High Speed Rail
London to the West Midlands and Beyond

A Report to Government
by High Speed Two Limited

PART 6 of 11
3.6 West Midlands principal station and approaches

Introduction

3.6.1 In the West Midlands our method for determining the preferred scheme was similar to that adopted for London, although necessarily adapted to account for the different circumstances that apply in the region. A particular question was whether a principal West Midlands station would be on a spur off the main high speed line or a through station on the line itself – an issue that does not arise in London.

3.6.2 In specifying a region, rather than city, our remit also left open the question of in which part of the West Midlands a principal station should be located. An initial long list of station options considered station locations in the wider West Midlands area, including Wolverhampton, Walsall, Birmingham International and Heartlands. However, early analysis of demand figures demonstrated clearly the importance of serving Birmingham city centre in order to capture significant passenger flows. With the endorsement of our West Midlands working group, sites outside central Birmingham were therefore ruled out as potential locations for a principal West Midlands station. These locations were retained, however, for consideration as part of the work to identify a possible interchange station, which is described in more detail in the following section.

3.6.3 Having established that a principal station was required in Birmingham city centre, the decision between locating that station on a line through Birmingham, or on a spur into Birmingham, was driven by the feasibility of construction, as well as a range of business case criteria, including the differential costs, journey times and sustainability impacts.

Terminal stations in the West Midlands

3.6.4 A terminal station in the West Midlands would require a minimum of three platforms to accommodate the new high speed services to London and associated empty workings to and from a rolling stock depot. Initially we assumed four platforms at the West Midlands terminal stations, a decision based on early demand and timetabling assumptions. The option sifting stages were carried out on this basis.

3.6.5 During the course of the year we continued to work on ensuring that the design of HS2 would accommodate the potential long term aspirations for a network. Consequently we concluded that for the new station to be able to accommodate regular services from Birmingham to locations other than London, particularly as part of a longer term strategy for a high speed network, the station would require six platforms. As a result, the final options we present for Government to consider (and which we have appraised) are based on a six-platform station footprint.
Through stations in the West Midlands

3.6.6 A through station in the West Midlands, located on the principal high speed line north would require a different footprint. As the majority of trains to/from London would pass through Birmingham non-stop at full speed on their way to destinations further north, deceleration lanes would be required on either side of the station in order to minimise the impact upon the route’s capacity.

3.6.7 We were unable to identify any surface location for such a configuration, so a route through Birmingham in this way would need to be approached by tunnel, with the station itself in a sub-surface box, similar to Stratford station on HS1. The station box would be approximately 1 km long and 50 metres wide. There would be secondary boxes located approximately 2 kilometres either side of the main station box, to accommodate the pointwork necessary for the deceleration lanes. In order to maintain access for maintenance of high speed point work, these boxes could not be covered over and built upon.

Creation and initial sifting of the long list of station options - Stage One

3.6.8 The long list of station options was again generated by reviewing the scope for existing station sites to accommodate a high speed station, either within the existing footprint or with additional adjacent land, and other possible sites that were identified either by stakeholders or as a product of our own research. Some options were identified as we progressed through the sifting process. These options were also reviewed for compliance with the initial sift criteria, albeit at a later date, and so they are included here. Figure 3.6a illustrates (in dark blue) those options which were sifted out at Stage One.
As with the London stations, the long-listed options were assessed against the following high-level feasibility criteria:

- Overall fit with the remit.
- Operational/engineering feasibility – an initial view on the ability to construct a station on the site and the possible associated impacts.
- Demand – a non-modelled broad assessment of likely scale of demand.
- Cost – at the level of a basic order of magnitude.
- Other relevant factors, including obvious potential environmental constraints.
3.6.10 Of the long-listed options, seven were removed in the initial sift, as indicated in blue in the diagram above.

- **Snow Hill options.** Stations in the Snow Hill area of Birmingham, where a classic line railway station already exists, were not pursued because we concluded they were not feasible. Gauge-constrained tunnels at either end would require rebuilding, which might be impossible given the shallow nature of the more southerly Snow Hill Tunnel and the existing infrastructure built above the tunnels on the surface. The proximity to St Chad’s Cathedral was also considered to be a possible limiting factor.

- **New Street (Through).** A through station at New Street was ruled out on the grounds that it would prove incompatible with the retention of the existing junctions to the east and west of New Street station, severely restricting regional rail access to the city centre. It was therefore deemed operationally unacceptable.

- **Wolverhampton, Walsall, Birmingham International and Heartlands.** We ruled out potential locations outside Birmingham city centre on the basis that they would lack sufficient demand and connectivity to be viable as principal stations. They were referred for consideration as possible interchange stations (for more information see section 3.7).

**Determining the short listed options – Stage Two**

*Figure 3.6b Possible station locations in Birmingham*
3.6.11 Figure 3.6b is provided to illustrate broadly the location in Birmingham of the various options under consideration in the second-stage sifting process.

3.6.12 The remaining options were investigated and assessed at a further level of detail as part of the second stage of option sifting. As with London station options, the criteria applied as part of the second stage sifting were as follows:

- Costs – based on an initial evaluation of the high-level scope with a generic unit rate applied.
- Feasibility (wider impacts) – this covered engineering and construction feasibility, passenger dispersal onto existing transport networks and the potential disruption to and displacement of the existing network.
- Environmental, social and spatial considerations – using the simplified AoS framework.
- Demand – any relevant demand assessment, where thought to be material.

3.6.13 At the second stage sift, we took forward options at Moor Street, Curzon Street, Fazeley Street and Warwick Wharf, as shown in Figure 3.6c.
3.6.14 Five options were removed at this stage:

- **Moor Street (Terminal) West.** The option of a terminal station on the South West side of the existing Moor Street station was not pursued further because of its relative performance against its comparator option on the North East side, which was stronger in terms of constructability and regeneration potential and had fewer environmental impacts.

- **Curzon Street (Terminal).** The option for developing an elevated station at Curzon Street was considered against an elevated station at Fazeley Street. Both station options would be developed on land within the ‘Eastside’ regeneration area, although the impacts of the more easterly Curzon Street would be less disruptive. Curzon Street was considered inferior as the station concourse would be significantly further from the heart of the city, and would offer worse connectivity with the existing Moor Street and New Street stations.

- **Wholly new subsurface station options.** Options for constructing new subsurface stations in a cavern underneath Birmingham City Centre were not pursued on the grounds that they would be prohibitively expensive, given that viable alternatives existed which would not require subsurface construction.

- **Proof House.** The option of a station on an east-west alignment in the area of Birmingham near Proof House was ruled out on the grounds that it was significantly inferior to the nearby Warwick Wharf option, especially in terms of heritage impacts, given its impacts on nationally listed buildings (including Proof House itself) and their setting within the local Conservation Area.

- **New Street (Terminal).** New Street’s central location in the heart of the city, and excellent onward rail links to the wider region make it ostensibly a very attractive prospect for high speed rail services. We carried out a detailed feasibility study at New Street which led us to conclude that an option at New Street should not be pursued further.

3.6.15 The remaining five options were analysed in greater detail. The case for or against any of the station sites considered has been determined as much by the ease with which the line could serve them as the merits of the site itself. As a hypothetical example, a cheap station site, easily accessible to passengers but with a highly difficult, maybe largely tunnelled approach route, may yield benefits which are all but eroded by the cost of reaching it. The analysis of potential stations must go hand-in-hand with analysis of the possible routes to and from them.

3.6.16 Accordingly, the next section reports on the process undertaken to identify the best route options for crossing the West Midlands, accessing Birmingham and ultimately rejoining the WCML, before picking up the station sifting process once more to present a comprehensive picture of the overall options for HS2 in the West Midlands.
**New Street Station**

New Street station currently operates at close to capacity, requiring all of its thirteen platforms, including platform sharing, to provide for the full range of services on any typical day. The neighbouring station at Moor Street is already being expanded to cater for planned development of the West Midlands local rail network. New Street is bounded by tunnels at either end and city infrastructure on either side making expansion to accommodate an additional high speed train network impractical without displacing a significant proportion of existing services.

In order to provide for high speed services (which would approach New Street from the east) and yet still maintain through operations for some classic services at the western end, a platform formation similar to that depicted below would be required. Even this only gives three full length high speed platforms to the north side, in place of existing platforms 1-3, sufficient only for services to London. One of these would be of sub-standard width for unrestricted passenger movement and all three would extend outside the existing station boundary to the northwest, requiring demolition of buildings. Two further platforms of up to 341m, giving some scope for the anticipated wider network, could be created by removing the existing platforms 4, 4C and 5.

Under this scenario, the overall capacity for classic services at New Street would be severely reduced from today’s levels. In order solely to maintain existing service levels into the centre of Birmingham (leaving aside the prospect of growth), an additional new station (of possibly 7 platforms) would be required elsewhere in the city centre.

Additionally, the significant engineering changes to New Street and its tunnelled approaches would necessarily be very expensive. The tunnels to the east of New Street would need to be lowered and widened to achieve the desired European gauge clearance. The station area and approaches in each direction would require resignalling and remodelling to maintain access for remaining classic services. Levels of disruption during construction would be very significant over a number of years.

The total costs of converting New Street for high speed use, while also maintaining current capacity for classic line services was estimated at around £1.6bn, exclusive of risk and optimism bias.
Creation and sifting of the West Midlands approach routes

3.6.17 Figure 3.6d illustrates the range of routes plotted and investigated during the year. Mindful of our remit to provide services to the north by reconnecting HS2 with the WCML, and the decision we took to serve Birmingham city centre as a prerequisite, a range of options was generated, each falling into one of the following three broad categories:

- Routes around Birmingham, to the East and to the West.
- From the routes around Birmingham, spurs into and out of Birmingham city centre.
- Routes directly through the city centre.

3.6.18 As with routes in and around London, in urban areas we started from a position that only existing transport corridors or new tunnels should be considered as viable route alignments – rather than large scale land clearance for an entirely new surface route.
3.6.19  The various options considered are shown in Figure 3.6d. Of these, many were not pursued beyond this sifting stage (indicated in dark grey):

- **Routes around Birmingham to the west.** Routes to the west of Birmingham were not pursued on the basis that they offered no clear advantages for accessing the city centre and presented significant environmental and technical difficulties, together with longer anticipated journey times, especially in connecting back on to the WCML north of Birmingham. Should the Government in the future wish to extend the line beyond the West Midlands, this time penalty would be built in to any future network.

- **Routes through Birmingham on the western side.** Two routes through the western area of Birmingham were examined, using a mixture of tunnelled and surface alignments. Both were pursued no further for the same reasons as above.

- **Several routes through the centre of Birmingham.** The analysis undertaken at this stage allowed us to conduct several pairwise comparisons which in turn meant some options through the centre of Birmingham could be excluded, for reasons of journey time or environmental impact, leaving the single best performing route to move forward to the next stage.

- **An entirely tunnelled route into Birmingham.** No further work was carried out on this option, primarily due to the considerable cost penalties when considered alongside other viable but less costly alternatives.

3.6.20  Following this round of option sifting, the remaining options fell into essentially two categories. For accessing the centre of Birmingham, three options remained all of which were on the surface (illustrated in Figure 3.6e in dark green below). For rejoining the WCML, there were a further three options (illustrated in shades of blue). One was to head north and rejoin the WCML through the centre of Birmingham, largely in tunnel, and two options remained for skirting round the city to the east, with a ‘delta’ junction providing access to the city centre.
3.6.21 At this stage all the options for accessing Birmingham could be made to work with one or more of the remaining station options. Given the interdependence between stations and their approaches in the West Midlands, they are considered together from this point forward.

Selecting the preferred and alternative options - Stage Three

3.6.22 From the shortlist, the selection of a preferred option, with alternatives, was guided by the following criteria:

- Construction and operational impacts.
- The Appraisal of Sustainability framework.
- Costs.
- Economic analysis (where relevant, for example including journey time benefits).

![Diagram showing the station sifting process - Stage Three](image)

**Figure 3.6f West Midlands station sifting process – Stage Three**

3.6.23 As indicated in blue in Figure 3.6f, the following options were sifted out at this stage:
Chapter 3: Determining the Preferred Scheme

Through versus around Birmingham

3.6.24 A critical question underlying much of the West Midlands option sifting was whether or not Birmingham should be served by a through station directly on the main HS2 line or by a spur off the main line, which itself would pass around Birmingham on its way to reconnect with the WCML further north.

3.6.25 We have been able to answer that question only after assessing the implications of each alternative in terms of environmental and planning impact, cost and journey time (as a proxy for benefits to transport users). The prospect of routing HS2 through Birmingham (and thereby constructing a through station at either Moor Street or Curzon Street) was ruled out for the following reasons:

• As explained previously, a through station in Birmingham city centre would require the construction of three open boxes of considerable size. The station box itself would bear comparison with that built for Stratford International station on HS1, illustrated in Figure 3.6g. The townscape and land take implications of these three open boxes in the middle of a city centre were thought to be unacceptable.

• While a through route may offer better journey times into the centre of Birmingham, assessment of the options suggested no significant time-saving to through-running services. Indeed, due to speed restrictions through tunnels, options that take the line around Birmingham to the east appeared to offer slightly faster like-for-like journey times. The cost information available at this stage of the project, which although not robust enough to be conclusive on its own, suggested a marginal difference in favour of a route around Birmingham.

3.6.26 For these reasons a route through Birmingham city centre, and with it the two options for through stations at Moor Street and Curzon Street, were not pursued any further. Of the remaining options, the approach to Birmingham through the Solihull corridor was compatible only with a terminal station at Moor Street, and the Coventry corridor and Water Orton approaches compatible with both the station options at Fazeley Street and Warwick Wharf.

Moor Street terminal station and the Solihull corridor

3.6.27 The station and approach `package' of Moor Street and the Solihull corridor was also pursued no further at this stage, for the following reasons:

• The south east/north west alignment into the terminal station effectively rules out the prospect of future high speed services north from Birmingham. High speed trains departing Moor Street for Manchester, for example, would need to travel south down the spur in order to rejoin the main HS2 line and travel northbound round the east of the city centre.
• While the Solihull corridor was less costly, it was inferior to the Water Orton alternative - and comparable with the WCML corridor – in terms of its environmental and social impacts, particularly in terms of noise, vibration, air quality (due largely to its proximity to densely residential areas) and waste generation.

• The proposed station at Moor Street performed poorly against the option at Fazeley Street in terms of its impacts on the existing buildings and townscape. In these respects it was broadly comparable with the Warwick Wharf option. There would also be disruptive effects on existing rail users.

**Outer delta junction with the Water Orton corridor**

3.6.28 Following the initial round of sifting, two options for connecting the Water Orton corridor to a main route through the West Midlands remained, each by a ‘delta junction’ offering north and southbound connections. At this stage of sifting a decision was made not to pursue the outer delta option, which was considered inferior to the inner delta due to its broader sustainability impact and the fact that it was incompatible with an interchange station near the NEC, which was being considered in parallel (see section 3.7). The alternative route to rejoin the WCML was retained and, together with the Coventry corridor access into Birmingham, forms an alternative way of passing through the West Midlands.

3.6.29 As a result of the short list sifting, we were left with a preferred package of options in the West Midlands, with alternatives. These are described in the remainder of this section and summarised in Figure 3.6h above. Either station option would be feasible with the preferred and alternative routes. In the following pages the two stations are described as if served by the preferred route into Birmingham.
Preferred Birmingham Station – Fazeley Street

Design, construction and cost

3.6.30 Our preferred station site in Birmingham city centre is at Fazeley Street. The site lies immediately to the north of the existing WCML into New Street station and is, at present, predominantly derelict. The station would be an elevated structure, with a concourse at the western end in the city centre, adjacent to the existing Moor Street station, with which the concourse could be connected. The proposed platform layout is shown in Figure 3.6i.

![Figure 3.6i Proposed Fazeley Street station platform layout](image)

3.6.31 The station, including the platforms and approach tracks, would all be constructed on new viaduct (approximately 450m in length) adjacent to the existing brick viaducts. These viaducts vary in height up to approximately 10m above current road level and in the region of 2m above the parapet of the current WCML entrance to New Street. We expect that the station would be fully enclosed with noise barriers incorporated along the northern perimeter wall.
3.6.32 Importantly, Fazeley Street could be built with minimal disruption to the existing rail network and with no displacement of classic rail services. Design will be critical to creating a landmark station within Birmingham. Predominantly on viaduct, the station could be constructed from steel, concrete and glass with the main platforms elevated on columns thereby maximising space for through-access below the station and preventing severance of existing road links. This approach would also permit an easier form of construction through the use of light weight modular systems combined with traditional construction techniques.

3.6.33 We estimated the cost of constructing the Fazeley Street station to be £235m. This includes all contractor costs but excludes location-specific construction risks, ancillary items, environmental mitigation, land/TOC compensation, project costs and any route-wide or programme level risks which are included in the overall scheme costs.

**Passenger benefits and dispersal**

3.6.34 The site is as close to the city centre as we have been able to find among viable options. Creating easy access between a new high speed terminal and the existing New Street station is critically important given the latter’s role as a rail hub for the wider city and West Midlands region. Discussions with Centro (the West Midlands Integrated Transport Authority), Advantage West Midlands and Birmingham City Council on the development of improved access between the two stations have identified options for joining the concourses at New Street (post its development) and Fazeley Street through the use of people movers and travelators.

**Sustainability**

3.6.35 In sustainability terms Fazeley Street was on balance considered the best performing option. The adverse impacts largely concern townscape and heritage, but these are substantially less than those associated with the alternative at Warwick Wharf. At present the site is mostly vacant, although the proposed footprint would result in the demolition of three Grade II listed buildings and some modern structures. There would also be a potential visual impact on the setting of a number of other listed buildings, but these effects may be mitigated with revisions to the station footprint.

3.6.36 The Fazeley Street option would have a significant impact on planned development, which we have discussed at length with members of the West Midlands working group. There would be a major adverse impact on current strategic regeneration plans for the Eastside area, which overlaps the proposed station site and incorporates proposals for a mixed use scheme of around 130,000m², including office, retail and leisure space, a Birmingham University development as well as a stretch of open park.

3.6.37 While different elements of the Eastside scheme are at varying stages of the planning process, only two of these elements have been constructed. Proposals for Fazeley Street would require demolition of one of these – the Curzon Gate student accommodation development. However, this is not considered to be a major long term impact on the community since the block is only for short-term accommodation, albeit for over 700 residents.
3.6.38 A new station at Fazeley Street would nonetheless offer the opportunity for redevelopment in Eastside, albeit over a different time-scale and of a different kind than currently planned. If Fazeley Street station were to be pursued, the close integration of its design with a revised plan for regeneration in the area would be an imperative. There would also be scope for development on top of the proposed station structure.

3.6.39 The approach to Fazeley Street also crosses and shades a locally important canal, however this may offer the opportunity to improve canal side habitats. Early assessment of noise indicates properties near the station would not experience a highly noticeable increase in noise. Figure 3.6j illustrates the station footprint.

Figure 3.6j Proposed Fazeley Street station footprint
Preferred West Midlands routes – the Water Orton corridor and inner route through the West Midlands

**Design, construction and cost**

3.6.40 A map of the preferred route is provided in Figure 3.6k. From the Balsall Common area, the route would continue northwards, crossing over the M42/M6 on an elevated structure; this would replace the existing A452 trunk road which would require relocation to the north west of its current position. A four track section would curve around Coleshill with two tracks peeling off to pass at grade to the west of Water Orton and onto the existing four track corridor into Birmingham. The surface route, allowing speeds of up to 200kph, would continue into Birmingham displacing two of the current four tracks and passing under the M6 and A4040; at these locations significant modifications to the existing highways would be required in order to clear the route for the GC gauge rolling stock. As the route passes through the Heartlands area and Washwood Heath the alignment would be elevated to allow the tracks to cross over the railway and canal and enter the throat of Fazeley Street station.

![Figure 3.6k West Midlands preferred routes](image-url)
3.6.41 From the point at which two tracks leave to enter Birmingham, the main line north would weave a route through the M6, M42 and M6 Toll Road. This interaction between the railway and motorway network would require a significant number of highway works. As far as practicable the route would run alongside or over the trunk and motorway system on a number of viaducts. However, as the track splits and approaches the existing Water Orton corridor the current M6 would require re-alignment. Implementation of these works has been discussed, at a theoretical level, with the Highways Agency and we believe that the majority of the work could be undertaken without significant disruption to the transport system in this area.

3.6.42 As the line of route passes around Water Orton the alignment would take it over the existing M42/M6 Toll on a viaduct. Though no major works are expected to the physical motorway network in this vicinity the construction of the necessary supports and viaduct spans would create some disruption to the existing transport network. The route would pass over the M42, north of Coleshill and use viaducts over existing flood plains. A permanent diversion of the A4091 would be required. East of Lichfield, the preferred scheme would be elevated on a viaduct to cross over the A38, the existing railways (including the WCML) and the A5127. The viaduct would also go over the Enterprise Industrial Park just to the south of the WCML. The preferred scheme would then run parallel to the WCML, connecting with it north of Lichfield. A grade separated junction would be required in the Elmhurst area to effect this connection.

Sustainability

3.6.43 This route would have few adverse effects on natural and cultural resources; the impacts would be principally associated with the historic and water environments. The route would comprise some 4km of viaduct along a route length of 7km, where areas have been identified as highest risk of flooding. As with many sections of route within the overall scheme, the section of line through the West Midlands would result in adverse impacts to the communities through which it passes, particularly due to operational noise, vibration and demolitions. Overall, however, the approach is preferable to an approach to Birmingham along the more densely populated western or southern routes. Noise and vibration impacts can to some extent be mitigated and the required land take and demolitions would be reviewed and possibly reduced through subsequent design steps.

Alternative Station – Warwick Wharf

3.6.44 The alternative site for a Birmingham station is in the Warwick Wharf area, to the south of the WCML as illustrated in Figure 3.6l. Like Fazeley Street, the station would be an elevated structure and, although on a different alignment, the concourse would be in a similar position within the city centre, with similar access to the stations at Moor Street and New Street. We do not actively recommend a station site at Warwick Wharf, but present it here as an alternative for the purposes of future consultation.
Design, construction and cost

3.6.45 As with the proposed station at Fazeley Street, the station would be elevated on a viaduct with a concourse area bridging the existing WCML and opening out onto Moor Street. The topography of land in this area is significantly more challenging than at Fazeley Street, with a significant land fall immediately to the south east of the station. This will mean that the station itself would be elevated on viaduct some way above the current street level.

3.6.46 We estimated the cost of construction at £260m. This includes all contractor costs but excludes location-specific construction risks, ancillary items, environmental mitigation, land/TOC compensation, project costs and any route-wide or programme level risks which are included in the overall scheme costs.

Passenger benefits and dispersal

3.6.47 A station at Warwick Wharf would have broadly the same passenger benefits as Fazeley Street, given the similar location of its concourse within the city centre. The immediate approach into the station is on a slightly tighter curve, which would restrict speeds and lengthen journey times slightly.
**Sustainability**

3.6.48 There would be a major impact on the local townscape and the built character of the local area, since the station site falls inside the Warwick Bar Conservation Area – one of the last areas in Birmingham of low density industrial heritage. A station on this site would significantly affect the street pattern and built character of this area as well as that of the adjacent Digbeth, Deritend and Bordesley High Streets (Digbeth/Deritend Conservation Area). It would directly impact a number of historic industrial buildings and locally important landmarks. It would also have a visual impact on the setting of a number of nationally listed buildings and create severance by isolating part of the Conservation Area from the remainder. The aggregate impact would be hard to mitigate and for that reason Warwick Wharf compares unfavourably to the Fazeley Street option. Figure 3.6m illustrates the station footprint.
Alternative West Midlands routes – the WCML Coventry corridor and outer route through the West Midlands

3.6.49 We have also considered an alternative route into Birmingham and through the West Midlands. Again, we consider this route substantially inferior, but present it here [illustrated in blue, in Figure 3.6n] for the purposes of future consultation.
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Design, construction and cost

3.6.50 The alternative route would join the WCML Coventry corridor east of the existing International Station and M42 motorway, with the tracks aligned within the existing rail corridor. The route would run to the north of the existing Birmingham International Station. At this point additional land would be required to accommodate the additional tracks and alignment to allow a 200kph line speed. From Birmingham International the route follows the current corridor until Stechford where it would rise above the junction and WCML, re-joining the tracks to the west of Stechford. As the route approaches Soho Junction the line would be elevated above the existing tracks and turn into either Fazeley Street or Warwick Wharf. This alternative option provides a similar approach to Birmingham.

3.6.51 To the east of Birmingham, the line would cross the M6 south of Coleshill. The line would curve to avoid the village of Whitacre Heath, Shustoke Reservoirs and the SSSI of Whitacre Heath Nature Reserve, with speeds restricted to 300kph. The route would rejoin the WCML north west of Tamworth, avoiding the settlements of Middleton, Bangley and Mile Oak, as well as Drayton Manor Park and Hopwas Hays Wood.

3.6.52 Accessing Birmingham via the Coventry corridor would restrict the value of northbound services from Birmingham, either as part of the Day One service, or – more significantly – as part of a longer term network of high speed lines. While such services could access the principal HS2 route north from the Coventry corridor, they would initially have to travel south to do so, lengthening journey times.

3.6.53 Adopting the alternative route through the West Midlands would also limit the potential of an additional station, which as we explain in the next chapter would benefit from being located as an interchange with the existing Birmingham International station, airport and the National Exhibition Centre. In order to make the curve onto the northbound principal line, the whole route alignment would be pushed out to the east, further away from the airport and associated interchange opportunities. There is no obvious site to place a Birmingham Interchange station on this route with comparable connectivity. While it may be possible to site such a station on the actual corridor into Birmingham, this would prevent northbound trains from London from calling at the interchange which might, in the longer term, prove an attractive possibility.

3.6.54 The current Coventry corridor into Birmingham is two tracks, although historically sections of the route from Birmingham International through to Stetchford had been three. The intention under this option would be to widen the north side of the existing corridor using either existing rail land or through local acquisition. The installation of additional tracks alongside the WCML pair will create a significant interface issue and we expect this to entail significantly more disruption to existing services than the Water Orton route. This is partly because the corridor is much more heavily used. A further factor is that there is considerably less space in which to construct, making more substantial impacts on the WCML inevitable even after mitigation.
Sustainability

3.6.55 The adoption of the alternative route into Birmingham along the Coventry corridor would result, overall, in a worse performance against the sustainability objectives. For most issues there would be no significant difference. However, for water resources, noise and community integrity the alternative route would be inferior to the preferred scheme. Only for land resources would the alternative be better, but it would only be marginally so. With the substitution of the West Midlands alternative, an additional 295 properties would become isolated by transport infrastructure which is a 170% increase over the preferred scheme.

Summary and key recommendations

3.6.56 We established that a principal station was required in Birmingham city centre and that it would require six platforms to accommodate services to a range of destinations.

3.6.57 We recommend that the option at Fazeley Street is taken forward as the Birmingham city centre station in the preferred scheme. A station at Warwick Wharf is presented as an alternative, but we consider it to be inferior to the preferred option, particularly due to its impacts on local conservation areas and its marginally longer journey times.

3.6.58 We also recommend that the station be accessed via the corridor at Water Orton, with a line of route through the West Midlands rejoining the WCML at Lichfield. We have identified an alternative route into Birmingham alongside the existing WCML, with an alternative line of route through the West Midlands further to the east rejoining the WCML at Whittington. This alternative is considered substantially inferior to the preferred option, largely due to its greater environmental and social impacts, its incompatibility with an optimal interchange station and lengthening of journey times to services north from Birmingham.

3.6.59 If these options were to be taken forward, we suggest that further work in the following areas should be a priority:

- The further design of Fazeley Street should take place in collaboration with Birmingham City Council, as promoters of the Eastside development. The proper integration of the station and wider development would reduce the impact on current proposals and may offer a substantial opportunity to stimulate further regeneration and land use changes.

- The optimisation of links to New Street station and the city centre more generally would also be an important element in designing a successful high speed terminal in Birmingham. We understand that Centro plan to undertake a study of links between Moor Street and New Street in 2010 and recommend that the potential high speed rail terminal sites are considered as part of that work.

- A particular focus for further work on the route from the delta junction to the WCML – which would cross a number of local roads – would be on developing a greater understanding of the interaction between railway, highways and existing landowners.