

Appendix 6 Potential Alternative Locations Referred to in Relevant Representations

In Response to: ExQ1 Number 1.2.10

Four Ashes Limited

APPENDIX 6

EXQ1 QUESTION 1.2.10 - POTENTIAL ALTERNATIVE LOCATIONS REFERRED TO IN RELEVANT REPRESENTATIONS

1 EXQ1 QUESTION 1.2.10

“Several sites have been referred in RRs as potential alternative locations for a SRFI in the region. Some of these appear to have been considered and discounted for reasons set out in the table commencing on P38 of the ASA. Although they may have been identified in the ASA by means of a different name those that do not appear to have been considered include:

- *Rugby Sidings;*
- *Crewe Sidings;*
- *Former RAF Airfields at Gaydon and High Erroll;*
- *land at Pleck (Walsall) near to J9 of the M6; and*
- *Horseley Fields near Wolverhampton.*

Can the Applicant provide a written note commenting on the availability of these suggested alternatives and their capacity/ suitability to meet some or all of the identified need for SRFI capacity in the North West Quadrant of the WM Region?”

2 APPLICANT’S RESPONSE

- 2.1 The Applicant reviewed all Relevant Representations and any references to any potential alternative site were recorded. The potential alternative sites referred to in the Relevant Representations were compared against the sites already considered and discounted by the Alternative Sites Assessment (ASA) (Document 7.2, APP-257).
- 2.2 The Applicant agrees that the list of potential alternative sites provided in ExQ 1.2.10 is complete and no other references were made to specific alternative sites in the Relevant Representations.
- 2.3 Comments on the suggested alternative sites’ availability and capacity/suitability to meet the identified need are set out separately below.
- i. “RUGBY railway sidings with existing warehouse space and good access to M1, M6, M6 Toll and other motorways” (RR-0152)*
- 2.4 Rugby is located outside of the ASA search area (Figure 5 of the ASA).
- 2.5 As set out at paragraph 4.1.19 of the ASA, sites which are located beyond the search area are not considered to be suitable alternatives as they would serve a different catchment area and would not meet the demands of the Wolverhampton/Birmingham conurbation or the needs of the distribution industry in the Black Country and southern Staffordshire.

- 2.6 Rugby is also currently well served by existing (DIRFT) and other proposed SRFIs (Northampton Gateway), as well as existing National Distribution Centres (Magna Park). A new SRFI in this location may not be adequately spaced from existing facilities and would not contribute to the compelling need for an expanded network.
- 2.7 On this basis, it is considered that a site within Rugby is not a suitable or appropriate alternative and would not meet the identified need. The suggestion discounted as a potential alternative.
- ii. "CREWE railway sidings which could service the northwest and West Midlands with good access to M6" (RR-0152)*
- 2.8 Crewe is approximately 20km beyond the northern boundary of the WMI ASA search area.
- 2.9 As set out at paragraph 4.1.9 of the ASA, ***"the northern boundary of the search area is approximately 38km from the M54 / northern boundary of Wolverhampton and, in accordance with the established precedent in previous ASAs, it is considered that sites which are located in the northern extremity of the search area would be less able to efficiently and sustainably meet the demands of the Wolverhampton/Birmingham conurbation"***.
- 2.10 As stated above, sites which are located beyond the search area are not considered to be suitable alternatives as they would serve a different catchment. This accords with the NPS which requires SRFIs to be located relative to the markets they will serve (paragraph 4.84) in order for the secondary road distribution leg to be minimised and efficient.
- 2.11 On this basis, a SRFI facility in this location would serve a different catchment area and would not meet the identified need.
- iii. "Redundant RAF airfields at High Erroll and Gaydon" (RR-0152)*
- 2.12 High Erroll is a village in the borough of Telford and Wrekin, Shropshire and Gaydon is village located in Warwickshire.
- 2.13 Both locations are a significant distance outside of the ASA search area and, therefore, were not considered to be suitable alternatives as they would not meet the identified need.

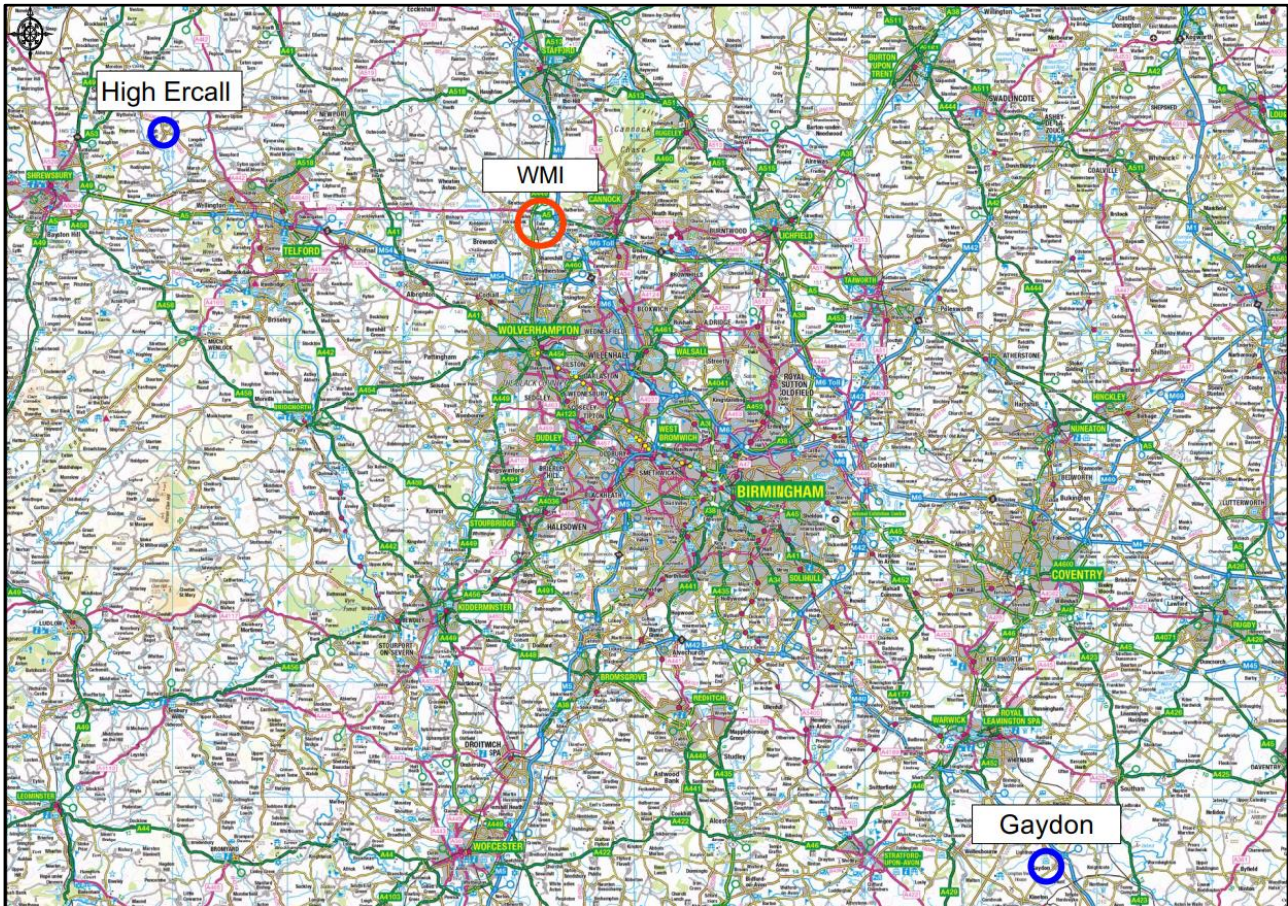


Figure 1: Locations of High Ercall and Gaydon

- 2.14 In addition, the former RAF airfield and High Ercall is very remote and not directly or easily accessible from the strategic road or rail networks.
- 2.15 The former RAF airfield at Gaydon was passed into civilian ownership in 1978. Today, the RAF airfield at Gaydon contains the Heritage Motor Centre Museum, the headquarters and factory of automobile manufacturer Aston Martin, and the Jaguar Land Rover Gaydon Centre.
- 2.16 For these reasons, these sites are not suitable or capable and discounted as potential alternatives.
- iv. "...vast area of brownfield land at Pleck near J9 of the M6 and in the vicinity of Horseley Fields, Wolverhampton" (RR-0158)*
- 2.17 The ASA adopts a set of criteria which are used to identify the suitability of potential alternative sites within the search area. As set out at paragraph 6.1.3, a site's size and orientation are a key assessment criterion since sites must be of a sufficient length/depth to be available to move full length (775m) trains on and off the main line in a single movement without shunting or splitting. The orientation of the site is also important, to ensure that engineering requirements for railway design can be met. Network Rail's minimum limits for radius of curvature (150m) and maximum gradient (1 in 500) for sidings can significantly restrict track layout design for a particular site. Sufficient land is also needed to enable development of the rail infrastructure and associated warehousing.

- 2.18 Whilst the WMI proposals take up approximately 300 hectares, an appropriate level of flexibility needed to be adopted within the ASA and it would have been predetermining to set the size threshold to reflect/suit the WMI masterplan. As summarised at Appendix 1 of the ASA, Howbury and DIRFT III used 40 hectares as the minimum site size for a potential alternative, however, the NPS identifies a site area threshold for SRFIs of 60 hectares. The NPS also makes it clear that a larger number of smaller rail freight interchange terminals would not be a viable nor desirable option for addressing the identified need for SRFIs (Table 4, page 23).
- 2.19 The NPS recognises that there is a place for local terminals, however, it is determined that ***“these cannot provide the scale economies, operating efficiencies and benefits of the related business facilities and linkages offered by SRFIs”***. Therefore, the ASA sets a minimum threshold of 60 hectares in identifying true alternative sites. Given the scale of the recognised need for rail-based warehousing in the search area, it is clear that more than one SRFI of this scale or a single SRFI of a much larger scale is required – but the search has used this relatively small site area criteria in the first instance.
- 2.20 Land in the vicinity of J9 of the M6 (along with several other locations in Wolverhampton) was examined at an early stage of the ASA. However, in light of the above criteria, no suitable or appropriate alternative sites (or combination of sites) were identified.
- 2.21 Whilst there is a significant amount of industrial uses and a patchwork of brown field land in the vicinity of Junction 9 of the M6, the availability of land is far less than 60ha. The majority of the land and buildings in the vicinity are in use and the area is not promoted for redevelopment at the scale required for a SRFI, particularly at the scale to address the recognised need for rail-based warehousing in the area.
- 2.22 Please refer to aerial photographs at Figures 2 – 5.
- 2.23 The land in the vicinity of Junction 9 of the M6 includes the Bescot Rail Sidings which was addressed and discounted at Page 39/40 of the ASA.
- 2.24 The site of the former James Bridge Holder Station is also located north west of Junction 9. The James Bridge Holder Station site totals 8ha and is constrained by the neighbouring M6 and River Tame, which separates the small site from the rail line.
- 2.25 Finally, the ‘Phoenix 10’ brownfield development site is also located east of the M6, between Junctions 9 and 10. The 18ha site is designated for employment uses in the Walsall Site Allocation Document. The Phoenix 10 site is too small to accommodate a SRFI and is separated from the rail line by the M6 and River Tame.



Figure 2: Land to the west of Junction 9 of the M6



Figure 3: Land to the east of Junction 9 of the M6

- 2.26 The rest of the land in the vicinity of Junction 9 of the M6 accommodates existing businesses and a significant amount of residential properties. The creation of an alternative site of 60ha or more would require a level of property purchase/compulsory purchase which is not considered to be suitable or viable.
- 2.27 On this basis, there are no suitable or appropriate alternative sites (or combination of sites) in the vicinity of Pleck near J9 of the M6.
- 2.28 There is understood to be less than 2ha of vacant brownfield land in the vicinity of Horseley Fields, Wolverhampton. Please refer to aerial photographs below.



Figures 4 and 5: Land in the vicinity of Horseley Fields, Wolverhampton

- 2.29 The small amount of land available, close proximity to the Wolverhampton Passenger Station and level difference between the rail line viaduct and surrounding land (see Figure 5), mean that this is not considered to be a suitable or appropriate alternative site location.

Appendix 7

How Does the Freight Pathing Process Work?

In Response to: ExQ1 Number 1.2.12

Four Ashes Limited

HOW DOES THE FREIGHT PATHING PROCESS WORK?

This note explains the process involved in the identification and allocation of capacity on the national rail network. It has been prepared in the form of Questions and Answers.

Q1. Who makes decisions regarding the rail timetable?

Network Rail makes the decisions about which mix of services are entered into any timetable.

Its “Objective” (as defined in Part D of the Network Code) is to share capacity on the Network for the safe carriage of passengers and goods in the most efficient and economical manner in the overall interest of current and prospective users and providers of railway services. This is set out in the Network Code Part D*.

Where there is a potential conflict between services, Network Rail will consider a set of Decision Criteria from the Network Code Part D*, deciding which are relevant to the particular circumstances, then apply those it has identified as relevant in order to reach a decision which is fair and not unduly discriminatory as between any individual affected train operators.

Network Rail will decide which of the Decision Criteria are the most important in the circumstances and use them with an appropriate weighting to decide how, and if, competing train paths are accepted into the timetable.

If a train operator disagrees with any of Network Rail’s decisions in what goes into a timetable, it can use the industry’s appeal procedure to challenge the decision.

**The Network Code is a set of rules incorporated into track access contracts between train operators and Network Rail.*

Q2. How often is the timetable changed?

There is a requirement for the timetable to change twice a year, every year, as defined in the Network Code. This is the time when Network Rail can look at the complete set of passenger and freight requirements and adjust train paths to endeavour to accommodate all requests.

Q3. How are freight paths allocated alongside passenger service paths?

When compiling a timetable, Network Rail must assess all operators’ requirements together and not look at freight services after passenger services, or vice versa. Paths are allocated based on an operator’s rights*.

Many train operators (both passenger and freight) will have “Firm Rights” in their Track Access Contracts for specific services to be present in any timetable, within certain time-bands, and Network Rail, first and foremost, must satisfy those requirements. There are also other classes of rights which dictate in what order bids should be accommodated in the timetable and with what priority. Such a process may need to take into account the Decision Criteria described in Q1.

*“operator rights” are specified in Train Operator Company’s (TOC’s) and Freight Operator Company’s (FOC’s) Track Access Contracts. These will vary, with specified arrival and departure time windows, any stops, and other characteristics necessary for Network Rail to process and enter the train paths into a timetable.

Q4. How do freight operating companies apply for paths?

As well as being able to change the timetable it wishes to run twice a year (see Q2), freight operating companies (FOCs) are also able to apply to Network Rail for a freight path at any time.

This ability for freight companies to make a “spot bid” into the timetable exists because FOCs need to be able to quickly respond to spot markets of business that come their way at very short notice. This is a fundamental difference to how passenger operating companies respond to their markets and has been recognised as such in how the Network Code was written and approved.

The difference between these two methods of applying for freight paths is that, when making a “spot bid” during the course of a timetable, the FOC itself must ensure that the application for a freight path does not clash with any other established service.

Q5. Do all paths allocated for freight services get used?

Many freight services, such as container trains to and from our ports, run regularly six days a week, like a timetabled passenger operation.

In some cases, not every path allocated for freight gets used every day. Many freight customers do not know exactly what their requirements are until the middle of the previous week. These requirements can be quite complicated and can lead to differing train plans each week for various customers. To cater for these “moving targets”, there are more freight paths in the timetable than run each day.

Q6. What happens to paths that are not used?

As part of passenger and freight operating companies’ track access contract with Network Rail, there is a requirement for parties to meet as often as necessary in order to ensure that capacity on the network continues to be shared in the most efficient and economical manner in the overall interest of all users. When necessary, Network Rail or an operator are able to instigate the process of removing any deemed unused paths, on a use it or lose it basis. The rules for this are contained in Part J of the Network Code.

Additionally, since April 2014, a joint Network Rail / Freight Operating Company working group (Capacity Management Review Group) has been in existence to review and suggest amendments to rail freight paths in the timetable based on a “usefulness” and “reasonableness” test.

After discussion and reaching a consensus, freight paths that have not been used for 90 days are either completely removed from the current and future timetables or turned into more useful Strategic Capacity* to help cater for future changes to traffic flows.

This is also a rolling process and the Capacity Management Review Group convenes every three months.

From 9th April 2014 up to the current date, over 5000 freight paths have either been completely removed from the timetable or put into the Strategic Capacity Statement. This system is just one mechanism that strikes the right balance between removal of unused rights and paths and keeping relevant and useful paths for strategic capacity.

There is no corresponding working group for non-freight paths.

*Strategic Capacity is capacity for which there is no immediate requirement but is likely to be needed by freight train operators for short-term requirements or longer-term future aspirations.

Q7. Does a simple analysis of the spare paths in the current timetable show what the capacity of the network is and what paths would be available to new freight services?

There is no simple analysis of a timetable to determine the true capacity of the network. It is often the case that the timetable in question isn't always optimised to best capacity and, by reviewing a timetable, a better fit of trains can be achieved. Examples of how a timetable might be optimised include removing unnecessary time in a schedule following other services; investigating putting faster running trains in front of slower ones and ensuring a timetable has sufficient space in it to cater for new services.

There is a balance to be struck between filling every spare path on any line of route to maximise efficiency, and the need to have "fire breaks" in the timetable, such that there is space to recover from perturbation.

Q8. Is it possible that there could be no spare paths in a current timetable but through a review of the timetable additional freight services could be accommodated?

This is possible and has previously been shown to be the case. Any pathing study is reflective of the current timetable which is subject to change (see Q1 and Q2). Paths that are no longer required are removed from the timetable and those paths that remain are often able to be altered to better use the existing capacity. This, in turn, often releases capacity for new freight services.

The production of new timetables also offers the opportunity for Network Rail to flex train paths to accommodate new services.

Q9. How are timetables reviewed to accommodate new services?

Timetables are not routinely reviewed other than in response to timetable review requests (Q2). Often, a passenger or freight operator will examine the detail of how a particular timetable has been put together and will suggest changes to be made in order for one of its

new services to be accommodated. Network Rail will then examine the proposal and accept it or reject it.

There is a team of two people within Network Rail who actively look to incorporate useful Strategic Capacity train paths into the timetable, taking into account the projected growth in freight services from the established Freight Market Study.

Q10. Have there been situations on the network where rail freight services have not been capable of being accommodated?

There has not been a situation whereby a new freight facility has been unable to operate due to a lack of train paths; but then why would you build a freight facility where you couldn't operate any trains?. If paths cannot be accommodated, then a route can be deemed to be congested and Network Rail works to produce a plan to de-congest the route. The West Coast Main Line is not currently deemed to be congested.

A great deal of iterative work often goes into the development of a freight path. For example, if you tried to run a freight service along a busy commuter railway during a busy peak period, this would be highly challenging. Finding a space in the off peak, or in the evening or overnight can be easier. Finding a freight path is a balance of timing and resource utilisation.

Q11. The Government and Network Rail support an increase in rail freight and increases in rail freight are anticipated in the future. Within this context why is there not greater certainty about the ability to accommodate paths from new SRFIs?

Whilst it is possible to look at pathing arrangements for new facilities in relation to the current timetable, as answers to the above questions demonstrate, the timetable is subject to review and is not a fixed position unlike, for example, highway infrastructure.

Network Rail is required to have regard to the needs of all rail users. It recognises that the Intermodal market is one of the key sectors that is driving rail freight growth and the desired modal shift from road to rail.

In the Freight & National Passenger Operators' Route Strategic Plan (February 2018), Network Rail addresses the interests of all rail users and indicates its programme to accommodate them. The plan sets out "the first stage of a longer-term vision to facilitate significant rail growth over the next fifteen years" (Foreword, Page 3).

In respect of the West Coast Main Line, the plan includes a commitment to "facilitate new terminal developments at Daventry [DIRFT III], Northampton, West Midlands and Parkside".

The ability to accommodate growth also depends on the nature, speed and length of the traffic flow. It may for example be possible to get a path to and from a site near Northampton, but not be possible to find a matching path to a busy port such as Felixstowe or Southampton

in order that the service can run profitably. This comes back to the iterative development process referred to above.

Appendix 8

Timetabling study into the introduction of Intermodal Freight services at WMI

In Response to: ExQ1 Number 1.2.14

Four Ashes Limited

PRA Operations Planning Limited



**Timetabling study into the introduction of Intermodal
Freight services at a freight terminal at West
Midlands Interchange (WMI), Strategic Rail Freight
Interchange (SRFI) (between Stafford and Penkridge)**

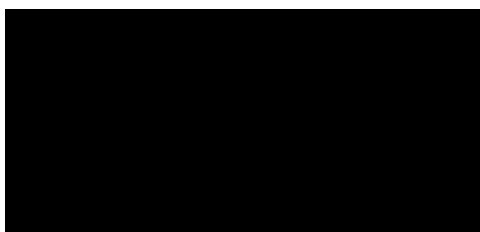
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Simon Pilkington

Note:

Any information contained herein is **confidential**, and must not be disclosed to other parties without the express written consent of PRA Operations Planning Ltd, Intermodality and other relevant stakeholders.

Front cover photo: 66587 hauls an Intermodal Freight service through Acton Bridge 14th March 2012 © PRA

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1. Executive summary

This report gives details of an investigation into the possibilities of paths for freight trains using the proposed West Midlands Interchange (WMI), Strategic Rail Freight Interchange (SRFI), which will be situated on the Down (Northbound) side north of Bushbury Junction and to the south of Penkridge station opposite the current Four Ashes Up Goods Loop.

The train service paths are divided into those between Crewe Basford Hall and WMI (referred to as the “North” services) and those between Rugby and WMI via Birmingham International and Coventry (referred to as the “South” services).

The report shows which paths have initially been identified in each direction, and what effect such paths would have on other services in scenarios in which those services could be flexed at certain points without detriment to the overall service pattern.

It should be noted that some issues were found regarding the accuracy and application of the Train Planning Rules between Bushbury Junction and Stafford involving existing passenger train services; the inconsistent application of the Train Planning Rules meant that identifying an exact pattern of services every hour became difficult.

Trains were timed using the timing load of 75C66S14, which indicates a trailing load of 1475 tons and diesel hauled by a Class 66 locomotive, at a maximum speed of 75 mph. This is slightly heavier than the normal loading of 1235 tons which is designated by the timing load of 75C66S12. For comparison purposes some trains have been shown using this timing load.

Paths initially identified (subject to the above):

- North services - 10 Up direction paths, 17 Down direction paths.
- South services - 11 Up direction paths, 17 Down direction paths.

Available paths along the Rugby - Coventry - Stechford route are at a premium due to the intensity of existing passenger and freight services. Down direction class 9 services (services currently operated by Virgin trains from Euston to Scotland via Birmingham) along this route have two timing loads, 390 and 221T. When the 390 timings are used there is a path available in which the freight train recesses at Coventry for the class 9 service to pass; this then can proceed almost unhindered all the way to Bushbury Junction. When the class 9 service is timed as 221T the freight path is no longer available due to the 221T taking longer to get to Coventry,

making the margin between it and the following passenger train insufficient for the freight service to follow the class 9.

It was found that better and more regular paths were available during daytime hours when the regularity of the passenger services created paths at certain critical locations which could be relied upon.

The Engineering Access Statement for the route between Crewe and Stafford states that trains should be timed as if on a two-track railway, using the Slow line timings between the hours of 2300 and 0515 (Monday evening till Saturday morning inclusive). This results in a congested route with on average 10 trains per hour each way entering and exiting Basford Hall Sidings, a situation which does not leave capacity for many new paths. Section 4 of the report gives details of some overnight paths in certain directions, but these are very much on an “ad hoc” basis relying on the absence of other freights in the hours concerned.

2. Introduction

PRA Operations Planning Ltd has been asked to consider the possibilities of paths for freight trains into and out of the proposed WMI facility. The facility is to be built on the Down side (Northbound) of the line **4 miles 48 chains north** of Bushbury Junction and **3 miles 36 chains south** of Penkridge opposite the current Four Ashes Up Goods Loop (refer to the extract from the Sectional Appendix below) and will involve trains crossing the Down line to gain access from and to the Up line at 20 mph.

LOR	Seq.	Line of Route Description	ELR	Route	Last Updated
MD301	019	Rugby to Penkridge (Exclusive) (via Birmingham)	RBS3	LNW South	27/02/2016
		Location	Mileage M Ch	Running lines & speed restrictions	Signalling & Remarks
		Four Ashes South Jn	17 00 *		TCB West Midlands S.C. (WS) Wolverhampton workstation AC: Rugby ECR GSM-R
		Four Ashes	17 17 *		Axle counter area. UP: Up Penkridge. DP: Down Penkridge. TASS fitted: Down Penkridge and Up Penkridge lines.
		Sectional Appendix boundary	17 25 *		FAUGL: Four Ashes Up Goods Loop (440 metres / 481 yards).
		PENKRIDGE	19 71		Rugby ROC (WS) Stafford Workstation
		Continued in the LNW(N) Sectional Appendix.	20 20		
			23 30		
			23 32		

The train paths to be examined are:

- Services between WMI and Crewe Basford Hall. These services will be referred to as “North services”
- Services between Rugby and WMI via Birmingham International and Bescot including the possibility of running to/from Leamington Spa via Coventry. These services will be referred to as “South services”.

The remit provided by Intermodality was for four trains per day in each direction for both North and South services, to identify capacity for an initial phase of ten. Therefore, it was deemed that by examining a full 24 hours Saturday excepted (SX) timetable period, it would be possible to identify any feasible paths throughout the day and out of those any four could be chosen to suit requirements, and the other paths could be utilised if needed.

3. Assumptions and Methodology

Whilst compiling the timetable for this report, **VoyagerPlan train planning software using the** December 2016 Working Timetable (WTT) has been used as a base along with Version 4 of the 2017 Train Planning Rules (TPRs) dated July 2016.

To formulate Sectional Running Times (SRTs) into and out of the new facility existing SRTs between Bushbury Junction and Stafford Trent Valley Junction were examined and a pro rata time for passing the new location was calculated based on the mileages between the relevant locations (overall the mileage is 12 miles and 78 chains between Bushbury Junction and Stafford Trent Valley Junction, with the new facility approximately 4 miles 48 chains from Bushbury Junction). This time was then extended to allow for limited speed access/egress to/from the facility of 20 mph; in the absence of definite plans and schematics it was decided to adopt a “worst case” scenario in regard to this speed. In addition to these SRTs there was also a need to similarly calculate SRTs for the new trains to use Bushbury Down Goods Loop and Rickerscote Up Penkridge Slow line for the purposes of recessing to allow current services to pass if the need arose.

Due to the fact that most of the current services are timed only at Bushbury Junction and Stafford Trent Valley Junction, there are no current SRTs available to show trains passing the site of the proposed WMI, which makes estimation of margins for trains entering/exiting the facility difficult. To overcome this, it was deemed necessary to calculate SRTs for trains to pass the facility and thus make it possible to get a more accurate picture of the margins available. The method of calculating these SRTs is a combination of the methods described previously, plus some personal observations on a variety of services, using GPS and stopwatch, made while travelling over the route.

Whilst the proposed freight trains are shown in their schedules to “start” at Rugby in the Down direction, it may be the case that the majority will pass through Rugby. Therefore, time has been deducted between Rugby and Rugby Trent Valley Junction to take this into account and give a more accurate representation of a train’s journey time. Similarly, the trains are shown to “terminate” at Rugby in the Up direction, which will not be case in reality.

The timing load used is 75C66S14 (diesel 1475 tonnes trailing load maximum speed 75 mph). 75C66S12 was also used in certain hours to give a comparison between the two, which can be seen in the timetable extracts shown as Appendices.

To ensure more robust paths at key locations (such as Bushbury Junction, Stechford and Coventry) extra time has been added to the train schedules additional to that show in TPR to allow for slow speed junction moves.

4. Project Findings and Issues

During the investigation of the freight paths it was noted that there were some inconsistencies in the application of the TPRs in the Stafford to Bushbury area, and in some cases, it seemed as if the TPRs themselves might not be as accurate as they might be, taking into account certain sections of new geography in this area. There may be a case for a more detailed examination of these issues before paths can be properly defined and declared valid.

In the overnight hours 2200 to 0400 the amount of current freight train paths became a precluding factor to identifying paths for the proposed new trains in some areas. In many cases, trains have multiple versions of the same service depending on the days run, the engineering period concerned, and the presence of alternative versions to/from different origin/destination points. If such trains could be identified with a core path (which would be used in the majority of occasions, the other paths being in effect Short Term Planning variants) it might be possible to identify more overnight SX paths for the proposed new trains which are valid throughout the timetable period.

Paths identified. For full details please refer to Appendices which show timetable extracts for examples of the trains concerned.

North Section, Up direction from Crewe Basford Hall to WMI

Depart Crewe Basford Hall	Arrive WMI	Comments /Issues
04:25	05:16	
06:25	08:02	Long recess at Rickerscote for six trains to pass. <i>Refer to Appendix B.</i>
09:57	11:03	4L75 Crewe Basford Hall SSM to Felixstowe North FLT has split days, MO and MSX. MSX it departs 0958, MO it departs at 0952. If these could be made 0952 SX there is a path for the proposed train, otherwise the path exists only on Mondays. <i>Refer to Appendix B</i>
13:10	14:03	6G64 Liverpool Bulk Terminal to Ironbridge Power Station is shown to run. Ironbridge Power Station

		is closed so it might be safe to assume this train is no longer required.
13:58	15:03	
14:55	16:06 (MO) / 16:03 (MSX)	6G71 1508 MO Cliffe Vale to Bescot Yard takes the MSX path.
15:58	17:03	
16:57	18:03	
18:58	20:03	
20:57	22:06	4O08 1918 SX Trafford Park FLT to Southampton MCT precedes from Rickerscote.

The time passing Stafford Trent Valley Junction for these trains is critical at xx:34, as the crossing move from the Up Slow line to the Up Penkridge line is 3 minutes in front of what is usually a Class 4 freight on the Down Slow line from the Colwich direction. When the class 4 freight service is not there, there is a little more scope, but the train then has to recess at Rickerscote on the Up Penkridge Slow line to allow the regular xx.34 Liverpool Lime Street to Birmingham New Street service to pass. The regular xx.03 arrival at WMI is 3 minutes after the xx.36 Birmingham New Street to Liverpool Lime Street passes WMI at xx/30, and 4 minutes ahead of the Up Cross Country service xx.07 from Manchester Piccadilly to the West of England (based on timings calculated as described in Section 3 of this report).

North Section, Down direction WMI to Crewe Basford Hall

Depart WMI	Arrive Crewe Basford Hall	Comments /Issues
01:00	01:46	
02:00	02:46	
03:20	04:06	
05:10	05:56	
06:10	07:00	4K51 Daventry to Crewe Basford Hall SSN is in two paths, ThSX and ThO. The ThO path is quicker than the ThSX path. If this train could

		utilise the ThO path the 0610 service could arrive at Crewe Basford Hall SSN at least 2 minutes earlier.
07:05	07:51	Has to precede 4S43 Daventry to Mossend Yard from Stafford Trent Valley Junction.
09:28	10:17	Recesses at Stafford for 1U25 Euston to Crewe service to precede
10:28	11:25	Recesses at Stafford RMT for 1U27, plus 6M44, plus 9S54 Euston to Scotland services to pass. <i>Refer to Appendix C</i>
11:28	12:18	Recesses at Stafford for 1U29 Euston to Crewe service to precede
12:28	13:17	Pathed out approaching Stafford for 1U31 Euston to Crewe service to precede
13:28	14:34	Extra Class 6 service (6X43) precedes at Stafford Trent Valley Junction
14:28	15:26	Recesses at Stafford RMT for 1U35, plus 4M24, plus 9S70 Euston to Scotland services to pass.
15:28	16:30	Recesses at Stafford RMT as for 1U37, 4M28, 9S77 and also 4M54 passing after 9S77.
17:28	18:30	Recesses at Stafford RMT as for 1U41, 6M63, 9S85 and also 4M87 passing after 9S85.
19:28	20:39	Recesses at Stafford RMT for the same pattern of trains as the 17:28 service (above), with additional 4M56 and 1M65 (Exeter to Manchester service) to pass. <i>Refer to Appendix D.</i>
20:23	21:25	Follows 6X77 to Basford Hall Junction
21:23	22:30	Follows 1S55 (Postal service) at Stafford Trent Valley Junction, then recesses at Stafford for 1U49 service plus an extra 1P07 (Euston to Preston via Trent Valley) and 9P42 (Euston to Preston via Birmingham).

South Section, Up direction WMI to Rugby

Critical issues.

During the period of the day when other trains form regular patterns, there are times at the following locations which must be achieved by the proposed freight services.

Aston XX/07 between 2Nxx service (Four Oaks to Longbridge departing XX.03) and 2Lxx service (Longbridge to Lichfield departing XX.10.5). This time may be up to a minute earlier in some hours when the class 2 services have subtly different timings

Stechford dwell (usually 4 - 5 minutes) at platform 1 until XX.17, departing 2 minutes after the passage of the 9Mxx Scotland to Euston (via Birmingham) service.

Coventry pass through platform 1 at XX/39, 3 minutes after the arrival on platform 2 of the class 2 service from Nuneaton, and 3 minutes before the departure of the return service to Nuneaton.

Rugby Trent Valley Junction. The natural running line for trains coming off the Up Coventry line is the Up Northampton line (UNL). However, the 1UXX (Crewe to Euston via Trent Valley) service crosses from the Up Slow line to the UNL in most hours at approximately the same time, so the freight needs pathing time as required at Rugby TV Junction and crosses to the Up Slow line behind the 1UXX. There does not seem to be any operational reason why the 1UXX service should change lines, and it would be operationally more robust if the 1UXX remained on the Up Slow line with the freight using the UNL, thus avoiding a potential clash.

Paths

Depart WMI	Arrive Rugby	Comments /Issues
08:10	09:49	Earlier departure due to congestion around Aston. Held at Stechford until the regular path of xx:17 is available.
09:35	10:53	
12:35	13:53	

13:35	14:53	5B05 MO (Soho LMD to Wolverton CS) to be flexed. <i>Refer to Appendix I for the amount of pathing time in 5B05</i>
14:35	15:53	0G10 (Crewe TMD to Bescot HS) needs to be flexed
15:35	16:55	
17:35	18:53	
18:35	19:53	
19:37	20:52	
20:35	21:52	
21:35	22:52	

South Section, Down direction Rugby to WMI

Critical issues.

During the period of the day when other trains form regular patterns, there are times at the following locations which must be achieved by the proposed freight.

Stechford XX/06 to cross towards Aston in front of the 10xx service from the Birmingham direction which passes at XX/09

Aston XX/17 between the 2RXX service (Lichfield to Redditch) which departs xx.13.5, and 2UXX service (Redditch to Four Oaks) which arrives at XX.21.5

Perry Barr North Junction XX/20 in front of 2KXX service (Birmingham to Rugeley) passing at XX/23

Paths

Depart Rugby	Arrive WMI	Comments /Issues
01:15	02:26	
02:15	03:26	
03:15	04:26	
04:23	05:34	

04:53	06:06	2 versions shown with 75C66S12 for comparison
05:47	07:10	Via platform 4 at Coventry and Coventry North Jct
07:24	09:07	9S44 service from Euston to Scotland is timed a class 390 which is 1.5 minutes quicker to Coventry than the alternative 221T timing used in other hours. This gives enough margin between the 9S44 service and the following 2Y57 for the freight service to be recessed on the Up & Down Slow line and follow 9S44 with sufficient margin in front of the 2Y57. Also recessed at Bushbury Junction for 9S44, 1M21 and 1F35.
08:21	10:11	9S47 service from Euston to Scotland is timed a class 390 which is 1.5 minutes quicker to Coventry than the alternative 221T timing used in other hours. This gives enough margin between the 9S47 service and the following 1Y03 for the freight service to be recessed on the Up & Down Slow line and follow 9S44 with sufficient margin in front of the 1Y03. Also recessed at Bushbury Junction for 9S47, 1M25 and 1F37 & class 4 freight. However, 1Y03 arrives Coventry 3 minutes earlier than in other hours and detaches a unit (shown “-D” in activities). This means that it is due to arrive in platform 4 while the freight is still standing on the Up & Down Slow line; dependant on the length of the freight it might be the case that 1Y03 cannot arrive on schedule. If this is the case this freight path cannot be accommodated.
09:23	11:07	9S54 service from Euston to Scotland is timed a class 390 which is 1.5 minutes quicker to Coventry than the alternative 221T timing used in other hours. This gives enough margin between the 9S54 service and the following 2Y17 for the freight service to be recessed on the Up & Down Slow line and follow 9S54 with sufficient margin in front of the 2Y17. Also recessed at Bushbury Junction for 9S54, 1M29 and 1F39.
10:23	12:10	9S55 service from Euston to Scotland is timed a class 390 which is 1.5 minutes quicker to Coventry than the alternative 221T timing used in other hours. This gives enough margin

		between the 9S55 service and the following 1Y15 for the freight service to be recessed on the Up & Down Slow line and follow 9S55 with sufficient margin in front of the 1Y15. Also recessed at Bushbury Junction for 9S55, 1M25 and 1F41 and Class 1 locomotive
11:23	13:07	9S60 service from Euston to Scotland is timed a class 390 which is 1.5 minutes quicker to Coventry than the alternative 221T timing used in other hours. This gives enough margin between the 9S60 service and the following 1Y21 for the freight service to be recessed on the Up & Down Slow line and follow 9S54 with sufficient margin in front of the 1Y21. Also recessed at Bushbury Junction for 9S60, 1M37 and 1F43.
13:55	15:15	In this hour the 9S65 from Euston is timed as a class 221T, arriving at Coventry 1.5 minutes later than its class 390 counterpart, which destroys the previously proven freight path. This path (xx.55 ex Rugby) is used by freights in other parts of the day and is available only infrequently. There is a 1Qxx (ThO) test train which needs to be taken into account, thus this path may only be available ThSX for the proposed freight.
15:23	17:07	Extra pathing through Aston, less dwell at Bushbury
18:36	20:07	1W63 (Euston to Birmingham) is 3 minutes later at Coventry than in other hours, thus enabling the freight to follow the 9S97 service all the way from Rugby non-stop to take up its normal path at Stechford.
19:36	21:07	1W69 (Euston to Birmingham) is 3 minutes later at Coventry than in other hours, thus enabling the freight to follow the 9K39 service all the way from Rugby non-stop to take up its normal path at Stechford.
20:55	22:09	
21:23	23:00	Due to 4F90 being split 2216 FSX/ 2227 FO from Bescot the later path causes issues with the proposed freight. Therefore, the freight is shown being routed from Newton Junction and along Bescot Up & Down Goods line to avoid the following 2H78 (Birmingham to Rugeley).

There is also the possibility of a path at 1623 from Rugby using the recessing at Coventry, but 9S85 (showing class 390 timing load) is artificially slowed down into Coventry to replicate class 221T timings, thus eliminating the path for the freight.

5. Conclusions

This timetable assessment sets out the capability of the current working timetable to accommodate additional freight trains operating to and from the WMI SRFI.

During the “daytime” hours it is almost possible to achieve regular timings over the routes concerned, but issues with irregular services (especially freight and Empty Coaching Stock movements) may preclude the proposed new freight trains from running in certain hours.

As can be seen from the contents of the report, it should be possible to choose four paths each way as required in the initial first phase of operations, with the increase to ten paths in the future, based on the current timetable. Once opened, train operators serving WMI would then look to obtain paths based on the timetable in place at that time.

Wherever possible the paths for the proposed services have been formulated to cause no interference with existing trains, but there are some instances where non-passenger services will have to be re-timed over some part of their journey in order to accommodate the proposed freight services; in these cases use would be made of existing pathing time which would be moved or divided as required.

Further work can be undertaken to refine the outputs of this study as required, to reflect the finalised main line access and on-site track layout as agreed with Network Rail.

6. Glossary of Terms and Abbreviations.

Dwell Time: The period of time during which a passenger train is stopped at a station for passengers to alight and board.

Headway: Minimum time interval that is needed between successive trains travelling in the same direction on the same line.

Sectional Running Times: The allowance of time given to a particular train between two points. This value is used to compile the timetable, and is dependent on the type of train used

Train Planning Rules: Rules set by Network Rail for planning train services: these Rules include instructions as to the amount of Headway, Dwell time, Platform Re-occupation, Line Geography and Junction margins to be used on the services planned.

Up direction: Trains travelling basically in a Southbound direction.

Down direction: Trains travelling basically in a Northbound direction.

7. Resources used for this report.

Sectional Appendices : London North Western North

London North Western South

(as amended up to Supplement No. 29, dated September 2016)

Train Planning Rules : London North Western 2017 timetable version 4.0

Working Timetable Data: As supplied by Network Rail for December 2016 WTT

8. Appendix A: Example of night paths with no recessing needed - Bushbury Junction to Crewe Basford Hall Junction

Proposed trains highlighted in light green. Other trains shown to give context to the proposed trains - not all trains shown.

Train ID		6M73QB	4M96QB	4M96QC	4Z75TD		4M89QD	4M89QF	4Z73TD	4M83QD	4M83QC	4Z91TD
Departs		20.43	18.46	21.52			14.33	14.33		00.31	20.09	01.15
From		Swindon	London	Willesden			Felixstowe	Felixstowe		Daventry	London	Rugby
To		Cocklebury	Gateway	Brent			North	North		INT	Gateway	
Arrives		Euro	Bas	Bas			Ditton	Ditton		Trafford	Trafford	
Accom Symbols							(O'Connor)	(O'Connor)		Park	Park	
Oper Char Symbols												
Timing Type		60HTR100	75C66S14	75C66S14	75C66S14		75C66S16	75C66S16	75C66S14	75C66S16	75C66S16	75C66S14
Days Run		*MSX*	*MSX*	*MSX*			-SO-	-SO-		[MO]	*MO*	
Bushbury Jn	mgn	00/40	..	..	..		..	..	..	..	..	(2)
Bushbury Jn, D.G.L.		..	..	..	..		..	..	..	..	..	02/16½
Four Ashes Loop	Arr	..	..	..	..		..	..	..	..	..	..
WMI (SRFI)	Dep	..	..	..	..		..	..	..	..	..	..
Penkridge	mgn	..	..	..	..		..	..	..	..	..	[1]
Staffrd Trnt Vily Jn	Dep	[1]	..	..	..		..	..	..	..	..	02.26
Stafford Sth Jn (N4)	Dep	00/57	01/04½	01/04½	01/12		02/09	02/09	02/12	02/21	02/21	..
Stafford	Dep	SL	SL	SL	SL		SL	SL	SL	SL	SL	..
Stafford	Dep	..	..	..	..		..	..	..	..	..	..
Stafford	Dep	..	..	..	[1]		..	..	[1]	..	..	..
Stafford	Dep	5	5	5	5		5	5	5	5	5	..
Staffrd Nrth Jn (N5)	Dep	00/58	01/05½	01/05½	01/14		02/10	02/10	02/14	02/22	02/22	..
Stafford Doxey Jnctn	Dep	..	..	..	..		..	..	..	..	..	..
Norton Bridge	Dep	..	..	..	..		..	..	..	..	..	..
Searchlight Lane Jn	Dep	01/04	01/11	01/11	01/19½		02/15½	02/15½	02/19½	02/27½	02/28	..
Madeley	Dep	..	..	..	..		..	..	..	..	..	..
Crewe Basford Hll Jn	Dep	01/17	01/22½	01/22½	01/31		02/27	02/27	02/31	1	02/40	..
	Dep	[1]	[1]	[1]	[1]		[1]	[1]	[1]	(2)	[1]	..
	Dep	01/25	01/32	01/32	01/39½		02/37	02/37	02/39½	02/52	02/50	..

Train ID		4M70QA	4Z71TD	4Z93TD	4Z95TD		6M75QB	4Z31TD	4Z31TZ	5K25AG	5A04QA	4Z01TD
Departs		21.31		02.15	03.15		23.44			04h30	05h10	04.23
From		Felixstowe		Rugby	Rugby		Southminstr			Barton	Wolverhmpn	Rugby
To		North Ditton (O'Connor)					BNFL Crewe Coal		Crewe Bas Bas	Crewe	Rugeley Trent	
Arrives		06.43	04.06				06.05	05.55	05.56	05h58	05h53	
Accom Symbols												
Oper Char Symbols												
Timing Type		75C66S12	75C66S14	75C66S14	75C66S14		60-TR40	75C66S12	75C66S14	221	150	75C66S14
Days Run		*MSX*					*WFO*					
Bushbury Jn	mgn	..	..	(2)	(2)		..	..	..	..	..	(2)
Bushbury Jn, D.G.L.		....	....	03/16%	04/16%		....	....	....	05/17	05/21%	05/24%
Four Ashes Loop	Arr	....	....	....	....		....	....	....	....	....	....
	Dep	....	....	....	....		....	....	....	....	....	....
	mgn	....	....	[1]	[1]		....	....	....	....	....	[1]
WMI (SRFI)		..	03.20	03.26	04.26		..	05.10	05.10	..	..	05.34
Penkridge	Dep	....	....	....	....		....	....	....	....	....	....
Staffrd Trnt Villy Jn	mgn	..	..	..	..		..	..	..	[1](2)	..	..
	Dep	03/14%	03/32	....	....		05/16%	05/22	05/22	05/27	05/32	....
	Ine	SL	SL	..	..		SL	SL	SL	SL	SL	..
Stafford Sth Jn (N4)	Dep	....	....	....	....		....	....	....	....	....	....
	Ine	..	..	..	..		..	..	..	..	..	..
	mgn	(6%)	[1]	....	....		....	[1]	[1]	....	....	....
Stafford	Arr	..	..	..	..		..	..	..	..	05RM34	..
	plt	5	5	....	....		5	5	5	5	3	....
Stafford	Dep	03/22	03/34	..	..		05/17%	05/24	05/24	05/28	05RM41	..
	Ine	....	....	....	....		....	....	....	....	FL	....
Stffrd Nrth Jn (N5)	Dep	..	..	..	..		..	..	..	05/29	..	..
	Ine	....	....	....	....		....	....	....	FL	....	....
Stafford Doxey Jnctn	Dep	..	..	..	..		05/18%	..	..	..	..	..
	Ine	....	....	....	....		FL	....	....	....	....	....
	mgn	..	..	..	..		[2%]	..	..	..	..	..
Norton Bridge	Dep	....	....	....	....		05/27	....	....	05/33	....	....
Searchlight Lane Jn	Dep	03/28	03/39%	..	..		..	05/29%	05/29%	..	..	..
	Ine	....	....	....	....		....	....	....	....	....	....
	mgn	..	..	..	..		..	..	..	[1]	..	..
Madeley	Dep	03/40	03/51	....	....		05/38	05/41	05/41	05/40%	....	....
	mgn	[1](4)	[1]	....	....		[1]	[1]	[1]	(5)	..	..
Crewe Basford Hill Jn	Dep	03/53	03/59%	....	....		05/48	05/49	05/49%	05/49	....	....
								75C66S12 for comparison				

9. Appendix B: Examples of services from Crewe Basford Hall to WMI recessed at Rickerscote

Proposed trains highlighted in light green. Other trains shown to give context to the proposed trains - not all trains shown.

Train ID		4Z72TD	1V43DB	4Z72TD	2Y00ES	2G05EC	9G46EX	9R23EA	1R23EA	1L65EC	4Z72TD
Departs		06.25	06.00	06.25	06.49	06.35	06.17	06.27	06.27	06.30	06.25
From		Basford Hall	Manchester Piccadilly	Basford Hall	Crewe	Crewe	Preston	Manchester Piccadilly	Manchester Piccadilly	Liverpool Lime	Basford Hall
To		WMI	Bristol Temple	WMI	London Euston	Birmingham New	Birmingham New	London Euston	London Euston	Birmingham New	
Arrives		08.02	09.10	08.02	10.18	08.04	07.56	09.33	09.33	08.18	
Accom Symbols			1		1	1	1	1	1	1	
Oper Char Symbols											
Timing Type		75C66S14	221	75C66S14	350	350	221T	390	390	350	75C66S14
Days Run											
Crewe Basford Hll Jn	Dep	06/30	06/42½	..	06/52	..	07/04½	..	..	..	..
	Ine	SL	FL	....	SL	....	FL	....	....	....	....
Madeley	Dep	06/43	06/46½	..	06/56	..	07/08½	..	..	..	..
	mgn	<1>	[1]	1<1>
Norton Bridge	Dep	06/55	06/53½	..	07/02½	..	07/15½	..	07/20½	..	..
	Ine	....	....	....	....	....	....	....	SL	....	....
	mgn	..	..	..	..	..	..	..	..	..	..
Little Bridgeford Jn	Dep	06/56½	....	....	07/03½	07/10½	....	07/18½	....	....	....
	Ine	..	..	..	..	SL	..	SL	..	..	..
Stafford Doxey Jnctn	Dep	....	....	....	....	....	....	....	....	....	....
	Ine	..	..	..	..	..	..	..	..	..	..
Stffrd Nrth Jn (N5)	Dep	....	....	....	....	....	....	....	....	....	....
	Ine	..	..	..	..	..	..	..	..	..	..
	mgn	[1](3)	[1]	....	[1]	....	....	....	....	f	....
Stafford	Arr	..	06.59	f	07.08	07.14	..	07.22	07.26½	07b40½	..
	plt	4	1	4	4	4	UFL	4	4	4	..
Stafford	Dep	07/04	07.00½	07/04	07.10	07.15½	07/20	07.24	07.28½	07p41½	..
	Ine	..	..	..	..	..	..	..	..	..	..
Stafford Sth Jn (N4)	Dep	..	07/01	..	..	..	07/21	..	..	..	..
	Ine	....	SL	....	....	....	SL	....	....	....	....
Staffrd Trnt Vily Jn	Dep	..	07/02	07/05	07/11	07/16½	07/21½	07/27½	07/29½	07/42½	07/05
Rickerscote	Arr	....	....	07*07	....	....	....	....	....	....	07*07
	Dep	..	..	07*47	..	..	..	..	..	..	07*47
Penkridge	Dep	....	....	....	07.15½	....	....	....	....	07.47	....
	mgn	..	..	..	..	..	..	..	..	..	[1]
WMI (SRFI)	mgn	..	..	..	..	..	..	..	..	..	08.02
Four Ashes Loop	Arr	....	....	....	....	....	....	....	....	....	....
	Dep	..	..	..	..	..	..	..	..	..	..
	mgn	....	[1	[1]	<1>	<1>	[1>	[1]	....
Bushbury Jn	Dep	..	07/11½	..	07/22	07/25	07/30	07/37	07/39	07/54½	..

Train highlighted in blue is 4L75 in MO/MSX paths. This would need to be in MO path throughout the week.

4Z04 highlighted to show context with 1010 and 1L69. Pattern repeated in other hours.

Train ID		1O10CA	4Z04TD	1L69EC		4L75HB	4Z02TZ	4L75HB	9M50ES	1O12CA	4L75HB	4L75HB	4Z02TZ	1L71EC	4Z02TZ
Departs		08.27		08.34		09.52	09.57	09.58	06.52	09.27	09.52	09.58	09.57	09.34	09.57
From		Manchester Piccadilly		Liverpool Lime		Basford Hall	Basford Hall	Basford Hall	Edinburgh	Manchester Piccadilly	Basford Hall	Basford Hall	Basford Hall	Liverpool Lime	Basford Hall
To		Bournemouth	Rugby	Birmingham New		Felixstowe North	WMI	Felixstowe North	London Euston	Bournemouth	Felixstowe North	Felixstowe North	WMI	Birmingham New	Basford Hall
Arrives		13.11	10.53½	10.18		20.37	11.03	20.37	12.34	14.11	20.37	20.37		11.18	
Accom Symbols		1		1					1	1				1	
Oper Char Symbols															
Timing Type		221	75C66S14	350		75C86D16	75C66S14	75C86D16	221T	221	75C86D16	75C86D16	75C66S14	350	75C66S14
Days Run						[MO]		[MSX]			[MO]	[MSX]			
Crewe Basford Hill Jn	Dep	..	..	09/22½		09/57	10/02	10/03½	10/04½	..	..	..	..	10/22	
	Ine	....	....	FL		SL	SL	SL	FL	....	....	....	....	SL	
Madeley	Dep	..	..	09/26½		10/06	10/15	10/12½	10/08½	..	..	..	10/15	10/26	
	mgn	....	....	[1]		(8)	....	(1½)	[1]	....	....	....	....	....
Norton Bridge	Dep	..	..	09/34½		10/23		10/23	10/15½	..	..	..	10/27	10/32½	
	Ine	....	....	....		....	....	....	....	....	....	....	....	....
	mgn	....	....	..		(½)	..	(½)	..	..	..	..	..	..
Little Bridgeford Jn	Dep	09/19½	..	....		10/24½	..	10/24½	....	10/19½	....	....	10/28½	10/33½	
	Ine	SL	..	....		..	..	..	..	SL	..	..	..	..
Stafford Doxey Jnctn	Dep	....	....	09/38½		....	....	....	10/19½	....	....	....	....	....
	Ine	..	..	SL		..	..	..	SL	..	..	..	..	..
Stafford Nth Jn (N5)	Dep	....	....	....		....	....	....	....	....	....	....	....	....
	Ine	..	..	..		..	..	..	..	..	..	..	..	..
	mgn	....	....	....		[1](1½)	....	[1](1½)	....	....	....	....	[1]	[1]	
Stafford	Arr	09.23	..	09.39½		..	..	..	..	10.23	f	f	..	10.38	
	plt	4	....	4		4	..	4	4	4	4	4	4	4	
Stafford	Dep	09.25	..	09.40½		10/30	..	10/30	10/20	10.25	10/30	10/30	10/33	10.39	
	Ine	....	....	....		e	....	e	....	....	....	....	e	....
Stafford Sth Jn (N4)	Dep	..	..	..		..	..	..	..	..	..	..	..	..
	Ine	....	....	....		....	....	....	....	....	....	....	....	....
Stafford Trnt Vily Jn	Dep	09/26	..	09/41½		..	..	..	10/21	10/26	10/31	10/31	10/34	10/40	
Rickerscote	Arr	....	....	....		....	....	....	....	....	....	....	10*36	....	10*36
	Dep	..	..	..		..	..	..	..	..	..	..	10*43	....	10*43
Penkridge	Dep	....	....	09p46		....	....	....	....	....	....	....	....	10.45	....
	mgn	..	..	..		..	..	..	..	..	..	..	..	..	[1](5)
WMI (SRFI)	mgn	..	09.35	..		..	..	..	..	..	..	..	..	..	11.03
Four Ashes Loop	Arr	....	....	....		....	....	....	....	....	....	....	....	....	....
	Dep	09/30½	..	..		..	..	..	..	10/30½	..	..	..	..	..
	mgn	[1]	[1]	[1]		..	..	..	[1]	[1]	..	..	..	[1]	..
Bushbury Jn	Dep	09/34½	09/44	09/53½		..	..	..	10/29½	10/34½	..	..	..	10/52½	..

10. Appendix C: Example Down direction service recessed at Stafford for “regular” trains to precede.

Train ID		1U27FS	4Z39TZ	6M44FE	1S48LW	9S54LX	4Z39TZ	1H64FW	1F39FC	4Z11TE
Departs		08.46		05.36	09.30	08.43	10.28	09.40	10.36	09.23
From		London		Southampton	London	London	FOUR	London	Birmingham	Rugby
To		Euston		Eastern	Euston	Euston	ASHES	Euston	New	
		Crewe	Crewe	Halewood	Glasgow	Edinburgh	Crewe	Manchester	Liverpool	
Arrives		11.24	11.25	12.37	13.59	14.17	11.25	11.46	12.09½	
Accom Symbols		1			1	1		1	1	
Oper Char Symbols										
Timing Type		350-110	75C66S14	60-66S06	390	390	75C66S14	390	350	75C66S14
Days Run				[MSX;x]						
Bushbury Jn	mgn	..	..	..	..	10/41½	..	..	..	..
Bushbury Jn, D.G.L.		....	....	....	....	..	....	....	10/57	10k*59
Four Ashes Loop	Arr	..	..	..	..	..	..	..	..	..
	Dep	..	..	..	..	..	..	..	..	..
	mgn	....	....	....	....	....	....	....	....	[1]
WMI (SRFI)		..	10.28	..	..	10/44½	..	..	11/00	11.07
Penkridge	Dep	....	....	....	....	....	....	....	11.04	....
Staffrd Trnt Vily Jn	mgn	..	..	[1](1½)	..	..	..	..	..	..
	Dep	....	10/40	10/43	....	10/49	....	....	11/08½	....
	Ine	..	SL	SL	..	SL	..	..	SL	..
Stafford Sth Jn (N4)	Dep	....	....	....	....	....	....	....	....	....
	Ine	..	..	..	..	..	..	..	..	..
	mgn	<½>	[1]	....	....	....	f	....	....	....
Stafford	Arr	10.35	10*42	..	..	..	10*42	..	11.09½	..
	plt	3	RMT	5	DFL	5	RMT	DFL	5	..
Stafford	Dep	10.42	10*52	10/44	10/45	10/50	10*52	10/54½	11.10½	..
	Ine	FL	e	....	FL	....	....	FL	....	....
Stffrd Nrth Jn (N5)	Dep	10/42½	..	..	..	..	..	..	..	..
	Ine	SL	....	....	....	....	....	....	....	....
Stafford Doxey Jnctn	Dep	..	..	..	..	10/50½	..	..	11/11½	..
	Ine	....	....	....	....	FL	....	....	FL	....
	mgn	..	..	..	..	..	..	..	..	..
Norton Bridge	Dep	....	....	....	10/48	10/54½	....	10/57½	11/15½	....
Searchlight Lane Jn	Dep	10/46½	..	10/50	..	..	10/59	..	..	..
	Ine	DNB	..	....	....	....	....	....	....	....
	mgn	..	..	(4)	..	..	..	..	..	..
Madeley	Dep	....	....	11/06	10/53½	11/00	11/10½	11/03	11/22	....
	mgn	..	..	[1]	[1]	[1]	[1]	[1]	[1]	..
Crewe Basford Hill Jn	Dep	....	....	11/14	10/57½	11/04	11/19	11/07	11/27	....

11. Appendix D: Example of Down direction train recessed at Stafford for non-regular pattern trains

Train ID		1U56FC	1S95LW	4Z53TD	6M52FA	9S97LX	4S45LB	4S45QB	1F25FW	4M56FC	1H73FW	1M65FX	4Z53TD	1F57FC
Departs		19.01	18.30		13.40	17.43	18.39	18.39	18.34	12.33	18.40	16.54	19.28	19.36
From		Birmingham	London		Hinksey	London	Daventry	Daventry	London	London	London	Exeter	WMI	Birmingham
To		New Crewe	Euston Glasgow Central	Crewe Bas	Sdgs Carlisle Network	Euston Glasgow Central	Int Coatbridge F.L.T.	Int Coatbridge F.L.T.	Euston Liverpool Lime	Gateway Crewe Bas	Euston Manchester Piccadilly	St. Manchester Piccadilly	Crewe Bas	New Liverpool Lime
Arrives		20.32	23.08	20.39	03.55	23.17	03.24	02.17	20.53	20.31	20.52	20.58	20.39	21.18
Accom Symbols		1	1			1			1		1	1		1
Oper Char Symbols														
Timing Type		350	390	75C66S14	60-66S08	390	75C66S12	75C66S12	390	75C66S14	390	221	75C66S14	350
Days Run					[FO]		[TO/R]	[TSX]						
Bushbury Jn	mgn	..	..	..	(9½)	..	..	..	..	..	..	..	..	..
Bushbury Jn, D.G.L.		19/23	....	....	19/30	19/41½	....	....	....	....	....	19/51½	....	19/57
Four Ashes Loop	Arr	..	..	..	..	..	..	..	..	..	..	..	..	..
WMI (SRFI)	mgn	..	..	..	..	..	..	..	..	..	..	..	..	..
Penkridge	Dep	19/26	....	19.28	..	..	..	..	..	..	..	..	..	20/00
Staffrd Trnt Vily Jn	Dep	19.29½	....	....	....	....	....	....	....	....	....	....	....	20.04
Staffrd Trnt Vily Jn	mgn	(3)	..	..	..	..	(1½)	(1½)	..	..	..	(1½)	..	..
Staffrd Trnt Vily Jn	Dep	19/37	....	19/40	19/43½	19/49	19/52	19/52	....	19/57	....	20/00	....	20/08½
Staffrd Trnt Vily Jn	Ine	SL	..	SL	SL	SL	SL	SL	..	SL	..	SL	..	SL
Staffrd Sth Jn (N4)	Dep	..	..	..	..	19/49½	..	..	..	..	..	..	..	..
Staffrd Sth Jn (N4)	Ine	..	..	..	..	FL	..	..	..	..	..	..	..	..
Staffrd	mgn	..	..	[1]	(2½)	..	..	..	..	..	..	..	..	..
Staffrd	Arr	19.39	..	19*42	..	..	..	..	19.52½	..	..	20.01	19*42	20.09½
Staffrd	plt	5	DFL	RMT	5	DFL	5	5	3	5	DFL	5	RMT	5
Staffrd	Dep	19@45	19/45½	20*05½	19/48	19/50	19/53	19/53	19.54	19/58	20/02½	20.02½	20*05½	20.10½
Staffrd	Ine	..	FL	e	..	..	..	..	FL	..	FL	..	..	..
Staffrd Nrth Jn (N5)	Dep	..	..	..	..	..	..	..	..	..	..	..	..	..
Staffrd Nrth Jn (N5)	Ine	..	..	..	..	..	..	..	..	..	..	..	..	..
Staffrd Doxey Jnctn	Dep	..	..	..	..	..	..	..	..	..	..	..	20/08	20/11½
Staffrd Doxey Jnctn	Ine	..	..	..	..	..	..	..	..	..	..	..	..	FL
Norton Bridge	mgn	..	..	..	..	..	..	..	..	..	..	..	..	..
Norton Bridge	Dep	..	19/48½	..	..	19/54½	..	..	19/58½	..	20/05½	..	..	20/15½
Searchlight Lane Jn	Dep	19/49	..	..	19/54	..	19/58½	19/58½	..	20/03½	..	20/07	20/13	..
Searchlight Lane Jn	Ine	DNB	..	..	..	..	..	..	..	..	..	DNB	..	..
Madeley	mgn	..	..	..	..	..	..	..	..	..	..	..	..	..
Madeley	Dep	..	19/54	..	20/06	20/10	20/10	20/10	20/04	20/15	20/11	..	20/24½	20/22
Madeley	mgn	..	[1]	..	[1]	[1]	[2](1)	[2](1)	[1]	1	[1]	..	[1]	[1]
Crewe Basford Hill Jn	Dep	..	19/58	..	20/16	20/04	20/20	20/20	20/08	20/25	20/15	..	20/33	20/27

12. Appendix E: Examples of early Up direction trains from WMI. The xx.35 departure becomes regular

Train ID		1V45DB	2R17EA	4Z42TZ	1L66EC		2A55EL	2N26EA	4Z04TD	2R27EB	2W18ET
Departs		07.07	08.09		07.04		09.06	09.46		09.45	10.01
From		Manchester	Lichfield		Liverpool		Rugeley	Four		Lichfield	Walsall
To		Piccadilly	City		Lime		Trent	Oaks		City	
		Bristol	Redditch		Birmingham		Birmingham	Longbridge		Redditch	Wolverhmpn
Arrives		Temple			New		New				
		10.08	09.19	09.49½	08.48		10.07	10.33	10.53½	11.02	11.05
Accom Symbols		1			1						
Oper Char Symbols											
Timing Type		221	323	75C66S14	350		150	323	75C66S14	323	350
Days Run											
Staffrd Trnt Vily Jn	Dep	08/02½	..	..	08/11½		..	..	..	..	..
Rickerscote	Arr	....	....	....	....		....	....	....	....	....
Penkridge	Dep	..	..	..	08.16		..	..	..	..	..
WMI (SRFI)	mgn	..	..	..	..		..	..	..	..	..
Four Ashes Loop	Arr	....	....	08.10	....		....	09.35	....	....	....
	Dep	..	..	..	08/19½		..	..	..	..	..
	mgn	[1]	..	[1]	[1]		..	[1]	..	..	..
Bushbury Jn		08/11	....	08/19	08/23½		....	09/44	....	....	....
Portbl Jn (Wst Mdl)	mgn	....	....	08/24	....		....	09/49	....	....	....
Darlaston Jn	mgn	....	....	08/27½	....		....	09/52½	....	....	....
Pleck Jn		..	..	..	..		09/47	..	..	..	10/02½
Bescot Jn	mgn	....	....	....	....		....	....	....	....	....
Bescot Stadium		....	....	08/29	....		09.49	09/55	....	10.04½	....
Bescot Up nd Dwn Gds		....	....	..	..		..	..	..	..	..
Bescot T.M.D.		....	....	....	....		....	....	....	....	....
Bescot Yard	Arr	..	..	..	..		..	..	..	..	..
	Dep	....	....	....	....		....	....	....	....	....
Bescot Enginers Sdgs		....	....	....	....		....	....	....	....	....
Bescot Up Loop		....	....	....	....		....	....	....	....	....
Newton Jn.		....	....	....	....		....	....	....	....	....
Tame Bridge Parkway		....	....	....	....		09.51½	....	....	10a07½	....
Hamstead		..	..	..	..		..	..	..	..	10.11
	mgn	....	....	(½)	....		....	(1)	....	....	....
Perry Barr North Jn		..	..	08/33½	..		09/56	10/00	..	10/12½	....
Perry Barr		....	....	....	....		....	....	....	....	10a14½
Witton		..	..	..	..		..	..	..	..	10.17
	mgn	....	....	(1)	....		....	(½)	....	....	....
Aston		..	08p34	08/37	..		09/59½	10.03	10/06½	10.13½	10a19½
Duddeston		....	08p37	....	....		10.06	....	....	....	10.22½
Proof House Jn		08/44½	08/39	..	..		10/05	10/08	..	10/18	10/27
	mgn	....	....	....	....		....	....	....	....	....
Stechford		..	..	09k*17	..		..	10g*17	..	..	..

Train ID		1L80EC	9M55AG	1O22CA	2N62EA	4Z30TD	2R63EA	2W42ET
Departs		14.04	12.00	14.27	15.46		15.45	16.01
From		Liverpool	Glasgow	Manchester	Four		Lichfield	Walsall
To		Lime Birmingham	Central London	Piccadilly Bournemouth	Oaks Longbridge	Rugby	City Redditch	Wolverhmpn
Arrives		15.48	17.33	19.12	16.33	16.55	17.02	17.05
Accom Symbols		1	1	1				
Oper Char Symbols								
Timing Type		350	390	221	323	75C66S14	323	350
Days Run								
Staffrd Trnt Villy Jn	Dep	15/11	15/21	15/26	..	..	..	..
Rickerscote	Arr	....	....	....	....	....	....	....
	Dep	..	..	..	..	..	..	..
Penkridge	Dep	15.16	....	....	....	....	....	....
	mgn	..	..	..	..	..	..	..
WMI (SRFI)		....	....	....	....	15.35	....	....
Four Ashes Loop	Arr	..	..	..	..	..	..	..
	Dep	....	....	15/30½	....	....	....	....
	mgn	[1]	..	[1]	..	[1]	..	..
Bushbury Jn		15/23½	15/29½	15/34½	....	15/44	....	....
	mgn	..	..	..	..	..	..	..
Portbll Jn (Wst Mdln		....	....	....	....	15/49	....	....
	mgn	..	..	..	..	..	..	..
Darlaston Jn		....	....	....	....	15/52½	....	....
Pleck Jn		..	..	..	..	..	..	16/02½
	mgn	....	....	....	....	....	....	....
Bescot Jn		..	..	..	..	..	..	..
Bescot Stadium		....	....	....	....	15/54	....	16.04½
Bescot Up nd Dwn Gds		..	..	..	..	..	..	..
Bescot T.M.D.		....	....	....	....	....	....	....
Bescot Yard	Arr	..	..	..	..	..	..	..
	Dep	....	....	....	....	....	....	....
Bescot Engineers Sdgs		..	..	..	..	..	..	..
Bescot Up Loop		....	....	....	....	....	....	....
Newton Jn.		..	..	..	..	..	..	..
Tame Bridge Parkway		....	....	....	....	....	....	16a07½
Hamstead		..	..	..	..	..	..	16.11
	mgn	....	....	....	....	(2)	....	....
Perry Barr North Jn		..	..	..	..	16/00	..	16/12½
Perry Barr		....	....	....	....	....	....	16a14½
Witton		..	..	..	..	..	..	16.17
	mgn	....	....	....	....	(4)	....	....
Aston		..	..	..	16a03	16/06½	16.13½	16a19½
Duddeston		....	....	....	16.06	....	....	16.22½
Proof House Jn		..	16/13	16/06	16/08	..	16/19	16/27
	mgn	....	....	....	....	....	....	....
Stechford		..	16/15½	16/09	..	16h*17½	..	..

13. Appendix F: Example of Down direction trains waiting at Bushbury Junction for patterned service passenger trains (plus extra freight)

This also shows the critical time at Aston and the trains either side of the path.

Train ID		2L18EA	4Z09TD	9S47LX	1M25FX	1F37FC	4F68FA	2U19EA	4Z09TD
Departs		08.43	08.21	07.43	07.00	09.36		08.32	08.21
From		Longbridge	Rugby	London Euston	Cardiff Central	Birmingham New		Redditch	Rugby
To		Lichfield City	FOUR ASHES	Glasgow Central	Manchester Piccadilly	Liverpool Lime	Liverpool Bulk	Four Oaks	
Arrives		09.40	10.11	13.15	10.59	11.09½	12.45	09.41	
Accom Symbols				1	1	1			
Oper Char Symbols									
Timing Type		323	75C66S14	390	221	350	75-TR40	323	75C66S14
Days Run									
	mgn	..	..	..	..	..	..	..	..
Stechford		09/07½	09/05½	08/58½	09/02	09/17	09/19½	09/17	09/19½
Proof House Jn		09/07½	09/05½	08/58½	09/02	09/17	09/19½	09/17	09/19½
Duddeston		09/07½	09/05½	08/58½	09/02	09/17	09/19½	09/17	09/19½
Aston Signal NS65		09/07½	09/05½	08/58½	09/02	09/17	09/19½	09/17	09/19½
Aston	mgn	09p11	[2](4) 09/17	09/17	09/17	09/17	09/19½	09a22½	09/19½
Witton		09p11	[2](4) 09/17	09/17	09/17	09/17	09/19½	09a22½	09/19½
Perry Barr		09p11	[2](4) 09/17	09/17	09/17	09/17	09/19½	09a22½	09/19½
Perry Barr North Jn	mgn	09/20	09/20	09/20	09/20	09/20	09/20	09/20	09/20
Hamstead		09/20	09/20	09/20	09/20	09/20	09/20	09/20	09/20
Tame Bridge Parkway		09/20	09/20	09/20	09/20	09/20	09/20	09/20	09/20
Newton Jn.		09/20	09/20	09/20	09/20	09/20	09/20	09/20	09/20
Bescot Engineers Sdgs		09/20	09/20	09/20	09/20	09/20	09/20	09/20	09/20
Bescot Yard	Arr	09/20	09/20	09/20	09/20	09/20	09/20	09/20	09/20
Bescot T.M.D.	Dep	09/20	09/20	09/20	09/20	09/20	09/20	09/20	09/20
Bescot Up nd Dwn Gds		09/20	09/20	09/20	09/20	09/20	09/20	09/20	09/20
Bescot Stadium		09/25½	09/25½	09/25½	09/25½	09/25½	09/25½	09/25½	09/25½
Bescot Jn		09/25½	09/25½	09/25½	09/25½	09/25½	09/25½	09/25½	09/25½
Pleck Jn		09/25½	09/25½	09/25½	09/25½	09/25½	09/25½	09/25½	09/25½
Darlaston Jn	mgn	09/27	09/27	09/27	09/27	09/27	[1] 09/42	09/27	k Bushbury arrive
Portbll Jn (Wst Mdl)	mgn	09/31	09/31	09/31	09/31	09/31	(2) 09/48½	09/31	0936
Bushbury Jn	mgn	10k*03	10k*03	09/41½	09/51½	09/57	10/01	10k*03	10k*03
Bushbury Jn, D.G.L.		10k*03	10k*03	09/41½	09/51½	09/57	10/01	10k*03	10k*03
Four Ashes Loop	Arr	10k*03	10k*03	09/41½	09/51½	09/57	10/01	10k*03	10k*03
WMI (SRFI)	mgn	0936	k Bushbury arrive 0936	09/54½	09/54½	09/54½	09/54½	09/54½	[1] 10.11
Penkrige	Dep	0936	k Bushbury arrive 0936	09/54½	09/54½	09/54½	09/54½	09/54½	10.04
Staffrd Trnt Vily Jn	mgn	09/49	09/49	09/58½	09/58½	10/08½	10/12½	(1) 10/12½	10/12½
	Dep	09/49	09/49	09/58½	09/58½	10/08½	10/12½	(1) 10/12½	10/12½
	ine	09/49	09/49	09/58½	09/58½	10/08½	10/12½	(1) 10/12½	10/12½

Train ID		2L24EA	4Z11TE	9S54LX	1M29FX	1F39FC	4Z11TE	4M93PG	2U25EA
Departs		09.43	09.23	08.43	07.02	10.36	09.23	04.53	09.32
From		Longbridge	Rugby	London Euston	Paignton	Birmingham New	Rugby	Soton W	Redditch
To		Lichfield City		Edinburgh	Manchester Piccadilly	Liverpool Lime		Trafford Park	Four Oaks
Arrives		10.40		14.17	11.59	12.09½		13.45	10.41
Accom Symbols				1	1	1			
Oper Char Symbols									
Timing Type		323	75C66S14	390	221	350	75C66S14	75C66S16	323
Days Run								[MSX]	
Stechford	mgn	..	..	[1] 09/59	..	..	..	..	..
Proof House Jn		10/07	..	10/01½	10/21	..	..	..	10/17
Duddeston		..	..	..	..	..	..	..	10.19½
Aston Signal NS65		..	..	..	..	..	..	..	..
Aston	mgn	10.10½	[2](4) 10/17	..	..	..	..	..	10a22½
Witton		..	..	..	..	..	..	..	..
Perry Barr		..	..	..	..	..	..	..	..
Perry Barr North Jn	mgn	..	..	..	..	..	..	..	..
Hamstead		..	10/20	..	..	..	..	..	..
Tame Bridge Parkway		..	..	..	..	..	..	..	..
Newton Jn.		..	..	..	..	..	..	..	..
Bescot Enginers Sdgs		..	..	..	..	..	..	..	..
Bescot Yard	Arr	..	..	..	..	..	..	..	..
Bescot T.M.D.	Dep	..	..	..	..	..	..	..	..
Bescot Up nd Dwn Gds		..	..	..	..	..	..	..	..
Bescot Stadium		..	10/25%	..	..	..	..	..	..
Bescot Jn		..	..	..	..	..	..	..	..
Pleck Jn		..	..	..	..	..	..	..	..
Darlaston Jn	mgn	..	..	..	..	..	k Bushbury arrive	f 10/56%	..
Portbil Jn (Wst Mdln	mgn	..	..	..	..	..	1036	11/02½	..
Bushbury Jn	mgn	..	..	..	..	..	..	11/07	..
Bushbury Jn, D.G.L.		..	10k*59	10/41½	10/51½	10/57	10k*59	..	..
Four Ashes Loop	Arr	..	..	..	..	..	..	..	..
	Dep	..	k Bushbury arrive	..	..	..	..	..	..
WMI (SRFI)	mgn	..	1036	10/44½	10/54½	11/00	[1] 11.07	..	..
Penkridge	Dep	..	..	..	..	11.04	..	..	..
Staffrd Trnt Villy Jn	mgn	..	..	..	..	..	..	..	..
	Dep	..	..	10/49	10/58½	11/08½	..	11/22	..
	Ine	..	..	SL	SL	SL	..	SL	..

14. Appendix G: Early morning Down direction trains from Rugby.

The train highlighted in gold is timed as 75C66S12 for comparison purposes.

Train ID		9G49EW	4L93QC	4Z91TD	4Z93TD	4Z95TD	4M72QB	4M72QC	4Z01TD	6M14QB	4M31QZ	4Z03TD	4Z03TE
Departs		23.30	00.50				00.57	00.57		00.18	00.53		
From		London	Daventry				Tilbury	Tilbury		Dollands Moor	Dollands Moor		
To		Euston	GBRF				R.C.T.	R.C.T.					
		Wolverhmpn	Peterborough	WMI	WMI	WMI	Lawley Street	Lawley Street	WMI	Ditton Foundry	Hams Hall	WMI	WMI
Arrives		02.05	04.40	02.26	03.26	04.26	05.50	05.50	05.34	08.26	05.33	06.06	06.06
Accom Symbols		1											
Oper Char Symbols													
Timing Type		390	75C66S14	75C66S14	75C66S14	75C66S14	75C66S12	75C66S12	75C66S14	60-92S16	75C66S16	75C66S12	75C66S14
Days Run		*MSX*	[MSX]				[MSX]	[MSX]		[WFO]	[MSX]		
Rugby	Dep	01q02	..	01.15	02.15	03.15	04/15	04/15	04.23	04C30	04C51	04.53	04.53
	lne	SL	..	DCL	DCL	DCL	DCL	DCL	DCL	FL	SL	DCL	DCL
Rugby Trnt Vily Jnct		01/04	..	01/17	02/17	03/17	04/17	04/17	04/25	04/33	04/53	04/55	04/55
Gibbet Hill Jn		..	..	..	..	..	..	..	..	..	..	..	..
Coventry CE Sdgs		..	..	..	..	..	..	..	..	..	..	..	..
	mgn	[1]	..	[1]	[1]	[1]	..	..	[1]	..	..	[1]	[1]
Coventry	Arr	01.13	..	..	..	..	..	..	..	..	..	..	..
	plt	3	..	3	3	3	..	..	3	..	..	3	3
Coventry	Dep	01p14½	..	01/27½	02/27½	03/27½	..	..	04/35½	..	..	05/05	05/05½
	lne	..	..	..	..	..	..	..	..	..	..	..	..
Coventry North Jn		..	..	..	..	..	..	..	..	..	..	..	..
Coventry Yard		..	..	..	..	..	..	..	..	..	..	..	..
Coundon Rd LC		..	..	..	..	..	..	..	..	..	..	..	..
Canley		..	..	..	..	..	..	..	..	..	..	..	..
Tile Hill		..	..	..	..	..	..	..	..	..	..	..	..
Berkswell		..	..	..	..	..	..	..	..	..	..	..	..
Hampton-in-Arden		..	..	..	..	..	..	..	..	..	..	..	..
	mgn	..	..	..	..	..	..	..	..	..	..	..	..
Birmingham Interntnl		01pb25	..	01/39	02/39	03/39	..	..	04/47	..	..	05/16	05/17
Marston Green		..	..	..	..	..	..	..	..	..	..	..	..
Lea Hall		..	..	..	..	..	..	..	..	..	..	..	..
	mgn	..	f	..	..	..	..	..	..	..	..	..	..
Stechford		01/28½	01/35½	01/45½	02/45½	03/45½	..	..	04/53½	..	..	05/21½	05/23½
Proof House Jn		01/33	..	..	..	..	..	..	..	..	..	..	..
Duddeston		..	..	..	..	..	..	..	..	..	..	..	..
Aston Signal NS65		..	..	..	..	..	..	..	..	..	..	..	..
	mgn	..	..	[2]	[2]	[2]	..	..	[2]	..	..	[2]	[2]
Aston		..	01/41	01/53	02/53	03/53	..	..	05/01	..	..	05/29	05/31

15. Appendix H: Down direction train showing recess at Coventry North Junction for 9SXX service to pass

Also shows trains immediately preceding and following, plus the pattern at Aston

Train ID		2Y59ET	4Z09TD	6M46FA	9S47LX	2L18EA	4Z09TD	1Y03EB	2U19EA
Departs		06.34		04.51	07.43	08.43	08.21	07.13	08.32
From		London Euston		Ripple Lane	London Euston	Longbridge	Rugby	London Euston	Redditch
To		Birmingham New	WMI	Peak Forest	Glasgow Central	Lichfield City	WMI	Birmingham New	Four Oaks
Arrives		09.01	10.11	14.19	13.15	09.40	10.11	09.17	09.41
Accom Symbols		1			1			1	
Oper Char Symbols									
Timing Type		350	75C66S14	60-66S06	390	323	75C66S14	350	323
Days Run				[MO;Y]					
Rugby	Dep	08.17½	08.21	08*23	08/34	..	..	08.35½	..
	Ine	DCL	DCL	SL	FL	....	....	DCL	....
Rugby Trnt Vily Jnct		08/19	08/23	08/25	08/34½	..	..	08/37½	..
Gibbet Hill Jn		....	....	....	....	....	....	....	....
Coventry CESdgs		....	....	....	....	....	....	....	....
	mgn	[1]	[1]	....	[1](½)	....	....	[½]	....
Coventry	Arr	08.29	..	..	08.42	..	..	08D46	..
	plt	3	4	....	3	....	4	4	....
Coventry	Dep	08@30	08/35½	..	08q44	..	08/35½	08@pD51	..
	Ine	....	SL	....	....	....	SL	....	....
Coventry North Jn		..	08k*47	..	..	..	08k*47	..	..
Coventry Yard		....	....	....	....	....	....	....	....
Coundon Rd LC		..	..	..	..	..	..	..	..
Canley		08.33	....	....	....	....	....	....	....
Tile Hill		08a37	..	..	..	..	..	08p56	..
Berkswell		08.40	....	....	....	....	....	....	....
Hampton-in-Arden		..	..	..	..	..	..	09pa02½	..
	mgn	....	....	....	....	....	f	....	....
Birmingham Interntnl		08a46	..	..	08qc55	..	08/59	09pa06	..
Marston Green		08.49	....	....	....	....	....	09p09	....
Lea Hall		08a52½	..	..	..	..	..	..	..
	mgn	....	....	....	....	....	....	....	....
Stechford		08.55	..	..	08/58½	..	09/05½	09/11½	..
Proof House Jn		08/58½	....	....	09/02	09/07½	....	09/15	09/17
Duddeston		..	..	..	..	..	..	..	09.19½
Aston Signal NS65		....	....	....	....	....	....	....	....
	mgn	..	..	..	..	..	[2](4)	..	..
Aston		....	....	....	....	09p11	09/17	....	09a22½

16. Appendix I: Example of Up Direction train typical path from Stechford in context with 9MXX and 1YXX services

Also shows the situation at Coventry in relation to the 2GXX service, at Rugby with the 1UXX service and 5B04 as referred to in the report

Train ID		1Y46EA	9M53EX	2G48EB	1U32ES	1A39EW	4Z26TD	1Y52EA	5B04EA
Departs		13.14	10.00	14.14	13.02	13.35	13.35	14.14	13h23
From		Birmingham	Glasgow	Nuneaton	Crewe	Manchester	WMI	Birmingham	Soho
To		New London	Central London		London	Piccadilly London		New London	LMD Wolverton
Arrives		Euston 15.25	Euston 15.33		Euston 15.50	Euston 15.39		Euston 16.27	Centre 15h52
Accom Symbols		1	1		1	1		1	
Oper Char Symbols									
Timing Type		350	221T	153	350-110	390	75C66S14	350	323
Days Run									[MO]
Aston	mgn	..	..	..	..	..	(3½) 14/06	..	(4½) 14/07
Duddeston		..	..	..	..	..	..	..	..
Proof House Jn		13/16	14/12	..	..	..	..	14/16	..
Stechford	mgn	13.20½	14/15	..	..	..	14h*17	14.20½	14/24
Lea Hall		13a23½	..	..	..	..	..	14a23½	..
Marston Green		13.26½	..	..	..	..	..	14.26½	..
Birmingham Interntnl	mgn	..	..	..	..	..	(1) 14/24	..	(4½) 14k*49
Hampton-in-Arden		13a30	14b20	..	..	..	h	14a30	e
Berkswell		13.33	..	..	..	..	Stechford	14.33	..
Tile Hill		13a38	..	..	..	..	arrive	14a38	..
Canley		13.41	..	..	..	..	14.12½	14a44½	..
Counton Rd LC		13a44½	..	14/32½	..	..	..	..	..
Coventry Yard		..	..	..	..	..	..	..	..
Coventry	mgn	..	[1]	[1]	..	..	[1](3)	..	..
	Arr	13.47	14.29	14.36	..	..	..	14.47	..
	plt	2	1	2	..	..	1	2	..
Coventry	Dep	13@48	14.30½	..	..	..	14/39	14@48	..
Coventry CE Sdgs		..	..	..	..	..	..	..	..
Gibbet Hill Jn		..	..	..	..	..	..	..	..
Rugby Trnt Villy Jnct	mgn	..	[1]	..	[1]	[1]	[1](2)	..	..
	Ine	13/56	14/40	..	14/49½	14/50½	14/51½	14/56	..
Rugby	Arr	UNL	FL	..	UNL	FL	SL	UNL	..
		13.58	14/40½	..	14.51	14/51	14.53½	14.58	..

Appendix 9

Scale of the Development Proposed (Part 1)

In Response to: ExQ1 Number 1.2.18

Four Ashes Limited

SCALE OF DEVELOPMENT PROPOSED (PART 1) (RESPONSE TO EXQ1.2.18)

1 Summary

- 1.1 The Applicant's justification for the volume of warehousing proposed as part of WMI is based upon the scale of pent up market demand and the amount of space that the site is able to support in the context of its surroundings. The urgent need for rail served logistics space in this part of the region was identified in the evidence base for the West Midlands Regional Spatial Strategy over 10 years ago. This urgent need continues to go unmet. There are no other proposals for a SRFI in the area and no alternative sites in the search area, a search area that has been agreed with South Staffordshire District Council and Staffordshire County Council.
- 1.2 The application site represents a unique opportunity to provide a SRFI in a 'geographically optimal' location from a rail perspective (Para 3.2 of the SoCG with Network Rail, Document 8.1, AS-025).
- 1.3 The site search exercise has been thorough and has demonstrated that there is no suitable alternative site to serve this area of the West Midlands, to contribute to the gap in the network of SRFIs in this area, and to help to meet the increasing demand for rail served warehouse space.
- 1.4 The site is also able to contribute to the employment needs of the Black Country. The Black Country Core Strategy is under review and at paragraph 3.28 the draft Issues and Options report of July 2017 confirms the intention to propose a strategy that includes reliance on WMI.
- 1.5 The quality and suitability of the site to meet the demand has been thoroughly assessed through the DCO pre-application process.
- 1.6 Rail-based infrastructure schemes require significant 'up front' costs and it is important to maximise the potential of this investment. The ability of the developer to derive income from the warehousing element is an important part of the economics of the scheme and the decision to invest.
- 1.7 As compared to the M1 corridor (from M1/M6 down to Milton Keynes (J13 M1) serviced land values in the area around WMI are reaching around half the price per hectare. Whilst SRFI in either location will aim to maximise the opportunity to achieve rental income from its warehousing, a scheme with higher land values will be able to 'pay for' the infrastructure with less floorspace.
- 1.8 The scale of the development proposed seeks to maximise the potential of the site to meet the market demand, to create a successful SRFI which will increase transfer of freight from road to rail, to contribute to the economy and to direct and indirect employment opportunities in the area.

2 The NPS

- 2.1 The NPS carries an expectation that SRFI will be large in scale.
- 2.2 At paragraph 2.55 Table 4 of the NPS highlights some of the problems of smaller rail terminals in providing the scale economies, operating efficiencies and benefits of SRFI to meet the increasing performance and efficiencies required of our logistics sector.
- 2.3 The NPS also identifies the factors which are likely to drive both the need for and scale of SRFI, including in particular:
 - the changing needs of the logistics sector; and

- the scale of rail freight growth (which both generates the need for SRFI but also which will not be fulfilled without a network of SRFI).

2.4 The NPS is clear that there are a number of exacting locational requirements for SRFI and then explains that *“given the locational requirements and the need for effective connections for both rail and road, the number of locations suitable for SRFI will be limited”* (NPS paragraph 2.56).

2.5 One important consequence of the scale of rail freight growth and the likely scarcity of suitable sites is explained at paragraph 2.50 of the NPS, as follows:

“They (the forecasts) also indicate that new rail freight interchanges, especially in areas poorly served by such facilities at present, are likely to attract substantial business, generally new to rail.”

2.6 These factors are particularly relevant to WMI. As the paragraphs below explain, a combination of pent up demand and the scarcity of supply contribute to a substantial need. The absence of alternative locations in which to meet that need and the optimal nature of the WMI location combine to justify a large scale SRFI.

2.7 As explained further below, the scale of WMI is also strongly influenced by:

- the economics of the necessary investment
- by the suitability of the location and
- the characteristics of the specific site proposed.

2.8 Much of the material reviewed below can be found in various locations within the application documents (and references are provided) but other information is newly provided in response to the question posed.

3 The Scale of Need

3.1 Chapter 5 of the Planning Statement (Document 7.1A, APP-252) explains that a number of studies have sought to establish the need for rail served logistics in the West Midlands. ExQ1 1.2.5 asks about the historic definition of a need of 200-250 ha. For the purposes of this answer, it is relevant to identify:

- the need for rail served logistic sites was the subject of specific study to inform the West Midlands RSS. Whilst the RSS programme was abolished by the Government, the evidence base remains highly relevant;
- the work was refreshed for the local authorities in the URS Study published in April 2013, which confirmed that the methodology used in the RSS Studies remained appropriate and (at 13.4.4) that the previously derived quantification of need between 200-250 ha *“holds good”* (paragraph 13.3.4, URS Study (2013)); and
- the applicant’s answer to ExQ1 1.2.5 explains the methodology of the RSS studies but also demonstrates how the scale of requirement is even greater if the West Midlands is to get anywhere near meeting the objectives of government policy to locate distribution buildings with access to rail in the interests of the economy and the environment.

3.2 As part of the Applicant’s submissions for Deadline 2, an update to the Market Assessment has been provided (Document 7.4A, submitted at Deadline 2).

3.3 The Market Assessments (Document 7.4, APP-257 and Document 7.4A) covers the following areas:

- the Stoke and Staffordshire LEP;
- the Black Country LEP; and
- the Greater Birmingham and Solihull LEP

3.4 Chapter 4 of The Updated Market Assessment (Document 7.4A, submitted at Deadline 2) explains the growth of rail freight by reference to rapidly developing trends in the logistics sector, all of which are driving an increase in the scale of the demand for rail-based distribution and in the scale of individual warehouses. In particular:

- the growth in demand for rail-served floorspace and SRFIs is principally from retail and 3PL Logistics operators based on in-bound supply chain movements from the ports (paragraph 4.2.11 of the Updated Market Assessment);
- E-commerce continues to revolutionise the logistics sector and is expected to secure 24.5% of all retail sales on line by 2022 (paragraph 4.3.4 of the Updated Market Assessment, Document 7.4A);
- the strength of this trend is apparent from a recent research report published by the British Property Federation (“What Warehousing Where”, the British Property Federation (Turley, 2019)), which provides information (shown at Figure 1 of this note) about trends in the e-tailing sector;
- it is estimated that every additional €1bn of on-line sales results on average in an additional 72,000 sq m of demand for warehouse space (paragraph 4.3.8 of the Updated Market Assessment);
- there is a continuing trend towards larger distribution warehouses (paragraphs 4.4.2-4.4.5 of the Updated Market Assessment, Document 7.4A).

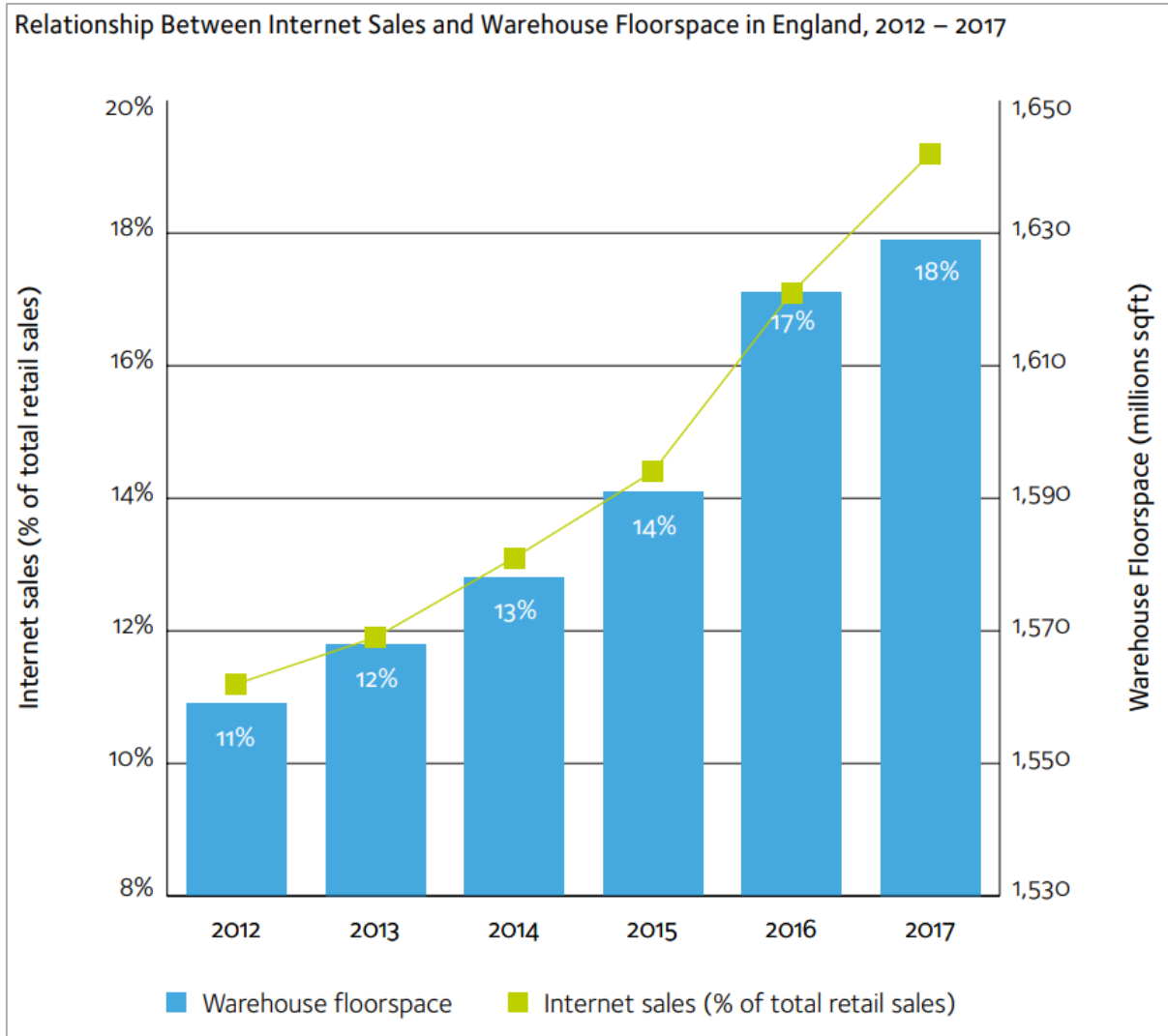


Figure 1: Relationship Between Internet Sales and Warehouse Floorspace in England, 2012 – 2017 (Figure 3.9) (“What Warehousing Where”, the British Property Federation (Turley, 2019))

- 3.5 These trends suggest that any calculation of need undertaken 10 or more years ago is only likely to under-estimate the requirement for new rail served logistics floorspace. This conclusion is borne out by the strength of demand evidenced in the updated Market Assessment (Document 7.4A, submitted at Deadline 2) in Chapters 5 and 6.
- 3.6 The Applicant’s answer to ExQ1.2.5 is also directly relevant in this context.
- 4 Increasing need for SRFIs to serve the growth in Rail Freight**
- 4.1 The NPS sets out the Government’s position that there is a compelling need for an expanding network of SRFI across the regions to accommodate the long-term growth of rail freight (para 2.50), over a wide range of locations (para 2.58). The NPS notes the Network Rail forecasts which are considered robust

and confirm the scale of pressure and need, even if these are not sufficiently granular to allow site-specific need cases to be demonstrated (paras 2.49-2.50).

- 4.2 The NPS does not seek to impose upper or lower levels of floorspace associated with this expanded network but describes SRFI as "large" (para 4.84/4.86), at least 60 Ha in size (Planning Act 2008 section 26) with a number of rail connected or rail accessible buildings (para 4.88).
- 4.3 The Network Rail forecasts to which the NPS refers (Freight Market Study 2013 & Rail Freight forecasts to 2023/4, 2033/4 and 2043/4, MDS Transmodal 2013) have sought to quantify the scale of likely demand for rail-served floorspace to 2043, drawing on the known proposals and prospects of developers to create SRFI at various locations across England. This included reference to sites in the "Four Ashes / F'stone [Featherstone]" area. The forecasts have then sought to estimate the scale of floorspace and associated rail freight traffic potential which could be generated from each site by 2043, from which to then determine the unconstrained demand for network capacity which this quantum of traffic would represent. On this basis, the greater the rail-served floorspace at a particular location (and across the network in general), the greater the rail freight traffic potential is expected to be, given that each freight train will typically require a critical mass of 30-40 lorry loads per train in each direction to achieve viability.
- 4.4 Essentially the greater the floorspace at a SRFI the greater the ability to provide viable full trainloads to a number of destinations and therefore attract as much volume as possible to rail.
- 4.5 Further assessment by the Department for Transport (Rail Freight Strategy 2016) and Network Rail (Freight Network Study 2017, Freight & National Passenger Operators Route Strategic Plan 2018) have then considered how the unconstrained forecasts might be influenced by external constraints, including a failure to achieve the levels of rail-served floorspace envisaged. These studies have reiterated the NPS, stating:

"To understand the likely growth potential of the rail freight industry in the light of new market developments and network constraints, DfT commissioned Arup to assess rail freight growth potential by commodity and review the key capacity constraints that will limit this growth. This assessment is not intended to replace or to be directly comparable with the assessment by Network Rail. Rather, it is intended to support the development of this Rail Freight Strategy by providing an insight into the growth that might be achievable on a constrained network, the barriers to future rail freight growth and the impact of different policy interventions...the key constraint to unlocking potential in this [domestic intermodal] sector - availability / construction of suitable rail-connected terminal facilities including SRFIs."

(DfT Rail Freight Strategy 2016, pages 17 and 21)

"in supporting intermodal growth, it is essential that new warehousing and terminal facilities be enabled with a rail connection where practically possible."

(Freight Network Study 2017 section 9.2.2)

"Additional inland terminal facilities are required and this need is primarily addressed by Strategic Rail Freight Interchange (SRFI) developments. SRFI's are typically 60Ha plus in size. As the Network Rail freight estate lacks locations of this scale in the UK's distribution heartland, such facilities are typically privately developed on third party land. They feature extensive on-site commercial warehousing. This is necessary to

attract retail customers given their business models and to generate returns sufficient to justify the rail infrastructure investment costs.

In these cases, [Network Rail's] role varies from advocacy for planning consent through facilitation of physical connections to the provision of suitable capacity to run trains."

(Freight & National Passenger Operators Route Strategic Plan 2018 section 5.12)

5 Scarcity of supply and alternatives

- 5.1 As the NPS notes at paragraph 2.50, SRFI are likely to be particularly attractive to business in areas poorly served by such facilities.
- 5.2 The Updated Market Assessment (Document 7.4A) confirms that there is only one rail-served site in the market area (Chatterley Valley West), which is subject to a number of constraints and is not of sufficient scale to be classed as a SRFI. With the exception of WMI, there are no rail-served sites available or proposed within the market assessment area.
- 5.3 This is confirmed in the Alternative Sites Assessment (Document 7.2, APP-255) at Section 3.2 which identifies a gap in the intended national network of SRFI of 120km between Birch Coppice/Hams Hall and the SRFIs at Widnes and Port Salford. Figure 3 of the ASA identifies the distribution of SRFI.
- 5.4 As set out in 16.2.10 of the Planning Statement (Document 7.1A, APP-252) South Staffordshire provides an exceptional location for freight distribution, with 88% of the UK population within a 4.5 hour HGV drive-time (a day's round trip) of the Site, making it a highly suitable location for both national and regional distribution.
- 5.5 Despite the relatively similar scale of the East Midlands and West Midlands regions, the East Midlands is served by a growing cluster of large scale SRFI. In contrast the West Midlands is currently served by Hams Hall and Birch Coppice in north Warwickshire. As set out in 6.4.5 – 6.4.12 of the Updated Market Assessment these sites are outside the market area and have very limited capacity for additional space.
- 5.6 The Alternative Sites Assessment confirms the absence of SRFI to serve a population of 2.3 million people, 71,000 businesses and 1 million jobs within its search area (paragraph 4.1.11). The West Midlands region, of course, has one of the strongest manufacturing bases in the UK and, of all regions, is more likely to benefit from the cost-effective delivery of materials and the ability to export products by rail.
- 5.7 The Alternative Sites Assessment (Document 7.2, APP-255) is considered to be complete, comprehensive and conclusive. There are no other suitable sites within the search or market area for the development of a SRFI. **If the need is to be addressed in line with national policy, therefore, optimum use must be made of the opportunity at WMI.**

6 The economies of scale

- 6.1 The URS Study confirmed the basic economics of SRFI development:

"The development of multi-modal interchange centres or SRFIs is a major investment normally undertaken by private developers. Infrastructure, land and development cost may amount to many 10s of millions of pounds and developers make their return from the leases on distribution warehouses. Rail and road

access provides the attraction for retail logistics operators to use the site, but to justify such substantial investment there needs to be a large concentration of warehouses and also the capacity for further expansion.”

(URS Study 2013, paragraph 3.1.16)

- 6.2** It is not surprising, therefore, that modern SRFI developments are large in scale. As the Planning Statement notes at 5.4.2, only 2 SRFIs to date have gone through the DCO regime, both of a similar scale. The DIRFT III extension is approximately 345 ha, providing up to 7.9 million sq ft of rail served floorspace and it represents an extension to the existing 178 ha DIRFT I and II sites, so that on completion DIRFT will total 523 ha. The relatively recently consented East Midlands Gateway is approximately 336 ha, providing up to 6 million sq ft of rail served floorspace. Three other SRFI proposals are currently the subject of DCO pre- application or applications and they respectively comprise 200 ha, 250 ha and 255 ha with rail-served floorspace ranging from 5 million sq ft - 7.4 million sq ft. All are in the East Midlands in relatively close proximity to existing or consented SRFI.
- 6.3** At WMI, the primary infrastructure is estimated to cost £117m, of which the rail connection and terminal is costed at £40.6m. Occupiers are attracted to schemes which provide a modal choice and they will pay the terminal operator “*per box*” to transfer goods between road and rail, but they will not expect to pay an additional land or rental premium. Rail infrastructure may increase the attractiveness of the development to occupiers but it does not generate a rental premium, so that the only way in which the substantial capital investment in rail infrastructure can be recouped is by providing distribution floorspace on a sufficient scale and maximising the revenue of the rail terminal itself.
- 6.4** As compared to the M1 corridor (from M1/M6 down to Milton Keynes (J13 M1) serviced land values in the area around WMI are reaching around half the price per hectare. Whilst SRFI in either location will aim to maximise the opportunity to achieve rental income from its warehousing, a scheme with higher land values will be able to ‘pay for’ the infrastructure with less floorspace.
- 6.5** It follows that more warehouse floorspace is necessary for the scheme economics of a SRFI in the WMI area than in the East Midlands M1 corridor and the relative scale of some of the East Midlands SRFI developments reported above should be seen in this context.
- 6.6** The other relevant economic consideration is the economic benefit generated by larger scale SRFI. A larger SRFI can support more occupiers, which in turn can support more trains. The greater the scale of the activity, the more frequent the trains, the greater opportunity for sharing or splitting train loads between occupiers and the more possible it is to create a virtuous circle of opportunity to ensure a greater modal shift towards the use of rail. Other things being equal, therefore, larger SRFI will more closely serve the objectives of the NPS than smaller scale facilities – a principle established in the NPS itself.

7 Other relevant factors

- 7.1** Larger scale SRFI, of course, will generate larger economic benefits and be better able to support a greater workforce. These issues are addressed in response to ExQ1 question 1.4.1.
- 7.2** A particular aspect of this debate relates to the scale of employment requirement in the Black Country, which favours a location for a large-scale SRFI as close to the Black Country as practical. These issues

are developed in the “*Green Belt – An Update*” note submitted as Appendix 3 to the Applicant’s responses to the ExQ1.

- 7.3** Additionally, of course, any SRFI proposal must respond to the opportunities and constraints posed by its site and surroundings. For the reasons identified by Network Rail and in the Market Assessment report, WMI occupies an optimum location for SRFI development. It is ideally located on the most appropriate rail route with immediate access to the M6 motorway and it occupies a central location in the country providing the opportunity for companies to establish National Distribution Centres capable of serving the country as a whole, as well as serving the immediate area. These attributes, however, must be balanced with the constraints affecting the site.
- 7.4** The precise scale of development is also a response to the boundaries and constraints of the application site. The Examination will test the scale and acceptability of those proposals in terms of their impact on neighbouring properties, landscape, ecological, heritage and other interests. It is apparent from the application documents, however, that very significant care has been taken to respect the important features of the site. Green infrastructure in particular is a significant feature of the application proposals, accounting for 36% of the total land area, a consequence of which is that the proposed floorspace has been set well back from sensitive heritage, residential or other features to ensure a high quality, orderly development of the land. The floorspace proposed, therefore, is a function of the site capacity against the background of an even greater scale of need.

Appendix 10

Scale of the Development Proposed (Part 2)

In Response to: ExQ1 Number 1.2.19

Four Ashes Limited

SCALE OF DEVELOPMENT PROPOSED (PART 2) (RESPONSE TO EXQ1.2.19)

1 Introduction

- 1.1 For all the reasons set out in relation to ExQ1.2.18, the overall scale of the proposals brings significant benefits in relation to the economics of the development, the demand for rail services, potential HGV mileage savings and a significant contribution to the employment benefits.
- 1.2 The SRFI proposals are based upon direct access to the WCML and set within boundaries that are largely framed by strategic roads in the form of the A5 to the north, the M6 Motorway to the east, and the A449 to the west. The southern boundaries of the site are formed by the Canal and by the buffer area with the community of Calf Heath. These features represent robust, long-term Green Belt boundaries.
- 1.3 The Development Zone Parameter Plans (Document 2.5, APP-190) identify the area to the south of Vicarage Road proposed for development across three linked Zones (Zones 7a, 7b and 7c) with a total maximum warehouse floorspace of 101,333 sq m GEA. The warehouses in these development zones make an important contribution to the scale and critical mass of the SRFI. In addition to the warehousing a significant feature of this area is the proposed Calf Heath Community Park.
- 1.4 Including the area to the south of Vicarage Road creates a comprehensively planned development bringing with it the significant advantages of scale described in the response to ExQ1.2.18 and enables very high quality green and community infrastructure to be permanently in place to fully protect the community of Calf Heath and settle a more natural, permanent boundary for WMI.
- 1.5 If Vicarage Road were to be used as a Green Belt boundary, it would constrain the ability of the location to meet a very significant need. It would also require a loss of floorspace both south and north of Vicarage Road, with the development being set further back from Vicarage Road to create a permanent buffer.
- 1.6 Even in those circumstances, however, the land south of Vicarage Road represents a linked, contained area of land which would be the subject of obvious pressure for development.

2 Response

- 2.1 The area to the south of Vicarage Road is provided as an integral part of the Proposed Development, with the warehouses to be served from the rail terminal, in the same manner as the remainder of the development.
- 2.2 At just over 100,000 sq m, the warehouse in this area would make an important contribution to the scale and critical mass of the SRFI. For all the reasons set out in relation to ExQ1.2.18, the additional scale brings significant benefits in relation to the economics of the development, the demand for rail services, potential HGV savings and a significant contribution to the employment benefits of the proposal. On a pro-rata basis, the warehouses south of Vicarage Road would support c.560 person years of construction employment and c.1,000 full time operational jobs. Providing high quality modern warehousing with easy access to the rail terminal accords directly with the objectives of the NPS and, in principle, falls within the “*compelling need*” settled by paragraph 2.36 of the NPS.

2.3 These benefits need to be weighed against the impacts of the Proposed Development. In this respect, it is the Applicant's case that:

- The land is currently in agricultural use and is subject to no national, regional or local ecological designations. In fact, whilst the principal ecological interest of agricultural land is limited to arable margins and hedgerows, the Applicant's Ecology Baseline Report (ES Appendix 10.1, APP-087) records that the vast majority of hedgerows south of Vicarage Road were considered to be species poor and that no rare or notable species were identified during the site visit. None of the 31 hedgerows recorded south of Vicarage Road were considered "important" (see paragraph 3.7.13);
- The landscape character of the land in the area south of Vicarage Road is comparable with the remainder of the Site – it forms part of the Settled Heathlands Character Area and the landscape is identified of "medium" sensitivity in SSDC's 'Landscape Sensitivity Assessment for Employment Site Allocations' (2015) (see Figure 1).

2.4 SSDC's 'Landscape Sensitivity Assessment for Employment Site Allocations' (2015) identifies that the landscape has the capacity to accept development but advises:

"care would be needed to avoid or mitigate impacts on the canal corridor and its users, and on the dwelling within the site. The southern edge would also have to be mitigated to avoid significant effects on the rural valley to the south. The buildings should preferably be low to avoid wider impacts". (page 47)

2.5 It is apparent from the Illustrative Masterplan (Document 2.8, APP-205) and the Floor Levels and Building Heights Parameters Plan (Document 2.6, APP-195) that the advice provided in the District Council's assessment has been fully applied.

2.6 The development proposals in the area south of Vicarage Road feature a significant proportion of green infrastructure and an orientation of development plots designed carefully to avoid the more significant hedgerows which run across the site south-east from Vicarage Road. Calf Heath Community Park is an important feature of the proposals and its development enables the network of green infrastructure across the site to extend to and link with the canal side, bringing an important coherence to the green infrastructure strategy as a whole. There are relatively few visual receptors in close proximity to the land but particular care has been taken in relation to the community of Calf Heath.

2.7 As the Development Zone Parameters Plan (Document 2.5, APP-190) demonstrate, the developable land has been set well back from Calf Heath to front Vicarage Road, screened by mounding and extensive green infrastructure (see the Green Infrastructure Parameters Plan (Document 2.7, APP-200)).

2.8 As a result, the Landscape and Visual Chapter of the ES (Document 6.2, Chapter 12, APP-032) describes the very limited, screened views that would be available of the construction or the completed operational development and concludes that, for the majority of properties in Calf Heath, there would be no views of the completed development (paragraph 12.397).

2.9 From a noise perspective, the land south of Vicarage Road is significantly influenced by noise from the M6 motorway and the proposed warehouses are oriented to be single sided, with loading activity facing Vicarage Road. The Noise Chapter of the ES (Document 6.2, Chapter 13, APP-046) suggests that the receptors closest to the area south of Vicarage Road will be among the least-adversely affected

receptors close to the site. This conclusion is also reflected in the assessment outcomes set out in the ES Noise Addendum, which has been submitted at Deadline 2 (Addendum to the Chapter 13 of the ES).

- 2.10** Vicarage Road could form a Green Belt boundary, although to do so in the context of the Proposed Development would require a loss of floorspace both south and north of Vicarage Road, with the development being set further back from Vicarage Road to create a permanent buffer. By contrast, the southern boundaries of the area to the south of Vicarage Road are formed by the Canal and by the community of Calf Heath, which represent more robust, long-term Green Belt boundaries.
- 2.11** Planning the area to the south of Vicarage Road comprehensively with the Proposed Development brings the significant advantages of scale described above and enables very high quality green and community infrastructure to be permanently in place to fully protect the community of Calf Heath and settle a more natural, permanent boundary for WMI.
- 2.12** In terms of CA, the Applicant is in active discussion with the other major land holder south of Vicarage Road and is hopeful of being able to report that CA powers will not be necessary for that land interest. There is no dispute from landowners on the need for the land south of Vicarage Road to be included in the DCO consent boundary, just the manner of acquisition, which is a question of how to ensure deliverability of the overall scheme, rather than the issue of scale.