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The proposed urban extension in Sutton Coldfield looks to deliver 5,500 dwellings and 80 hectares of employment land. The traffic impacts associated with the development are compounded by the limited radial road access and associated congestion.

Opportunities have been identified to reduce the traffic impacts of the development, by encouraging more sustainable transport choices, including bus and rail options. This study investigates the potential for new or enhanced rail services to support the delivery of the development by collating and updating previous work on rail in this area, enhancements explored include:

- Reopening of Sutton Park line (freight only) to passenger services on an hourly and half-hourly frequency;

- New station on Water Orton corridor, with existing services; and

- Cross-city (north) service and car parking capacity enhancement.

The review suggests the following:

- It is possible technically to re-open the Sutton Park Line to passengers. Required infrastructure works would include:

  - New stations on the Sutton park Line;

  - Improved junction capacity between the Sutton Park Line and the Water Orton rail corridor; and

  - Confirmation of terminal location in the City Centre:

    - New Street – possible post HS2, and requires prioritisation of Sutton Park Line services over other regional services in deciding how any spare rail capacity post HS2 should be allocated.

    - Moor Street – possible via construction of chord lines to link services from Bordesley. These could be provided as part of wider rail aspirations linking

## SECTION 1

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Birmingham City Council (BCC), as part of its Draft Development Plan (published in 2013), is proposing an urban extension at Langley, Sutton Coldfield, in order to meet expected increasing demand for housing

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the enhancement of the cross-city line (north) - to encourage mode shift and reduce congestion along A5127 and local roads, as well as to enable improved road-based public transport access.

The opportunities to enhance rail provision in North Birmingham identified in this report, would likely also benefit the proposed regeneration of Sutton Coldfield Town Centre, outlined in Draft Birmingham Development Plan (early 2014).

This report will consider the previous work on the feasibility of running new local passenger services along the Sutton Line; updating it to reflect subsequent investment in the rail network, both along the Birmingham-Water Orton corridor and more widely across the West Midlands, where these schemes have had a relevant impact on the area of interest.

Consultation has been conducted with representatives from the local rail industry (Network Rail, Train Operating Company and Centro ITA) to explore committed and proposed schemes that may impact on the reintroduction of passenger services on the Sutton Park Line.

This report will focus on issues identified that may impact on the feasibility of reinstating the passenger service, including cost risks for new infrastructure, capacity for train paths to run additional services and to stop services at new stations, rolling stock, likely timescales for delivery, an identification of the required processes to delivering such infrastructure and a review of the previous value for money work.

## SECTION 2

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In 2009 CH2M HILL (as Halcrow) undertook

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The key assumptions considered for the 2009 study included:

Water Orton area resignalling occurs (2010) – full scheme implemented;

Walsall and Sutton Park line resignalling occurs (2012);

Assessment based on assumed level of freight for 2019;

Leicester services diverted to Moor Street station;

Wilnecote and Water Orton stops removed from 2009 Cross Country services; and,

Walsall – Stourbridge freight line re-opening.

Key findings of the 2009 study:

Due to the lack of capacity at New Street Station to accommodate new services, Moor Street Station was identified as the potential terminus station. However this required significant construction of new infrastructure (capital cost of £120m-2008 prices) to connect the Water Orton Corridor with Moor Street station (Camp Hill and Bordesley Chords).

The main benefits of the proposed scenarios are derived from the Tamworth line services.

The Sutton Park line scenarios weakened the business case for the overall scheme (both Tamworth and Sutton Park lines), with demand for the potential service at SP line stations not sufficient to offset capital and operational costs of scheme.

All proposals require the increase in capacity on Water Orton corridor and Camp Hill chord infrastructure enhancements.

~~Demand~~ Demand at stations more pronounced at locations closer to city centre, where journey times are more competitive against private car. Demand reduces along the Sutton Park line, the further from city centre, due to competition from already established Cross-City line (speed and frequency of service) and the extended journey times compared to private car.

However, the resignalling works have not occurred in these timescales, with the Water Orton resignalling original works de-scoped. Due to this, the service assumptions were no longer feasible. Investment in the Water Orton corridor is now being carried out, but only replacing existing life-expired signalling assets, not resignalling the section to provide more capacity along the corridor.

Following the 2009 study, Centro produced a Paper (23.11.2009, Doc# 356773) summarising the findings of the original study to Transport Strategy Committee. The

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## SECTION 3

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Moor Street Station has been considered as a terminus for these potential passenger services, due to capacity constraints at New Street Station (discussed in sub-section 3.1.2 below). Moor Street Station has the potential to be able to accommodate passenger services, if access can be gained to the station from the Water Orton corridor. However if further enhancement of current levels of service or introduction of additional services occurs, there may also be a requirement for a fifth platform to cope with demand. Implications of capacity at Moor Street Station are outlined in section 4.

As mentioned above, to be able to access Moor Street Station as a terminus, significant infrastructure is required to link the Water Orton corridor to the station. Proposals have been identified, known as the Camp Hill chords, which permit access from Kings Norton along the Camp Hill lines to Moor Street Station. A further double-



## SECTION 4

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The Sutton Park line runs from a junction with the Walsall to Rugeley line at Ryecroft Junction to the north west of Birmingham to a junction with the main Derby to Birmingham line at Castle Bromwich Junction, about 1.5 miles west of Water Orton station. The line is largely double track throughout except for the final section from Park Lane Junction where it forms a triangular junction with the Derby route so trains can travel to or from the west or east by single track chords.

The line has been used as an important freight avoiding route to the north and east of the Birmingham city centre stations since its passeng

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make use of the available capacity, but are



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there are already a considerable number of demands on that capacity for inter-regional services, and the feelings in discussion with the industry are that it is not clear that new local services such as the Sutton proposals would have a strong call on the terminal slots.

The capacity constraints of New Street Station have led to the consideration of Birmingham Moor Street as an alternative origin/destination for the proposed service. Although Moor Street Station (which is provided with two through- and two bay-platforms) is close to New Street, there is no convenient rail access between the Water Orton Corridor and the station (which is situated on the former Great Western route to Birmingham Snow Hill and Wolverhampton). Therefore, to gain access to this station, a new double track chord line is required, possibly in conjunction with the Camp Hill Chords (which would permit access to and from Moor Street from the Camp Hill line from Kings Norton) and the cost of the combined infrastructure at 2008 prices was estimated to be £120m (closer to £150m at 2013 prices).

It is apparent that if it was possible, particularly with further infrastructure enhancements to identify an hourly or half hourly path on the Water Orton corridor, the significant constraint is where the trains terminate. It is widely recognised that New Street is working at capacity already and any disruption can already cause significant problems at this location, so this leaves the option of a new route to Moor Street. Moor Street terminal bay platforms currently host an approximate hourly service from Chiltern Railways so this is likely to leave one platform free. However, if the potential Camp Hill service is introduced, it would utilise the remaining bay platform, which could create difficulties at Moor Street in terms of capacity, unless additional platforms are brought into use at this location.

Significant developments to the local network infrastructure can enable these new services to be provided but the cost of the infrastructure needs to be weighed up against the frequency of service which could ultimately be offered to determine the benefit to cost ratio.

Given that there is limited scope for a variety of reasons, to introduce a new passenger service on the Water Orton corridor, consideration could be given to introducing a stop at a new station on the corridor between Water Orton and New Street. As outlined, this route is used by six passenger trains per hour per direction plus some empty coaching stock and a number of freights. Therefore, if a new parkway type station was to be provided in the vicinity of Castle Bromwich or the Fort, it is necessary to review the potential impacts to the local operation of introducing a new station stop.

The mandatory timing points (the principal timing locations in a timetable or graph) for this section of the route are at Water Orton and Landor Street Junction. The run time for a train passing Water Orton to passing Landor Street is six and a half minutes. Adding a stop at a new intermediate station would extend this running time by the additional time taken to decelerate to rest, the allocated dwell time (either half a minute or a minute) plus the time taken to accelerate back to line speed. Typically, a train braking to rest will take about half a minute longer than the time it takes to pass at speed (depending on prevailing line speed and other factors) and for acceleration, a further half to one minute is required. Therefore, the additional time resulting from a half minute stop is about two minutes, so the Water Orton to Landor Street time becomes eight and a half minutes (and equivalent in the opposite direction) which means that many of the carefully planned movements across key junctions and on core line sections will no longer be achievable.

It is not critical to stop all trains at a new station but if a half hourly service was required (for example) then two of the six trains would need to call and retiming two could have implications for key junctions, platform occupation and stopping a train amongst through fast trains means the fast trains need to run further apart, so even without a stop in their schedules, journey times are affected.

The train graph extract shown in Figure 4-3 shows the approach routes to and from New Street in two different colours:

the red lines show trains on the "Derby lines" and;

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the blue lines show trains on the "Stour lines" (approach from Coventry).

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The previous study identified the capital costs (in 2008 prices) for the Camp Hill Chords as £120million, this includes for grade-separated chords and allied Moor Street Station works. Additional costs were outlined for all stations, including Sutton Park (£2.85m), Walmley (£2.5m) and Minworth (£3.85m).

As briefly discussed earlier, capital costs have risen due to general trends in construction costs and land-take costs. It is estimated that the Camp Hill Chords and associated costs will more likely be around £150million. Capital costs of stations have also increased, with a two-platform station costing approximately £5million.

As the proposed Sutton Line service that has been identified in this study would operate between Moor Street and Sutton Park stations, rather than Moor Street to Aldridge/Walsall in the previous study, an hourly frequency would require one train unit. woro with a (h)3t3( )9(fr8(n)3(g)-6( )JTJr)8(off7H.o0 0 1 2351 72.0o) 0

## SECTION 5

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Delivering rail projects is not straight forward for Local Authorities. The Rail industry has its' own governance and approvals systems that need to be adhered to, regardless of who is paying any capital

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The above Case Study provides an illustration of the processes required. For the Sutton Park I

## SECTION 6

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This report gives a brief overview of the considerations to offering rail services to support developments in the Birmingham Eastern Fringe.

A new passenger service between the Sutton Park line and a central Birmingham station. There