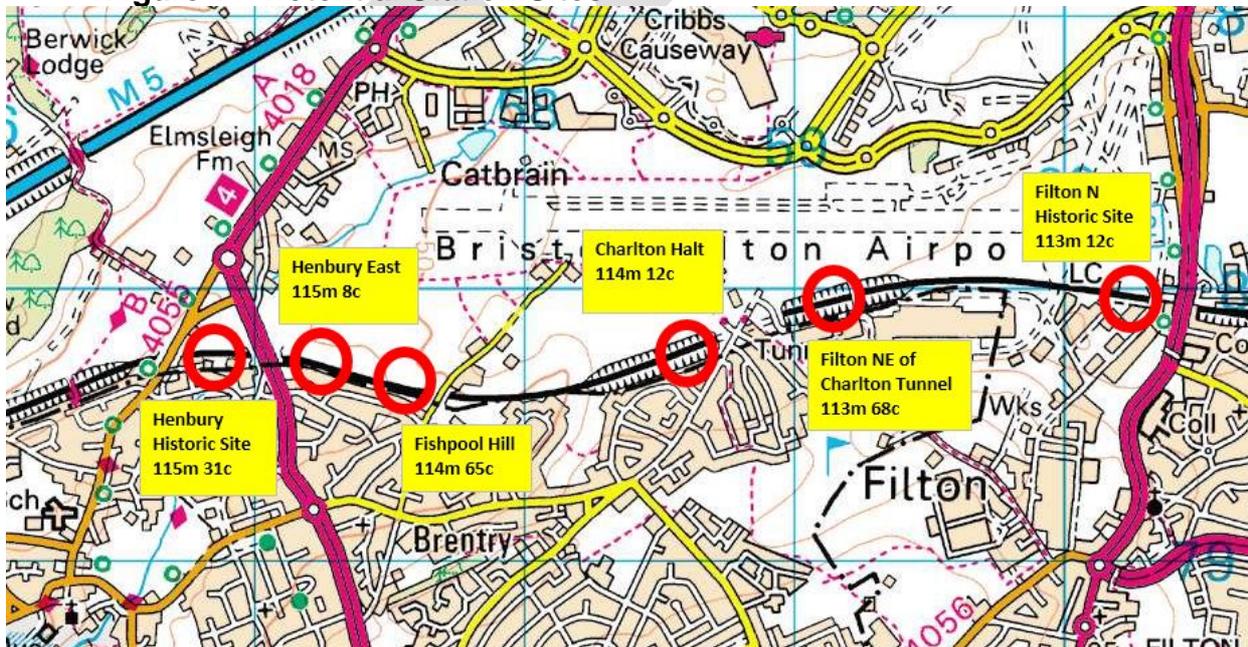
### Context

2.1 The key driver for the re-opening of the Henbury Line to passenger services is the re-development of Filton Airfield as part of the Cribbs Patchway New Neighbourhood. The main requirements for the new neighbourhood are set out in Policy CS26 of the South Gloucestershire Core Strategy<sup>3</sup>; this development area is termed the Cribbs Patchway New Neighbourhood [CPNN]. Policy CS26 describes the site as follows:

*A major mixed use development is planned on 480ha of land at Cribbs Causeway, Patchway and Filton, as defined in Figure 6. Within the new neighbourhood through the preparation and adoption of a Supplementary Planning Document, provision will be made for approximately 5,700 dwellings in new mixed use communities, around 50 ha of employment land, and greater diversity of commercial uses including additional retail, together with supporting infrastructure and facilities.*

2.2 The Henbury Line runs along the southern boundary of the new neighbourhood and is well-placed to serve it as well as existing communities, such as Henbury and Filton. The North Fringe Stations Study (CH2MHILL, March 2014)<sup>4</sup> considered potential locations for new stations on the Henbury Line, as shown below.

**Figure 1 – Potential Station Sites**



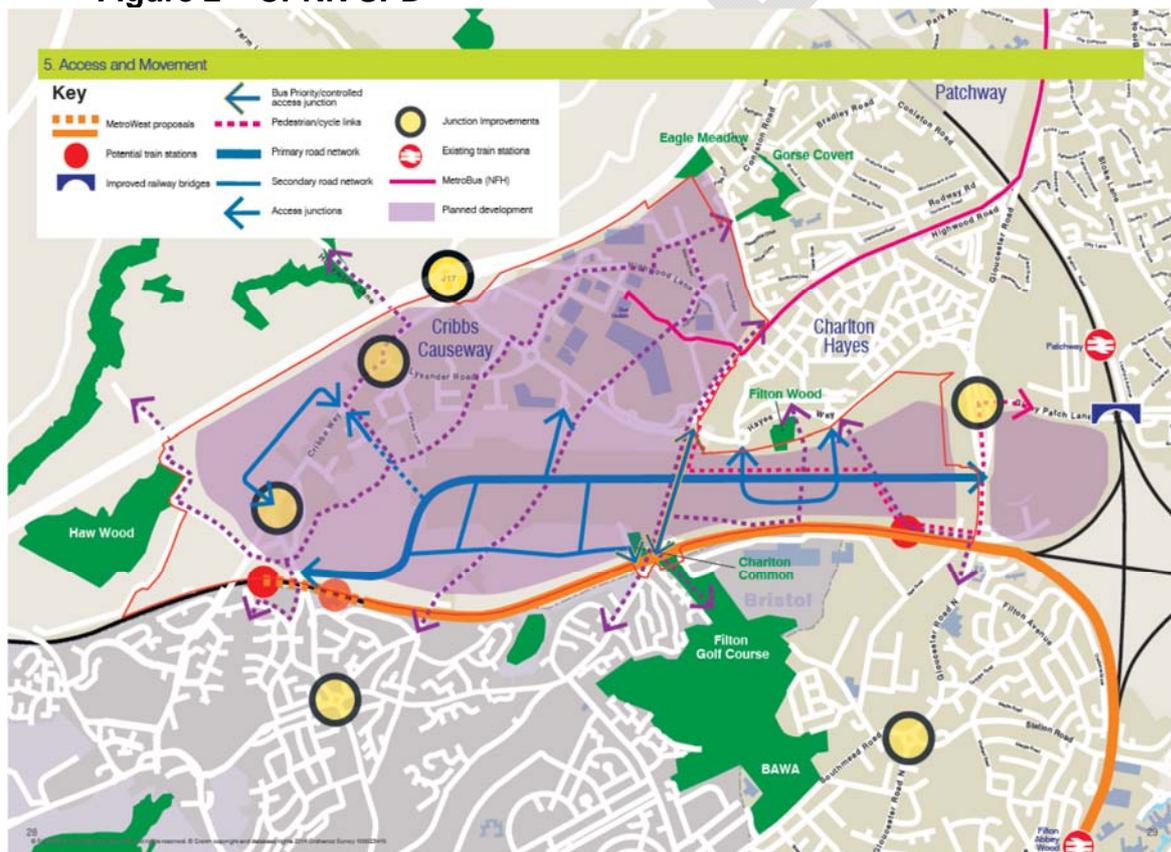
This map is reproduced from Ordnance Survey with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office. Crown Copyright 100023410 [2014]

<sup>3</sup> [South Glos Core Strategy 2006-2027](#)

<sup>4</sup> [North Fringe Stations Study, CH2MHILL, March 2014](#)

- 2.3 The study recommended one station at North Filton and one serving Henbury and environs. The report identified two potential sites for a Henbury station:
- 1) immediately east of the A4018 - the **'East Site'**; and
  - 2) west of the A4018 and east of Station Road (the former station site) – the **'West Site'**.
- 2.4 Discounted station sites were Fishpool Hill, Charlton Halt and a site north-east of Charlton Tunnel; these would be in the cuttings on the approach to Charlton Tunnel and would suffer from the very poor drainage conditions in the Tunnel and its approaches (that requires constant mitigation); as well the level differential between the railway and the surrounding land (making access difficult).
- 2.5 The Pre-adoption draft of the CPNN SPD (January 2014) incorporated the emerging findings of the North Fringe Stations Study and safeguarded both sites for a Henbury station (plus that for North Filton). The safeguarded station sites and the key features of the SPD access and movement strategy for the CPNN are reproduced below.

Figure 2 – CPNN SPD



- 2.6 It can be seen that both Henbury site options are located at the south-west corner of the CPNN and, given their proximity to each other, share many common characteristics at the strategic level; the main differences lie in the detail of their location in relation to both existing settlements and forthcoming development.

Current Local Setting

2.7 The local setting of the two sites is shown below.

**Figure 3 – Current Station Site Setting**



- 2.8 The East Site is currently a green field site immediately east of the A4018 Wyck Beck Road, a busy dual carriageway linking the M5 Junction with Westbury On Trym, Clifton Down and Bristol City Centre. The road passes over the railway and there is a footway on the east-side of the road. Wyck Beck Road is well-served by local bus services, including the 54, which runs every 12 minutes during the day. The nearest bus stops are currently about 250m south of the station site.
- 2.9 The West Site is on the former station site. The platform and buildings on the north side have been removed; the platform and former station buildings on the south-side remain. The former station goods yard to the south is now a concrete works, which is accessed off Station Road via the former station access road (along which Network Rail maintains access rights). Station Road is a local distributor road between the A4018 and Henbury, with traffic management measures to reduce rat-running. There is a footway on the west-side of the railway embankment and bridge over the railway. Station Road is well-served by local bus services, including the 76 and 1, which both run every 10-12 minutes during the day. The nearest bus stops are just over 200m south of the station site.

Development Proposals

- 2.10 Land north of both station sites will be developed as part of the CPNN in accord with the Core Strategy and CPNN SPD.

2.11 The development north of the East Site is known as 'Land At Wyck Beck Road and Fishpool Hill'. The application 'red line' abuts the boundary of the Henbury Line between the A4018 Wyck Beck Road and Fishpool Hill overbridges and would include part of the Henbury Station East Site. The masterplan station site is shown below.

**Figure 4 – Land At Wyck Beck Road and Fishpool Hill Masterplan**



2.12 The application makes passive provision for a station, its associated facilities and its access. The area adjacent to the station is mostly low-lying and prone to flooding; hence, only green infrastructure is proposed (i.e. flood and environmental mitigation measures, public open space and playing fields). Residential development a new school would be located to the north and east of the station site.

2.13 North of the Henbury West Site is a development known as 'Land at Cribbs Causeway'; the application 'red line' abuts the boundary of the Henbury Line between the Station Road and A4018 over-bridges and would include part of the Henbury Station West Site. The masterplan is shown below.

**Figure 5 – Land at Cribbs Causeway Masterplan**



Land at Cribbs Causeway  
Masterplan  
for Deedee Freed &  
Skanska Residential  
Drawn: 0001\_04\_08  
Rev'd: 1/2002 Rev 02  
itp

- 2.14 The application makes passive provision for a station, its associated facilities and its access. There would be a mix of land uses adjacent to the station, comprising a local retail centre, office and residential uses.
- 2.15 Both development sites have secured outline consent.

Station Proposals

- 2.16 CH2MHILL prepared concept plans for both station sites as part of the North Fringe Stations Study; these were updated as part of the GRIP2 Feasibility Study, which is appended to the Preliminary Business Case.
- 2.17 For each station site there are concept drawings for a station served by a spur service (at which services terminate) and by a loop service (at which services pass through). The spur stations would have a new terminating siding (off the through lines) and single platform on the north side only; however, the design would permit provision of platforms on the running lines in the future (for a loop service). The loop stations would have platforms on both sides of the running lines linked by a ramped pedestrian bridge.
- 2.18 Figure 4 shows the East Site would be accessed from the north side via a road through the adjacent CPNN development from a new, all movements junction with the A4018. The car park, cycle parking, bus stop and drop-off/pick-up zone would be on the north-side. A secondary pedestrian path could be provided from north-side platform direct to the A4018, which would facilitate access to/from existing settlements to the south. The loop south-side platform to could also have a path to Tranmere Avenue and the A4018 through the adjacent public open space.
- 2.19 Figure 5 shows the West Site shows would be accessed from the north-side only, via a road through the adjacent development from a new junction with Station Road and a limited-movements junction from the A4018. There would be a car park, bus stop, drop-off pick-up zone and cycle parking on the north-side. The concrete works and Network Rail's access on land south of the station site mean that a pedestrian link is unlikely to be deliverable; hence, for both spur and loop, access would be from the north side only,

### **3 Site Options Appraisal**

#### Methodology

- 3.1 The two sites are assessed against three broad criteria:
- policy fit;
  - environmental / social impact; and
  - deliverability.
- 3.2 The methodology is based on the Department for Transport's 'Early Assessment and Sifting Tool (EAST)', which is a qualitative technique to produce an overall ranking for each station site using the following scale:
- Positive impact;
  - Moderately positive impact;
  - Neutral impact;
  - Slightly negative impact;
  - Negative impact.

The methodology is the same as that used for Portishead station in the MetroWest Phase 1 project.

Policy Fit

3.3 The results of the policy fit assessment are shown below.

Policy Fit	1. East (new site)	2. West (former station)
<p>Development Plans:</p> <p>1. South Gloucestershire Core Strategy<sup>5</sup></p> <p>2. CPNN Framework Supplementary Planning Document [SPD]<sup>6</sup></p> <p>3. Bristol City Core Strategy<sup>7</sup></p>	<p>1. Policy CS7 (Strategic Transport Infrastructure) prioritises strategic infrastructure proposals that reduce congestion and improve accessibility by means other than the private car; these include:</p> <ul style="list-style-type: none"> <li>- The Greater Bristol Metro Project (now MetroWest);</li> <li>- Re-introduction of passenger services on the Hallen Line/ Henbury Loop (subject to a satisfactory business case).</li> </ul> <p>The illustrative Strategic Transport Infrastructure Proposals Diagrams (Figure 2 and 3), show safeguarding for a station at Henbury.</p> <p>Policy 26 identifies the mixed use development at CPNN and the safeguarding of land for new railway stations.</p> <p>2. The SPD's Access and Movement Strategy identifies two potential sites for a station at Henbury and requires that sufficient land be provided to enable the provision of interchange facilities with walk, cycle, bus and cycle/ car parking provision and that the location of development be designed to mitigate any noise impact from increased train services.</p> <p>3. Policy BCS10 supports the Greater Bristol Metro Project (now MetroWest) the reintroduction of a local passenger rail service on the Henbury Loop Line; the policy sees this as one of several schemes that will form part of an integrated transport system and supports development.</p> <p>Both site options offer a 'positive' policy fit.</p>	<p>1. Policy CS7 (Strategic Transport Infrastructure) prioritises strategic infrastructure proposals that reduce congestion and improve accessibility by means other than the private car; these include:</p> <ul style="list-style-type: none"> <li>- The Greater Bristol Metro Project (now MetroWest);</li> <li>- Re-introduction of passenger services on the Hallen Line/ Henbury Loop (subject to a satisfactory business case).</li> </ul> <p>The illustrative Strategic Transport Infrastructure Proposals Diagrams (Figure 2 and 3), show safeguarding for a station at Henbury.</p> <p>Policy 26 identifies the mixed use development at CPNN and the safeguarding of land for new railway stations.</p> <p>2. The SPD's Access and Movement Strategy identifies two potential sites for a station at Henbury and requires that sufficient land be provided to enable the provision of interchange facilities with walk, cycle, bus and cycle/ car parking provision and that the location of development be designed to mitigate any noise impact from increased train services.</p> <p>3. Policy BCS10 supports the Greater Bristol Metro Project (now MetroWest) the reintroduction of a local passenger rail service on the Henbury Loop Line; the policy sees this as one of several schemes that will form part of an integrated transport system and supports development.</p> <p>Both site options offer a 'positive' policy fit.</p>
<p>West of England Joint Local Transport Plan [JLTP]<sup>8</sup>.</p>	<p>The MetroWest programme is identified and supported JLTP.</p> <p>The JLTP revolves around five goals: reducing carbon emissions; supporting economic growth; improving accessibility; providing for a safe, healthy and secure population; and enhancing quality of life.</p> <p>The key strategy of the plan is to provide an affordable, low carbon, accessible, integrated, healthy, safe and reliable transport network.</p> <p>Provision of reliable public transport infrastructure is considered to be a vital mechanism for achieving this strategy; in particular, the plan supports a range of prioritised major transport schemes. One of these schemes is what is now called MetroWest.</p> <p>Both site options offer a 'positive' policy fit.</p>	

<sup>5</sup> [South Glos Core Strategy 2006-2027](#)

<sup>6</sup> [Cribbs Patchway New Neighbourhood Framework SPD](#)

<sup>7</sup> [Bristol City Core Strategy](#)

<sup>8</sup> [JLTP3](#)

<b>Policy Fit</b>	<b>1. East (new site)</b>	<b>2. West (former station)</b>
<p>The West of England Strategic Economic Plan<sup>9</sup></p>	<p>The SEP identifies MetroWest as one of the most significant investments the Local Enterprise Partnership could make to improve connectivity and accessibility for business and communities in the sub-region. A successful bid for top-up funding was submitted to government in 2014.</p> <p>Both site options offer a 'positive' policy fit.</p>	
<p>Equalities Impact Assessment</p> <p>Requirements include race, gender, disability equality, sexual orientation, religion or belief and age</p>	<p>An Equality Impact Assessment and Analysis has been undertaken; it shows a positive impact. The Assessment will be maintained and updated as the project progresses. The protected characteristic groups most impacted in relation to the nature of the MetroWest are those of 'Disability' and 'Age' (in this instance, particularly older age). At both sites, the required access arrangements, station car park and station platforms would accord with statutory accessibility standards.</p> <p>Both site options offer a 'positive' policy fit.</p>	
<p>The principal business objectives of MetroWest Phase 2 are as follows:</p> <p>a) To support economic growth, through enhancing the transport links to the Filton Enterprise Area, North Fringe, Yate, Temple Quay Enterprise Zone and Bristol City Centre.</p> <p>b) To deliver a more resilient transport offer, providing more attractive and guaranteed (future proofed) journey times for commuters, business and residents in the area, through better utilisation of strategic heavy rail</p>	<p style="text-align: center;">Both site options offer:-</p> <p style="text-align: center;">a) 'Positive' policy fit</p> <p style="text-align: center;">b) 'Positive' policy fit</p>	

<sup>9</sup> [Strategic Economic Plan](#)

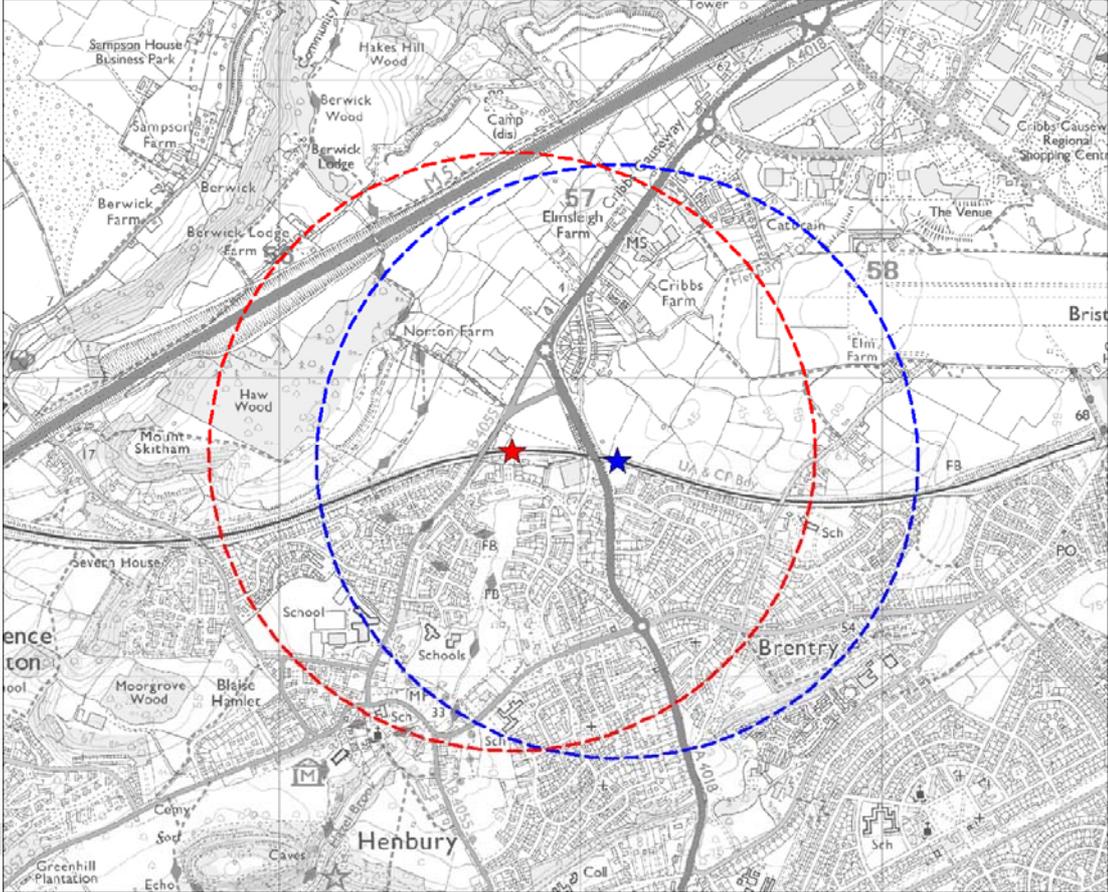
Policy Fit	1. East (new site)	2. West (former station)
<p>corridors from Yate and Henbury.</p> <p>c) To improve accessibility to the rail network with new and re-opened rail stations and improved service frequencies.</p> <p>d) To make a positive contribution to social well being, life opportunities and improving quality of life (along the affected corridors in particular).</p> <p>Supporting objectives are:</p> <p>e) To mitigate traffic congestion in the North Fringe and Yate corridor.</p> <p>f) To enhance the carrying capacity of the local rail network.</p> <p>g) To reduce the adverse environmental impacts of the local transport network as a whole.</p>		<p>c) 'Positive' policy fit</p> <p>d) 'Moderate positive' policy fit</p> <p>e) 'Moderate positive' fit</p> <p>f) 'Moderate positive' policy fit</p> <p>g) 'Moderate positive' policy fit</p>
<b>Overall policy fit</b>	<b>Both sites provide a 'Moderate Positive' to 'Positive' policy fit.</b>	

Environmental & Social Impact

3.4 The environmental & social impacts are shown below.

<b>Environmental &amp; Social Impact</b>	<b>1. East (new site)</b>	<b>2. West (former station)</b>
Carbon emissions; Change in total vehicle kilometres. Impact on carbon emissions, for construction and when operational. Total fuel used and fuel efficiency.	Forecasts of demand were produced for the Henbury Line stations as part of the North Fringe Stations Study (CH2MHILL, March 2014) <sup>10</sup> . On year of opening, 2021, just over 174,000 trips were forecast; however, the forecasts were not sensitive to the station site options for Henbury. It is anticipated that the catchments of both stations will be similar.	
Socio-distributional impacts and the regions.	The socio-distributional impacts are expected to be very similar for each station site and are as follows: <ul style="list-style-type: none"> <li>• Local Environment - some localised impacts for existing residents;</li> <li>• Well being – improved access by public transport to jobs and services;</li> <li>• User benefits –access to new, fast public transport service);</li> <li>• Personal affordability –fare levels would be comparable with other public transport services;</li> </ul> Impact on targeted regeneration - brings new rail access to the west end of the CPNN; Regional Imbalance – positive impact on competitiveness of local economy with the project forecast to provide a net increase in GVA of £85m.	
Local environment: Air quality; Noise; Natural environment, heritage and landscape; Streetscape and urban environment.	By providing access to a sustainable mode of transport, both options would contribute to meeting air quality targets. There would be some localised noise impacts at both sites with the introduction of new passenger services. There would be some local impact on the natural environment at both sites. The local landscape will be transformed by the adjacent CPNN developments; the selected site would be incorporated the landscape scheme for these developments.  The proximity of the station to ~25 existing and planned residential properties causes some localised environmental impacts streetscape and urban environment.	The station would have an impact on two existing residential properties, but would otherwise be surrounded by commercial office, retail or business land uses.

<sup>10</sup> [North Fringe Stations Study, CH2MHILL, March 2014.](#)

Environmental & Social Impact	1. East (new site)	2. West (former station)
<p>Well being: Physical activity; Injury or deaths; Crime; Terrorism; Accessibility; Severance.</p>	<p>The plan below shows the 1km ‘crow-fly’ catchments for both site options. An existing secondary school, several primary schools and Henbury local centre would be within walking distance of both sites, as well as the CPNN.</p>  <p>It is estimated that there would be in excess of 3000 <u>existing</u> addresses served by each site option. Emerging proposals from CPNN developers would increase the number of homes, business, schools and services within the catchment of both site options. Both options would be designed to minimise the threat of crime; and both options have no impact on severance.</p>	<p>The site offers good, all-round access for all modes of transport.</p> <p>The site offers reasonable, all-round access for all modes of transport; however, direct access to the south is constrained by the concrete works on the south-side.</p>
<p>Overall environmental &amp; social Impact</p>	<p>‘Positive’</p>	<p>‘Moderate Positive’</p>

Deliverability

3.5 The assessment of deliverability is shown below.

<b>Deliverability</b>	<b>1. East (new site)</b>	<b>2. West (former station)</b>
Strategic Case	Good to excellent fit between scheme objectives and policy.	
Economic Case	<p>The economic case for the scheme is reported in the Preliminary Business Case; because they share so many characteristics, the forecasts are not sensitive to location.</p> <p>The Henbury Line would need an additional 1 to 3 units, depending on whether a spur or loop service is chosen respectively.</p> <p>Localised environmental impacts could require mitigation.</p>	
Management Case	Both site options would need to secure the appropriate statutory consents (planning permission or TWAO), but both are in accord with the council's development plans.	
	All land required is under the ownership of Network Rail, the councils and the adjacent CPNN developer.	There might be a need to secure land from the adjacent concrete works for the loop station; if this cannot be secured by negotiation, use of compulsory purchase powers would be required.
	The station sits on a 1:120 longitudinal gradient, which falls out-with Railway Group Standards (max 1:500); hence, a derogation from Standards would be required for a loop station. A bay platform for a terminating spur service would be constructed in accord with Standards.	The station sits on a 1:264 longitudinal gradient, which falls out-with Railway Group Standards (max 1:500); hence, a derogation from Standards would be required for a loop station (although there might be extant 'grandfather' rights). A bay platform for a terminating spur service would be constructed in accord with Standards.
	The twin tracks at the proposed loop platform locations follow concentric LH circular curves (facing high mileage) of ~1210m radius. Inevitably the proposed platforms would follow the curvature of the track and the provision and maintenance of acceptable platform passing clearances and steeping distances would be a key element of the design proposal.	
Financial Case	<p>Station capital cost estimate range from £6m to £9m (outturn), depending on spur or loop and location.</p> <p>Station operating costs circa £150k per annum.</p>	
Commercial Case	Both site options have a strong case with patronage generated from existing and planned communities in the local walking/cycling catchment area, supplemented by links provided by existing and anticipated local bus services.	
	The site would be immediately to public open space, with existing	The site would be adjacent to a proposed local centre (with a mix

<b>Deliverability</b>	<b>1. East (new site)</b>	<b>2. West (former station)</b>
	and future residential land uses just beyond.	of land uses); to the south is a concrete works.
<b>Overall deliverability</b>	<b>‘Positive’</b>	<b>‘Moderate Positive’</b>

Overall Assessment

3.6 A summary of the overall assessment is shown below.

<b>Overall Assessment</b>	<b>1. East (new site)</b>	<b>2. West (former station)</b>
Policy fit	Both sites provide a ‘positive’ to ‘moderate positive’ policy fit.	
Environmental & social Impact	‘Positive’	‘Moderate Positive’
Deliverability	‘Positive’	‘Moderate Positive’

## **4 Conclusions**

- 4.1 Both Henbury station site options perform well in the qualitative assessment but there are a few factors that differentiate the sites, namely:
- The East site would have better access to areas to the south and east;
  - Access from the south to the West or former site is constrained by the cement works on the south-side of the railway line;
  - The West site would have a lesser impact on existing residential properties.
- 4.2 On balance, it is considered the East or new site represents the best option. It is proposed that the site options be subject to further stakeholder and community engagement to determine if there is a strong local preference. Pending the outcome of this, both sites should continue to be safeguarded in planning terms until the local authorities identify a preferred site for input to GRIP3 (detailed design).

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