An Economically Powerful Sheffield City Region in a Rebalanced UK

High Speed Rail: Route and Station Location in Sheffield City Region

Summary Case
Autumn 2015
HS2 Must Help Deliver the Northern Powerhouse

Sheffield City Council, alongside many local and national supporters are convinced that the proposed High Speed Rail station in Sheffield City Region must be in the city centre, not at the currently proposed out of town parkway location.

Our arguments are not driven by a pre-determined view of one location over another: I have always been clear that my support for HS2 is conditional and based upon maximising economic growth in the North. I will not compromise on this position, particularly in light of the new evidence outlined in this summary which is so clear in its conclusions.

We have now reached a point where the case is overwhelming; compared to the HS2’s proposed parkway option, a city centre HS2 station in Sheffield City Region delivers:

- 6,500 more jobs
- 1,000+ new homes
- £2bn - £5bn more GVA, and
- 24% more passenger trips

I believe that the Government’s commitment to the Northern Powerhouse and Transport for the North can achieve a profound and sustained change for future generations. By integrating HS2 and HS3 or “TransNorth” into a single location, a city centre station in Sheffield better connects our great northern cities, directly helping to create a Northern Powerhouse. Crucially, this can now be achieved at no additional cost.

Local stakeholders in Sheffield City Region have demonstrated both a compelling regeneration Masterplan for the wider city centre station area and comprehensive connectivity packages to link HS2 seamlessly to the existing services and the rest of the City Region. Meanwhile the original justifications for the base-line position of an out of town parkway no long bear scrutiny in light of updated information.

I believe that to continue with the current proposal from HS2 would be an absurdity and a major opportunity lost. One part of Government policy would actively undermine another.

HS2 Ltd must now look to review their recommendation as a matter of urgency.

Councillor Julie Dore
Leader of Sheffield City Council
“Good quality transport is at the heart of our economic success. The decisions we take today about transport investment will determine our economic future. And there is no bigger decision, or bigger investment, than High Speed Two (HS2) – a new north-south railway for Britain.”

Rt. Hon. Patrick McLoughlin MP, Secretary of State for Transport

This summary considers the most appropriate location for a regional HS2 station – asking the question, which location will achieve the greatest long term economic impact for the whole of Sheffield City Region and deliver greater return on investment for UK Plc?

The evidence for a city centre HS2 station in Sheffield City Region is overwhelming. All parties, including HS2 Ltd themselves, agree that a city centre station at Sheffield Victoria would deliver more economic benefit than the proposed out of town parkway location at Meadowhall.

The advent of the Northern Powerhouse now brings the economic importance of a city centre station to the fore; HS2 must be delivered in a way that best creates scale and critical mass between our great Northern cities and achieves the aims of Transport for the North. Locating the HS2 station for Sheffield City Region in the city centre undeniably does that.

The city centre offers the best fit with Government’s policies; it creates more jobs, more passenger trips, more new housing and can be delivered for the same price as the alternative. Meanwhile it has become clear that the original justifications for locating the station at Meadowhall no longer bear scrutiny in light of more up to date information from HS2 Ltd.
The Right Strategic Answer

The Northern Powerhouse and rebalancing our economy away from an over reliance on London and the South East is potentially one of the most profound opportunities facing the UK.

It is now widely established that better connectivity both between London and the North and between cities within the North is critical to realising the UK’s economic potential. Transport connectivity alone won’t create the Northern Powerhouse but it is a vital component.

The city regions of Leeds, Manchester and Sheffield together add up to roughly 80% of the population of London, however they amount only to 40% of London’s economic output. Poor connectivity to centres of commerce limits trade and labour markets between the northern cities and London and the South East. This is a brake on growth and rebalancing and is unsustainable in the long term.

The response is not to curb London which must continue to succeed as a global city, but to make the North more competitive. To compete globally, the northern cities need scale and critical mass. No single northern city can compete globally on its own they are simply not big enough. By connecting our cities to emerging and growing markets we can unlock latent economic potential, rebalancing the national economy by strengthening and growing the economy of the North as a whole.

Growth in the North will not be achieved through uncontrolled urban expansion. Instead it requires increased density in city centres and a step change in connectivity similar to that of the Randstad, a conurbation connecting the four largest Dutch cities. Transport for the North recognises this and is explicit in its focus on city centre to city centre connectivity. The ambition is for a 30 minute journey time between Sheffield, Leeds and Manchester city centres to create a single labour market and harness the benefits of scale. By improving travel times we can connect highly skilled labour markets; connecting clusters of knowledge, innovation and ideas across the three cities and attracting and retaining talented people, enabling us to collectively compete with other world cities. This concept underpins the principle of a Northern Powerhouse.

HS2 should form the Sheffield to Leeds leg of “HS3” or ‘TransNorth’ but the current proposal from HS2 Ltd is that the station in Sheffield City Region should be located not in the centre of Sheffield but in an out of town parkway station some 4 miles away. Sheffield City Region would face the illogical position that HS2 goes to an out of town parkway station whilst TransNorth goes to the city centre. This would be an absurdity and a major opportunity lost. One part of Government policy would actively undermine another.
Most of the jobs stimulated by HS2 will not be driven from the productivity benefits of having faster journey times to London. They are generated by the agglomeration benefits of businesses clustering in an appropriate environment close to the stations themselves. To achieve these benefits there needs to be an existing concentration of similar firms and scope for further high density development to attract and house new occupiers. International evidence is extremely clear that out of town parkway stations do not deliver the catalytic regeneration benefit of urban centres.

The much increased scale of development and jobs at Victoria will benefit the whole of Sheffield City Region, not just Sheffield. The plans below show the forecast geographic spread of these jobs taking current travel to work flows. They demonstrate that, because the overall quantum of jobs is so much higher, each district in the city region receives at least three times as many jobs from a station at Victoria compared with Meadowhall. With a strong connectivity package, Victoria can open up more Sheffield City Region commuting connections, such as from Worksop, thereby linking more people into more and higher value jobs and creating a stronger, more integrated Sheffield City Region economy.

Net Additional Jobs Created By A Victoria Station By Area Of Residence (Volterra)

Net Additional Jobs Created By A Meadowhall Station By Area Of Residence (Volterra)
More Regeneration

There is far greater regeneration potential around Victoria than Meadowhall. The site at Victoria is less than a 10 minute walk from the heart of the city and is adjacent to an existing well established office location and will create an environment conducive to attracting more such development.

Consultants recently commissioned by the Sheffield City Region Combined Authority have produced station masterplans at Victoria and Meadowhall. The diagrams below demonstrate that a city centre station would generate significantly more direct benefit from an HS2 station than at Meadowhall. Despite taking a very aspirational and long term view and modelling an area over twice the size at Meadowhall, the area immediately around Victoria still generated greater economic impact in terms of jobs and GVA.5

High value, office based jobs are far less likely to locate next to a constrained M1, a biomass plant and sewerage works at Meadowhall where there are very few of the cultural, knowledge and leisure assets of a city centre. Other important sectors like logistics, retail and manufacturing are far less influenced by high speed rail and it is these sectors that are clustered around Meadowhall.

The Phasing Development Drivers at Victoria 6

5. BDP / Ekosgen (2015), Support for Economic Regeneration and Planning Aspects of Hs2 Masterplanning: Victoria
Further strengthening the case for the delivery of regeneration around Victoria is the fact that Sheffield City Council owns a significant amount of property in the immediate vicinity of the station. This capability to assemble sites and drive development at an early stage, in partnership with HS2 RegenCo, will create greater certainty and market confidence. The map below shows the land around Victoria that belongs to the Council.

By contrast, the Meadowhall route has a negative impact on the Waverley New Community which is currently being developed in Rotherham where the landowners estimate that between 750 - 1,500 potential homes which are yet to be built are directly affected. At a time that the Government is committed to building more homes across the country it is absurd to be losing the opportunity to develop houses on this scale.

London and Continental Railways (LCR), the regeneration company owned by the Department for Transport who delivered HS1 and development around stations at Kings Cross and Stratford and now working with the cities on the HS2 route to examine regeneration opportunities around the new stations, produced an independent report in 2014 which stated:

“The Victoria location offers major opportunities for urban regeneration on a par with, if not greater, than the most regeneration-friendly of other HS2 stations, given:
• the central urban location of Sheffield Victoria,
• the availability of derelict/under-utilised land,
• the underlying strong economic drivers and associated recent regeneration successes in the city, and
• the potential to build upon the successes of Sheffield City Council and previous regeneration bodies, Sheffield Victoria would be likely to represent one of the higher priority locations for any activity by a HS2 Regeneration body.”

Further strengthening the case for the delivery of regeneration around Victoria is the fact that Sheffield City Council owns a significant amount of property in the immediate vicinity of the station. This capability to assemble sites and drive development at an early stage, in partnership with HS2 RegenCo, will create greater certainty and market confidence. The map below shows the land around Victoria that belongs to the Council.
The area surrounding the proposed parkway station at Meadowhall is very constrained by existing major infrastructure such as the M1 motorway viaduct, Sheffield’s main sewage works and a new biomass power station. In addition to these physical constraints the scope for development is limited by the existing well established regional shopping centre at Meadowhall. Planning permission has also been granted for an Ikea store in the vicinity. This not only impacts on the availability of sites within the immediate surrounds of the station; it also impacts on the area’s placemaking potential and ability to attract higher value, Grade A office uses.

Given these factors and its distance from the commercial centre of Sheffield City Centre, HS2 will not be a catalyst for regeneration at Meadowhall in the way it will be at Victoria. The diagram below, from the Sheffield City Region Combined Authority’s regeneration
masterplan for Meadowhall shows that the proportion of development directly driven by HS2 is accordingly expected to be very small.

The Phasing Development Drivers at Meadowhall

The Sheffield City Region Combined Authority’s regeneration masterplan for Meadowhall goes on to say:

“The development of Grade A office space at Meadowhall is aspirational and currently not deliverable due to rental levels”

“It remains to be seen if new office space at Meadowhall would prove attractive to large corporate occupiers who historically have preferred city centre locations where they can be located next to fellow corporates”

“…in order to enable the delivery of the early phases the new office quarter will need to be supported by the public sector either through occupation of the early offices or through funding to enable development”

8. BDP/ Ekosgen (2015), Support for Economic Regeneration and Planning Aspects of Hs2 Masterplanning: Meadowhall
The figure below from the WSP report on the economic case for HS2 at Leeds and Sheffield City Regions (June 2013) commissioned by SYPTE and Metro shows the limits of available development opportunities in the vicinity of the proposed station. 9

Meadowhall wider development site areas

Key
1 – Embankment – not suitable for development
2 – Existing Blackburn Meadows water treatment works – not available for development
3 – Site of current development of Eon biomass power station – not available for development
4 – Site of Blackburn Valley Nature Reserve – retained and protected as green space
5 – Former Templeborough Steelworks - available for development with outline Masterplan in place. Partially impacted upon by proposals for new link road (Halfpenny Link)
6 – Meadowhall Overspill Car Park – under British Land ownership and forms part of the wider Meadowhall Masterplan
7 – Meadowhall Coach Park – under British Land ownership and forms part of the wider Meadowhall Masterplan
8 – Meadowhall Interchange (Bus Station) – Under British Land ownership and leased to SYPTE to operate
9 – Meadowhall Park and Ride site – Land owned by Network Rail and leased to SYPTE
10 – Meadowhall Rail Station – Land owned by Network Rail and operated by Northern and SYPTE

9. WSP (2013), The Economic Case for High Speed 2: Leeds and Sheffield City Regions
The area already suffers considerable traffic congestion issues with associated problems of air quality and pollution with the M1 Junctions 34(N) and 34 (S) suffering “exceptional” levels of delay and congestion. In 2013 this part of the motorway was already exceeding the safe emission levels set by the EU. This was evidenced by the recent Highways Agency proposal to set up a 60mph speed limit between junction 28 and junction 35a to try and address pollution issues in the area yet to date, HS2 Ltd have done no traffic modelling to understand the impact a parkway station at Meadowhall will have on the M1.

Connectivity studies commissioned by the Sheffield City Region Combined Authority suggest that Meadowhall will generate substantially more car journeys compared to a city centre station: 50% of journeys to Meadowhall station will be by car compared to 14% to Victoria. Locating a parkway station in an area which already has considerable congestion issues will either result in an inaccessible station, or substantial alterations to the highways system which will come at significant additional cost.

It is ironic that the national business case for HS2 is still overwhelmingly based on speed and journey time savings yet no similar consideration or weight appears to be given to the potential congestion and traffic delays that will be caused to the M1, the nation’s main North-South road link, by a Meadowhall parkway station.

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**Delivering The Sheffield City Region Strategic Economic Plan**

City centres are unique drivers of their city region economies. They are centres of commercial, cultural and academic activity providing jobs for commuters from a wider geography on a daily basis. Sheffield city centre does not yet punch its full weight to the detriment of the whole city region.

Sheffield City Centre is not the only spatial priority for Sheffield City Region, but it is a key one. If Sheffield City Region is to realise its growth aspirations, the economic role of the city centre must be increased significantly. This is why successive Local Enterprise Partnership (LEP) and Sheffield City Region Combined Authority publications have recognised the importance of growing the economic impact of the city centre.

The Independent Economic Review for the Sheffield City Region LEP, undertaken by Oxford Economics, stated that developing the city of Sheffield as an engine of growth, reflecting its role as a major employment centre was of the “highest importance”. 11

Sheffield City Region Strategic Economic Plan (SEP) identifies the city centre as one if its key spatial priorities acting as the largest

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hub for Knowledge, Creative and Digital Industries, Leisure, Higher Education, Culture and Financial and Professional Services. 12 This has also been reflected in recent land use modelling on behalf of Sheffield City Region which confirms the city centre as the location for 4 out of 5 of the city region’s priority sectors. 13

The sectors forecast for highest growth in Sheffield City Region Independent Economic Review, undertaken by Ekosgen, are business, professional and financial services (BPFS) and creative and digital industries (CDI). These sectors are concentrated in Sheffield City Centre 14 and are those most affected by the availability of high speed rail. The LEP’s Strategic Economic Plan also contains the ambition that 30,000 of the City Region’s 70,000 additional jobs target are in highly skilled occupations to address the productivity shortfall in Sheffield City Region economy. Victoria’s stronger ability to attract high level sector businesses means it is much better placed to deliver Sheffield City Region’s job growth ambitions, both in terms of quantum and quality.

One of the other key strengths of the Sheffield City Region that is promoted in the SEP is advanced manufacturing. In contrast to BPFS and CDI sectors, the growth potential of this sector is not affected by its proximity to high speed connectivity. However, the sector is impacted by the Meadowhall route which has some very negative implications for some of our existing advanced manufacturing companies.

A recent report commissioned by Sheffield City Region Combined Authority has highlighted that these negative impacts of the route past Meadowhall on major development sites for advanced manufacturing is unlikely to be mitigated by benefits accrued by the proximity to a high speed rail station at Meadowhall as this sector is less influenced by the presence of high speed rail. 15 For example, the University of Sheffield is expanding its world class engineering research facilities onto a new campus on the Sheffield Business Park. The University is currently constructing the first building called Factory 2050 and has ambitious proposals for further developments which are of vital importance to the future growth of the national economy. The aspirations of the University are being constrained by the HS2 route and future development land potentially blighted.

Consultants Parson Brinkerhoff and HS2 Ltd have identified feasible and deliverable alternative routes via the City Centre instead of the Meadowhall section. These alternative routes would be for both stopping and through train services, meeting all HS2 design standards, and give the same train service pattern identified for the Meadowhall Parkway option. Crucially, it would provide all of the benefits of city to city connectivity and regeneration at the same time as avoiding all of the damaging impacts on existing housing and commercial development land.
Better Connected

It is recognised that the benefits of HS2 need to be spread across the whole of the city region. Sheffield City Region covers the natural economic geography and is a much wider area than the historic administrative boundaries of South Yorkshire. Whilst Meadowhall is physically closer to some parts of the South Yorkshire, Victoria is better placed to serve the whole of Sheffield City Region. This is not just Sheffield, but also the areas of North Nottinghamshire and Derbyshire within the Sheffield City Region.

It is illogical for HS2 Ltd to continue to base economic decisions affecting commuting and travel to work patterns on the arbitrary and historical administrative boundary of South Yorkshire rather than the functional economic geography of Sheffield City Region. City regions now underpin every other part of Government policy and devolved governance arrangements. When we apply the wider Sheffield City Region geography to the analysis of HS2 station catchment and economic impact the debate on which station best serves the wider population is transformed in Victoria’s favour.

The table below shows the journey time difference from various Sheffield City Region destinations via heavy rail based on the connectivity packages proposed by Sheffield City Region Combined Authority’s connectivity work. This table demonstrates that Victoria is by far the most appropriate location for a ‘Sheffield City Region Hub’ given its faster journey times to locations across the functional economic area.

Conversely, work conducted for Barnsley, Rotherham and Doncaster Councils by Mott MacDonald has highlighted that a station at Meadowhall could remove 50% of customers from the city region who currently use the East Coast Mainline, substantially reducing the business case for further investment in the East Coast Mainline in the future.

### Sheffield City Region Connectivity: HS2 Victoria and Meadowhall Heavy Rail

<table>
<thead>
<tr>
<th>Key Destination</th>
<th>Journey time difference from Victoria compared to Meadowhall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barnsley</td>
<td>No difference</td>
</tr>
<tr>
<td>Chesterfield</td>
<td>17 minutes faster</td>
</tr>
<tr>
<td>Doncaster</td>
<td>5 minutes slower</td>
</tr>
<tr>
<td>Peak District (Hope)</td>
<td>24 minutes faster</td>
</tr>
<tr>
<td>Retford</td>
<td>10 minutes faster</td>
</tr>
<tr>
<td>Rotherham</td>
<td>5 minutes slower</td>
</tr>
<tr>
<td>Sheffield Midland</td>
<td>5 minutes faster</td>
</tr>
<tr>
<td>Wakefield</td>
<td>15 minutes faster</td>
</tr>
<tr>
<td>Worksop</td>
<td>10 minutes faster</td>
</tr>
</tbody>
</table>

16. HS2 Heavy Rail Connectivity as defined in ARUP (2014) Sheffield City Region High Speed Rail 2 Connectivity (Table 2) and Pell Frischmann (2015), Sheffield Victoria Station HS2 Connectivity Study (Table 3.2)
17. Based on current journey time plus an 8 minute walking time interchange at Meadowhall as confirmed by HS2 Ltd
18. Based on current journey time plus an 8 minute walking time interchange at Meadowhall as confirmed by HS2 Ltd
The plan below shows how connectivity to the whole of Sheffield City Region could be achieved at Victoria, largely based on existing infrastructure.

Potential Connectivity For Victoria
HS2 Ltd have previously expressed concerns about the distance between a station at Victoria and existing Midland Mainline station. Connectivity packages developed by the Sheffield City Region Combined Authority remove this by showing how new platforms could be constructed on the Midland Main Line, 270 metres away from the high speed platforms. This is significantly less distance than the length of a HS2 train and could be fully integrated with the HS2 station by means of a travelators and escalators. Network Rail have confirm that this proposal is achievable in terms of engineering feasibility and train service operational requirements.

The proposals developed by the Sheffield City Region Combined Authority now demonstrate that Victoria delivers better connectivity to the whole of the city region and wider destination than HS2’s proposals for Meadowhall.

19. Pell Frischmann (2015), Sheffield Victoria Station HS2 Connectivity Study
The original demand modelling by HS2 Ltd identified that the majority of demand for long distance travel within Sheffield City Region is from within Sheffield City Centre and from the west and south of the city centre, including from the wider city region areas of Nottinghamshire and Derbyshire. This is illustrated in the map below.

Demand For Long Distance Travel (Hs2 Ltd)  

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20. **HS2 Ltd** (2012), Options for phase 2 of the high speed rail network
Accordingly, HS2 Ltd’s passenger demand forecasts indicate that passenger demand to cities other than London would be 44% - 217% higher with a Victoria station than Meadowhall. These figures are shown in the table below, supported by more recent forecasts by HS2 Ltd that show that overall passenger demand is 24% higher at Victoria (5,100 extra daily trips) compared to Meadowhall and 65% of new trips are within the Yorkshire and Humber region.

If the HS2 station is located at Victoria then a large number of passengers (86%) will use public transport or simply walk to or from the station. In contrast, 50% of journeys to Meadowhall are expected to be by car, further exacerbating M1 congestion, junction capacity and air quality issues in the area and making Victoria a far more sustainable location.

Recent connectivity reports from Pell Frischmann commissioned by Sheffield City Region Combined Authority confirm that over 90% of HS2 demand is from Sheffield City Centre. The map above from HS2 Ltd reinforces that forecast ticket sales are from central and western Sheffield, making it illogical to place a HS2 station 4 miles away from the centre of demand. The local business community in Sheffield City Region find it hard to comprehend the case for making a lengthy journey across the city to Meadowhall thereby dramatically negating the journey time benefits of high speed rail rather than simply using existing services.

**2043 Passenger weekday trips forecast for each station location**

<table>
<thead>
<tr>
<th>Destination</th>
<th>Passengers from Meadowhall</th>
<th>Passengers from Victoria</th>
<th>Percentage Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>London</td>
<td>3,700</td>
<td>4,700</td>
<td>+27%</td>
</tr>
<tr>
<td>East Midlands</td>
<td>300</td>
<td>700</td>
<td>+133%</td>
</tr>
<tr>
<td>Birmingham</td>
<td>900</td>
<td>1,300</td>
<td>+76%</td>
</tr>
<tr>
<td>Leeds</td>
<td>1,700</td>
<td>3,000</td>
<td>+76%</td>
</tr>
<tr>
<td>North East</td>
<td>600</td>
<td>1,900</td>
<td>+217%</td>
</tr>
</tbody>
</table>

21. Pell Frischmann (2015), Sheffield Victoria Station HS2 Connectivity Study
22. ARUP (2014) Sheffield City Region High Speed Rail 2 Connectivity
23. HS2 Ltd (2012), Options for phase 2 of the high speed rail network
This significant difference, particularly in journeys to cities outside of London demonstrates the importance of a city centre station to the Northern Powerhouse which is about creating connected economic centres and a single labour market; achieving the figures above would be a demonstration of the Northern Powerhouse in action. If HS2 is truly going to form the backbone of a modern Northern railway network, it needs to connect into the areas of highest passenger demand.

The Northern Transport Strategy recognises this principle, which is why its journey time aspirations are based on city centre to city connectivity. A station at Meadowhall contradicts this principle and risks HS2 being seen as peripheral in any future Northern railway network. A city centre station as part of a through route is the most effective way of ensuring the future rail network can accommodate an increase in passenger numbers in Sheffield City Region.

HS2 Ltd have recently provided details on work they have undertaken on a through route to Victoria, demonstrating a willingness to continue the analysis of the Victoria option. It confirms that a stopping and through route via the city centre instead of the Meadowhall route is a practical, feasible and deliverable option.

Critically, this work also acknowledges that the additional journey time dis-benefit for the city centre option is just 2 minutes 7 seconds, not the 7 minutes previously estimated.

This additional 2 minutes 7 seconds journey time must be weighed against the chance to create 6,500 more jobs, 1,000+ new homes, £2bn - £5bn more GVA, and 24% more passenger trips.

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**A More Cost Effective Option**

“Our analysis suggests that serving central Sheffield would bring greater benefits than Meadowhall but this would come at a cost.”

HS2 Ltd themselves have always stated that the greater economic impact would come from a city centre station but this would come at a cost. This analysis is now no longer robust. HS2 Ltd have already confirmed that the journey time dis-benefit is not the 7 minutes previously stated but instead is just 2 minutes 7 seconds. Critically, the city centre route and station option can now also be delivered at a lower financial cost as well.

Previous analysis of HS2 costs and benefits have been conducted in isolation from other Government policies and ignores the costs of...
integration with Transport for the North or ‘HS3’. Viewing HS2 and Transport for the North costs together rather than as two entirely stand-alone projects shows that a city centre location would be a cheaper overall option compared to a parkway location.

A round figure of £1 billion of additional costs for a city centre station has been quoted previously. HS2 Ltd now confirm that in their latest assessment, that differential has already fallen substantially to £680 million. This is likely to reduce further as more work is carried out on the true costs of property acquisition, compensation and demolition on the proposed Meadowhall route.

The property related costs on the out of town route are significantly higher than the city centre route given the complexity of the Meadowhall route alignment and constraints compared to using the existing Worksop / Lincoln line of route into the city centre. HS2 have confirmed that there is accordingly still a large element of risk and uncertainty in their costs.

Whilst the costs include an estimate for business compensation this has been done in very generic terms only as no inspections or detailed discussions have been held with the affected businesses, some of which are very significant indeed with the Meadowhall route.

A further serious risk is the state of the geology and therefore cost of constructing the Meadowhall section of the route. The ground conditions of the Meadowhall route make it some of the most complex and high risk elements of the whole network. Sheffield City Council holds historic geological information, based on previous major infrastructure developments in the area which show how challenging this section of the route will prove. The proposal to come through the city centre instead totally avoids this.

HS2 Ltd as well as local partners recognise that, should the HS2 station be at Meadowhall, a new dedicated high speed transport link would be required to connect to the city centre, as this is the centre of demand. The costs creating a fully integrated system linking HS2 at Meadowhall with TransNorth or “HS3” connections which are explicitly city centre to city centre would be avoided entirely by locating HS2 in the city centre in the first place.

Independent work from the consultants Arup has indicated that connecting HS2 at Meadowhall to TransNorth or HS3 in the city centre could cost as much as £594 million. This then also must be set against the remaining cost differential of the two station options; locating the HS2 station in the city centre in the first place would eradicate the need for such costly integration.

Work from CBRE on behalf of Sheffield City Council has modelled the additional tax take from a city centre HS2 station and estimated that the potential uplift in business rates around Victoria would be up to £847 million, £530 million more than at Meadowhall. This could be used to provide a local contribution that could be in the region of £300m.

26. ARUP (2014) HS3 Proposal
27. CBRE (2013), Property and Financing Solutions for HS2 Station.
28. Volterra (2014), High Speed Rail 2 Station Funding
When these elements are factored in it not only totally closes any remaining cost differential between the two options but could deliver net additional funding to pay for local connectivity packages which are currently un-funded at either location but are key to spreading the benefit of HS2 to the wider city region.

Finally, a study by the economic development consultancy Genecon has estimated that the city centre station would generate an additional £2bn to £5bn GVA over 25 years.\(^{29}\) It has been estimated that the city centre station generates as many as 6,500 more jobs and the additional income tax to be paid to the Exchequer as result of locating the station at Victoria instead of Meadowhall would be between £400m to £1bn.\(^{30}\)

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29. Genecon (2012), Maximising the economic impact of HS2 investment in Sheffield
Conclusion: An Overwhelming Economic Case

There is an overwhelming case for locating the HS2 station in Sheffield City Centre and not at an out of town parkway location.

A city centre HS2 station in Sheffield City Region delivers:

- 6,500 more jobs
- 1,000+ new homes
- £2bn - £5bn more GVA, and
- 24% more passenger trips

The city centre option better delivers Government’s priorities of the Northern powerhouse and Transport for the North and avoids greater negative impacts of manufacturing and housing land. Crucially, this can now be achieved at no additional cost.

HS2 is a once in a generation infrastructure project. We have an obligation to ensure it is delivered in an optimal way and that means a city centre station in Sheffield City Region.
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