Parkside Strategic Rail Freight Interchange Report

Capability & Capacity Analysis – System Operator

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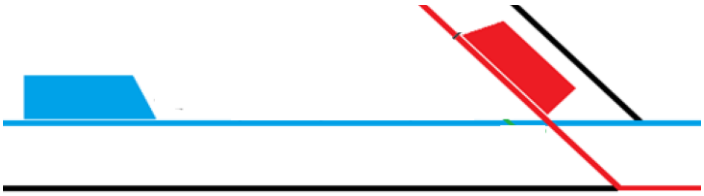
References				
Ref.	**Document Name**	**Document Ref. No.**	**Date**	**Rev**
1	Timetable Planning Rules 2018	London North Western	15/09/2017	V4.1
2	2027 HS2 ITSS Phase 2a			V0.7
3	Parkside SRFI Remit		13/04/2018	V1.0

Abbreviations	
Acronym	**Meaning**
HS2	High Speed 2
ITSS	Indicative Timetable Service Specification
TfN	Transport for the North
SRFI	Strategic Rail Freight Interchange
SRT	Sectional Running Time
WCML	West Coast Main Line

Glossary	
Term	**Meaning**
Concept Train Plan	A development timetable that shows how the capacity of a section of infrastructure could be used. It does not necessarily take into consideration current operational requirements or prejudice any future commercial aspirations of industry stakeholders.
Conflicting move	When the routes of two trains cross at a junction or set of points. For example, the blue and red trains cross over and create a conflicting move in the diagram below: 
Junction Margin	The time needed between two trains following a conflicting move between the two services at a junction.
Sectional Running Times	The time taken for a train to travel between two [timing] locations

Contents

Part A: **Executive Summary**

The former Parkside Colliery, which closed in 1993, has been identified as a suitable area for a Strategic Railway Freight Interchange (SRFI). The site is located to the east of Newton-Le-Willows on the Chat Moss Line near to Golborne Junction on the West Coast Main Line.

This analysis provides a high level view as to whether 12 paths into and 12 paths out of Parkside SRFI per day could be accommodated to service the proposed Parkside SRFI site. This was based initially on the quantum of services in the December 2018 timetable and then with the inclusion of HS2 Phase 2a services.

A 3 hour period 11:00 to 14:00 from the December 2018 timetable was used for the analysis, this is assumed to be repeated 4 times throughout the day to represent the off peak hours. Using this assumption, it has been identified that there is enough capacity to allow for 12 paths a day arriving and 12 paths a day departing Parkside SRFI.

Whilst these paths are available in the geographic scope of the study, the paths may not be compliant outside of the area considered for this analysis. Once further understanding of routeing and the timing of the freight services is known, this should be checked against the latest timetable to understand if capacity is available on the broader network.

Following this, the 2027 HS2 Phase 2a ITSS was taken into consideration. Given the considerable number of additional services, there was only capacity identified for 2 services out of Parkside SRFI and 1 service into Parkside SRFI for the three hours analysed. As a result, when this is repeated to provide an off peak representation, there would only be 8 paths departing from Parkside SRFI and 4 paths arriving to Parkside SRFI (see Table 1) which does not meet the requirements of 12 paths per day in each direction.

	Paths identified arriving into Parkside SRFI	Paths identified departing from Parkside SRFI
December 2018	12+	12+
2027 HS2 2a ITSS	4	8

Table 1: Summary of total available paths arriving and departing Parkside SRFI

As the 2027 ITSS is still being developed into a concept train plan, it would be worth revisiting this at a later date to understand if any more paths could be identified.

The exact infrastructure for Parkside SRFI isn't known at this time, so the junction margin at Parkside Junction was assumed to be 3 mins to reflect similar junction moves in the area. This would need further analysis to understand the capability of the network for crossing moves entering and exiting the SRFI.

Part B: **Introduction**

B.01 Background

The former Parkside Colliery, which closed in 1993, and a portion of Greenfield to the East of the Colliery has been identified as a suitable area for a Strategic Railway Freight Interchange (SRFI). The site is located to the east of Newton-le-Willows, and is dissected by the M6 motorway, the West Coast Main Line and the Chat Moss Line.

In support of the concept of a SRFI at Parkside, AECOM was commissioned to complete a Parkside Logistics Rail Freight Interchange Study (2016). That study concluded that there was sufficient demand from the industry to support a SRFI in the North West, with Parkside regarded as the best placed site to satisfy that need. It also concluded that eight trains per day could feasibly serve Parkside in the medium term, with discussions with Network Rail and Rail North(Now Transport for the North(TfN)) necessary in order to establish the viability of paths to forecast destinations in a pre and post HS2 environment within the current and future passenger franchises.

B.02 Aims and Objectives

This analysis aims to provide a high level view as to whether 12 paths per day could be achieved to service the proposed Parkside SRFI site; in conjunction with the forecast Northern Powerhouse Rail (NPR) and High Speed 2 (HS2) services.

B.03 Geographic Scope

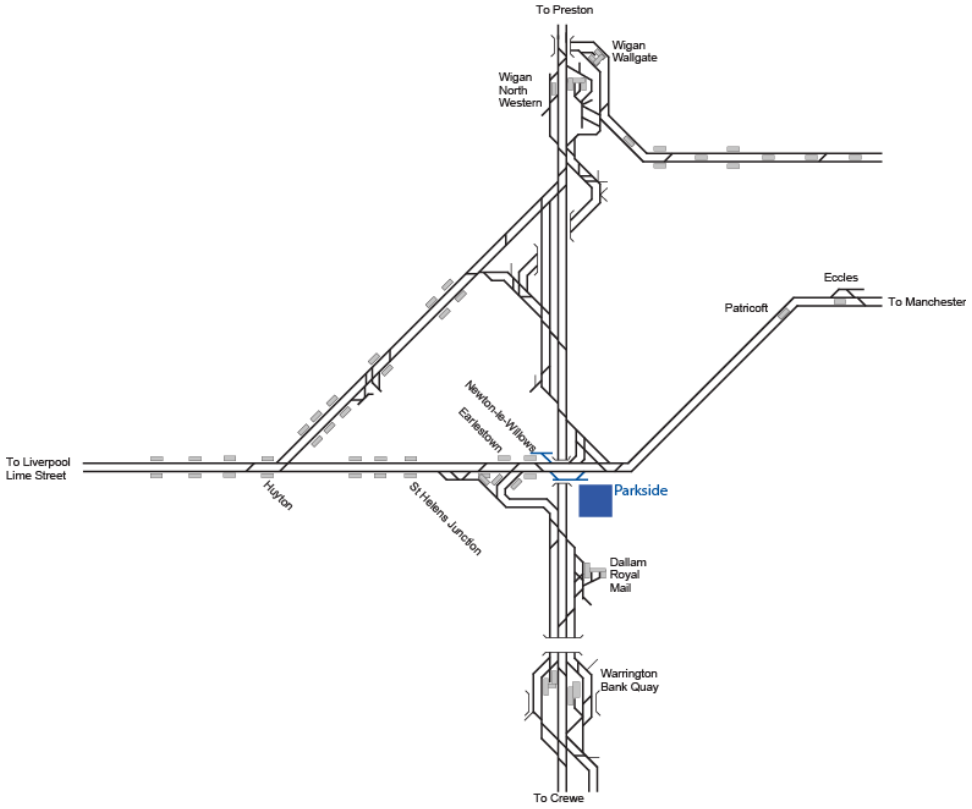


Figure 1: Proposed Parkside SRFI development location

B.03.01 Boundaries

Location	Line of Route Code
Warrington Bank Quay to Wigan North Western (West Coast Main Line)	NW1001
Huyton to Eccles (Chat Moss Line)	NW2015

Part C: **Findings**

C.01 December 2018 Timetable

Initially the approaches from North, South, East and West were analysed in isolation from each other. For each of these directions the quantum of potential freight paths available for arriving and departing Parkside SRFI were identified. Table 2 shows the maximum number of paths available for each of the directions analysed independently, across the 3 hour period.

	North	South	East	West
Arrival	5	11	7	8
Departure	6	6	13	7

Table 2: Paths available to/from Parkside SRFI in each direction when considered in isolation, across a 3 hour period

When all directions are considered simultaneously, a number of these paths will conflict and as a result they are not all possible. Appendix B – Routeing details how the routeing is impacted when multiple routes are considered. Figure 2 shows one example when the four directions are considered simultaneously. This example shows that the total number of paths across the 3 hour period is reduced.

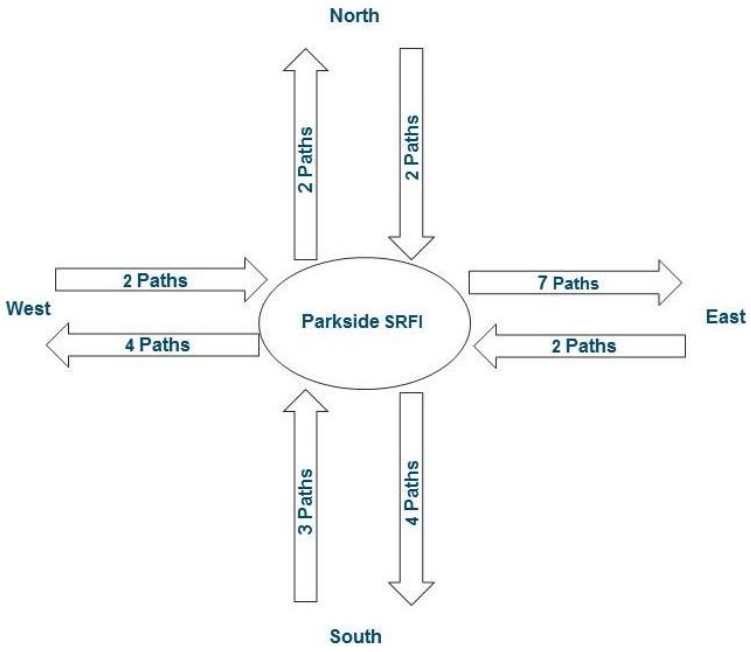


Figure 2: Example of possible maximum number of Train Paths to/from Parkside SRFI after trade-offs, across a 3 hour period

Over the 3 hour off peak period analysed it is possible to achieve 9 paths into Parkside SRFI. This supports the concept that over the course of a day 12 paths arriving into Parkside SRFI is achievable.

For departing trains, there were 17 paths identified in the 3 hours analysed. As a result over the course of a day there will be at least 12 paths available for departing trains.

Whilst it is possible to achieve 12 paths per day in and out of Parkside SRFI, these paths and the interactions they have with other services outside of the geographic scope detailed in the remit, have not been considered. Therefore these paths would need to be analysed in the wider geography to ensure they are compliant for their end to end journey.

C.02 HS2 Phase 2a ITSS

The 2027 HS2 ITSS Phase 2a V0.7 quantum of services has been compared with the quantum of services used in the December 2018 extract used for the first part of this analysis. There are a number of additional services that will be running through the geographic area being analysed in this project.

Additional Service	Routeing
London Euston to Preston	Through on the WCML
London Euston to Manchester Victoria	WCML and then Chat Moss to Manchester
Liverpool Lime St to Edinburgh Waverley	Chat Moss joining WCML at Golborne Jn

Liverpool Lime St to Crewe	Chat Moss joining WCML at Winwick Jn
Liverpool Lime St to Bradford Interchange	Chat Moss through to Manchester Victoria
Liverpool Lime Street to Warrington Bank Quay	Chat Moss joining WCML at Winwick Jn

Table 3: Proposed 2027 ITSS additional services including HST

Using the routeing of the additional services in the HS2 Phase 2a ITSS, it was possible to identify which paths identified in the December 18 analysis for Parkside SRFI would no longer be possible. These were identified simultaneously across the North, South, East and West directions.

Figure 3 shows the potential paths which are still available to and from Parkside SRFI.

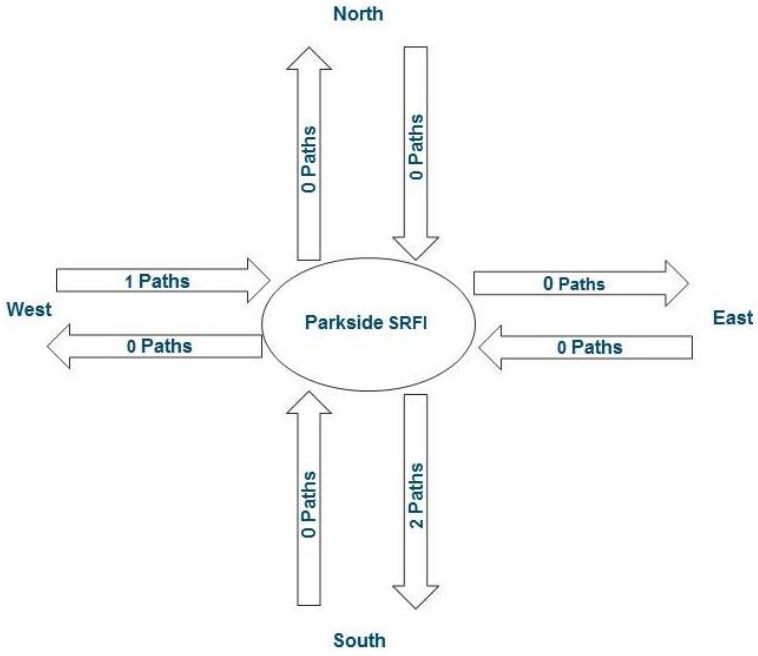


Figure 3: Example of possible Train Paths per 3 hour off peak period to/from Parkside SRFI after Trade-offs alongside the HS2 Phase 2a ITSS

Over a 3 hour off peak period there were only 2 paths out of Parkside SRFI and 1 into Parkside SRFI identified. If this were to be replicated throughout the day this would give only 8 services departing Parkside SRFI and 4 services arriving at Parkside SRFI. The paths identified result in movements arriving into Parkside SRFI from the West and departing Parkside SRFI towards the South, and are a result of the junctions movements required. Further analysis of re-routeing the freight paths may allow these to be utilised effectively in the wider geography. As an example, this would not enable a train to load at

Liverpool Docks, transit to Parkside SRFI, unload and then travel back to Liverpool Docks. However it may be possible for the train to load at Liverpool Docks, transit to Parkside SRFI, unload and then travel South on the1 WCML to another Freight Yard to load again.

The creation of concept train plans for the HS2 Phase 2a ITSS are still being developed by the Capability & Capacity Analysis HS2 team. As a result, the number of paths will be subject to change as more development work is completed.

C.03 Northern Powerhouse Rail

The Northern Powerhouse Rail project will mean that there will be a further uplift in services around the Parkside area. These additional services will not be introduced until after the HS2 is on the rail network. With the introduction of HS2, the desired number of freight paths required for Parkside SRFI would not be possible to achieve. Therefore the analysis for Northern Powerhouse rail services was not required as this would increase the quantum of freight services above the HS2 requirement.

Part D: **Conclusion**

Over the 3 off peak hours analysed in the December 2018 timetable, there is enough capacity to allow for 12 paths arriving and 12 paths departing Parkside SRFI.

Whilst these paths are available in the geographic scope the paths may not be compliant outside of the area considered for this analysis. Once further understanding of routeing and the timing of the freight services is known, this should be checked against the latest timetable to understand if capacity is available on the broader network.

Once the 2027 HS2 Phase 2a ITSS is considered, there are a considerable number of additional services per hour through the area. Given these additional services, there will only be paths for 2 services out of Parkside SRFI and 1 service into Parkside SRFI across the three hours analysed. As a result the 12 paths a day would not be achievable, there would be 8 departing from Parkside SRFI and 4 arriving to Parkside SRFI.

The 2027 Phase 2a ITSS is currently being developed and is subject to change. There is the potential for a reduction in the number of services within this ITSS, and this would have an impact on the findings of this report. If the quantum of services within the ITSS is reduced, then there may be an opportunity to identify more freight paths to/from Parkside. It is recommended re-visiting this at a later date to assess the impact of any changes to the ITSS.

Electrified freight traction is being investigated as part of the 2027 development for the WCML. This is to enable freight services to run faster. This increase in speed will allow the timetable to be condensed and potentially allow for an increase in the number of paths serving Parkside. Further analysis would be required, when more detail is available, to understand the possibilities of this move to the increased use of electric traction for freight services.

Junction margins around Parkside junction would also need further analysis to understand the capability of the network for crossing moves entering and exiting the SRFI.

Part E: **Appendix A - Technical Methodology**

A 3 hour off peak concept train plan was developed using the December 2018 draft timetable.

The timing loads used for different directions are listed in Table 4. SRTs (Sectional Running Times) were obtained from the BPlan information source; however some SRTs were not available. For those SRTs that weren't available, similar timing loads SRTs were used.

	WCML (north and South)	Chat Moss (West and East)
Timing Load	Class 66 train engine, with a maximum speed of 75mph, with a 1400t trailing load	Class 66 train engine, with a maximum speed of 60mph, with a 2200t trailing load

Table 4: Timing loads used for Parkside SRFI Freight Services

Each direction into and out of Parkside SRFI was considered independently to identify the number of paths available. Following this all directions were considered simultaneously and so some of the paths originally identified were taken out due to timetable conflicts.

The HS2 Phase 2a ITSS was then used to identify additional services that will be running by 2027. The routeing of these services was taken into account and a number of Parkside SRFI paths that were previously identified were removed to allow for these additional services.

The 3 hour period analysed was assumed to be repeated 4 times throughout the day to cover the off peak times in a day, so the number of services into and out of Parkside SRFI in a day could be calculated.

Part F: **Appendix B – Routeing**

Figure 4 and Table 5 shows the routeing of services arriving and departing Parkside SRFI.

	Arriving to Parkside SRFI	**Departing away from Parkside SRFI**
North	Leaves the WCML at Golborne Junction	Joins WCML at Golborne Junction
South	Leaves the WCML at Winwick Junction and runs through Earlestown	Runs through Earlestown and then joins WCML at Winwick Junction
East	Crosses onto the Up Chat Moss line at Parkside Junction	Uses the down Chat Moss Line
West	Uses the up Chat Moss Line and crosses at Parkside Junction	Uses the down Chat Moss line

Table 5: Routeing details

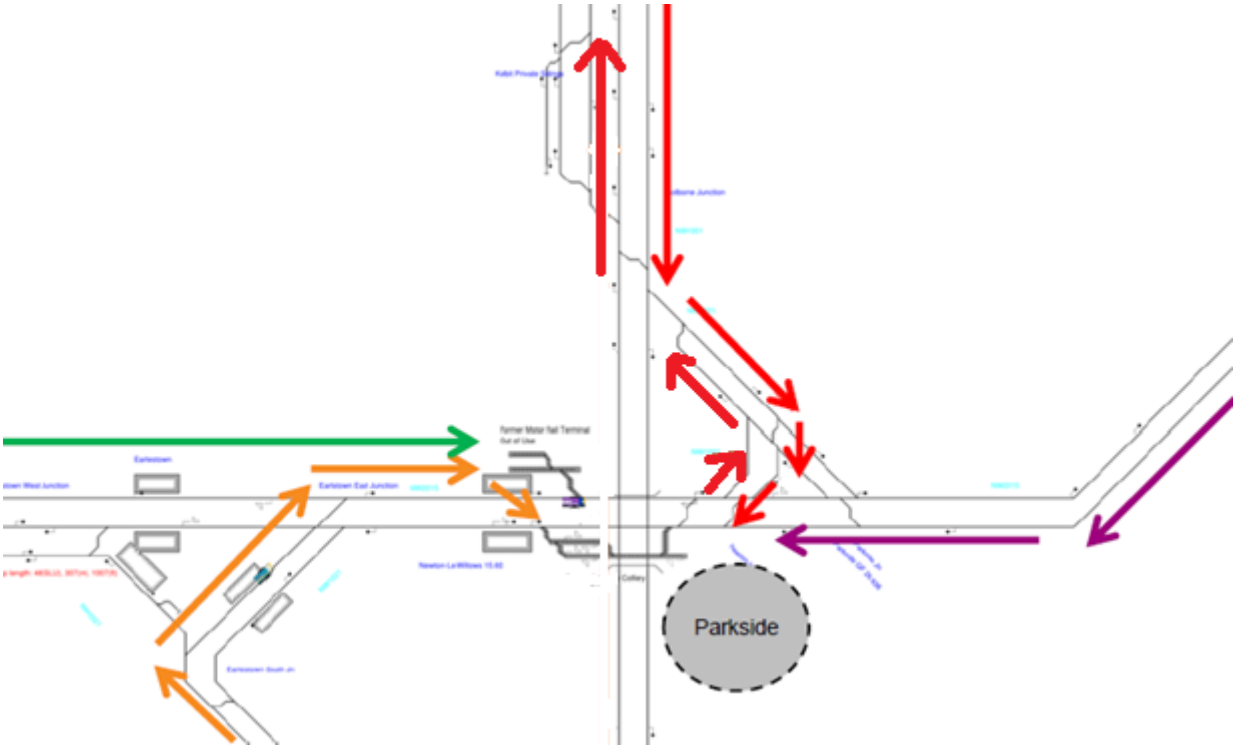


Figure 4: Routeing in and out of Parkside SRFI