



# NW3007 Rejections Timeline



## ESG and Future Services Integration Analysis

- The FSI analysis found that it was only possible to run a regular, clockface, 2tph service in periods of the day with no freight services. They found it was not possible to run a regular pattern in conjunction with the freight trains.
- They found some possible flexes to the freight to allow the passenger trains to run, with the passenger services being retimed slightly off pattern.
- They used the class 230 timing load.
- They only reviewed Wednesdays, which formed the basis of their recommendations – no other freight or ad-hoc paths were considered if they ran on other days.
- They used the pre-Covid May 20 timetable as the base, with TFW's Dec 22 plan overlaid, with the intention that this part would be implemented in Dec 21.
- They accounted for a dwell at the new station of Deeside Parkway.

## Difficulties with NW3007

- The infrastructure of NW3007 does not lend itself to regular, patterned, mixed use running as described below
- The absolute block headway sections are up to 13 miles long, the running speed is slow (15mph to 50mph), which is further reduced for Heavy Axle Weight freight, there is a restrictive bridge which slows freight further and prevents heavy trains crossing each other and a section of single line.
- Bidston platforms are frequently used by the regular Merseyrail services and therefore services from NW3007 must fit in with that pattern.
- Trains using Penyffordd Cement Sidings need to split on arrival and attach on departure due to the siding length. This means the trains hold the mainline for 30 minutes whilst these moves are completed and prevent other trains being routed from Wrexham General.
- There is only one 52m platform at Wrexham Central and permissive working is not possible.



## What was bid? Why was it different?

- The original plan was planned as class 230's, the Dec 21 bid was planned as class 153's which have slower SRTs which have impacted the plan.
- Due to the slower SRTs, the timings of the passengers trains differed from the original plan.
- Furthermore, the slower SRTs caused the initial diagramming/turnaround plan to fail, so the down trains were bid in a different pattern with the semi-fast and stopping paths effectively swapped.
- The Dec 21 plan does not account for a stop at the new station, Deeside Parkway, to stop would have increased the journey time further and would make the turnaround times impossible.
- Freight services differed from the original technical note. Some freight trains from the initial investigation had been retimed since, there are extra services in the timetable and also trains from the rest of the week to consider; there are several services which don't run on Wednesdays but do on other days of the week.



## Up Comparison – Original Plan vs Dec 21 Bid

Up Original Plan			
Bidston	dep	xx:01	xx:31
Upton	dep	xx:05	xx:35
Heswall	dep	xx:11	xx:41
Neston	dep	xx:15	xx:45
Deeside Parkway	dep	xx:21	xx:51
Hawarden Bridge	dep		
Shotton High Level	dep	xx:25	xx:55
Hawarden	dep		xx:59
Buckley	dep	xx:32	xx:03
Penyffordd	dep		xx:06
Hope (Clwyd)	dep		xx:10
Caergwrle	dep		xx:12
Cefn-y-Bedd	dep		xx:14
Gwersyllt	dep	xx:43	xx:18
Wrexham General	arr/dep	xx:48	xx:23
Wrexham Central	arr	xx:50	xx:25
Run time		49 mins	54 mins

Up Dec 21 Bid			
Bidston	dep	xx:01	xx:32
Upton	dep	xx:05:30	xx:36:30
Heswall	dep	xx:12:30	xx:43:30
Neston	dep	xx:17	xx:48
Deeside Parkway	dep		
Hawarden Bridge	dep		
Shotton High Level	dep	xx:26:30	xx:57:30
Hawarden	dep		xx:02:30
Buckley	dep	xx:34	xx:07:30
Penyffordd	dep		xx:10:30
Hope (Clwyd)	dep		xx:14:30
Caergwrle	dep		xx:16:30
Cefn-y-Bedd	dep		xx:18:30
Gwersyllt	dep	xx:45	xx:22:30
Wrexham General	arr/dep	xx:50	xx:27
Wrexham Central	arr	xx:52	xx:29
Run time		51 mins	57 mins

- The semi fast service are in similar timings, but the slower timing load increases the run time.
- The stopping services run 1 minute later and the slower timing load increases the journey time further.
- The total journey time is increased by 2-3 minutes.
- The Dec 21 bid excludes stops at Deeside Parkway to assist with the slower SRTs.

## Down Comparison – Original Plan vs Dec 21 Bid

Down Original Plan			
Wrexham Central	dep	xx:04	xx:38
Wrexham General	arr/dep	xx:06	xx:40
Gwersyllt	dep	xx:10	xx:45
Cefn-y-Bedd	dep	xx:14	
Caergwrle	dep	xx:16	
Hope (Clwyd)	dep	xx:18	
Penyffordd	dep	xx:22	
Buckley	dep	xx:25	xx:56
Hawarden	dep	xx:29	
Shotton High Level	dep	xx:33	xx:03
Hawarden Bridge	dep		
Deeside Parkway	dep	xx:38	xx:08
Neston	dep	xx:44	xx:14
Heswall	dep	xx:48	xx:18
Upton	dep	xx:54	xx:24
Bidston	arr	xx:58	xx:28
Run time		54 mins	50 mins

Down Dec 21 Bid			
Wrexham Central	dep	xx:05	xx:32
Wrexham General	arr/dep	xx:07:30	xx:34
Gwersyllt	dep	xx:12	xx:38:30
Cefn-y-Bedd	dep		xx:43
Caergwrle	dep		xx:45
Hope (Clwyd)	dep		xx:47
Penyffordd	dep		xx:51
Buckley	dep	xx:23:30	xx:54:30
Hawarden	dep		xx:58:30
Shotton High Level	dep	xx:31	xx:02:30
Hawarden Bridge	dep		
Deeside Parkway	dep		
Neston	dep	xx:41	xx:12
Heswall	dep	xx:46	xx:17
Upton	dep	xx:53	xx:23:30
Bidston	arr	xx:58	xx:28
Run time		53 mins	56 mins

- The order of the semi-fast and stopping services have been swapped.
- The timing of the pattern is slightly different to maintain the same arrival time at Bidston.
- The run times of both journeys are increased due to the slower timing load by 2-3 minutes.
- The Dec 21 bid excludes stops at Deeside Parkway to assist with the slower SRTs.

## Turnaround Time Comparison – Original Plan vs Dec 21 Bid

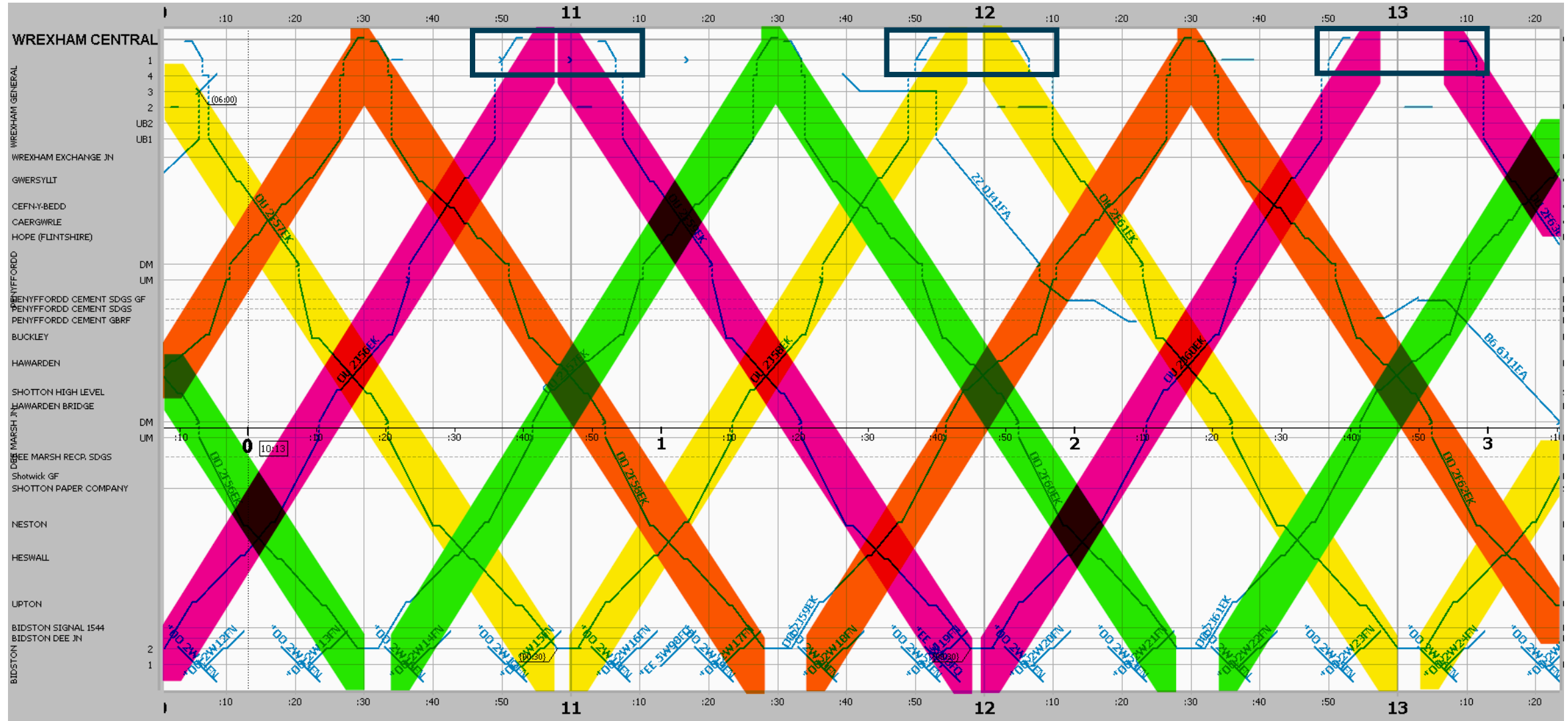
Original Plan			
Bidston	arr	xx:58	xx:28
	dep	xx:01	xx:31
Turnaround time		<b>3 mins</b>	<b>3 mins</b>
		S > F	F > S
Wrexham Central	arr	xx:50	xx:25
	dep	xx:04	xx:38
Turnaround time		<b>14 mins</b>	<b>13 mins</b>
		F > S	S > F

Dec 21 Bid			
Bidston	arr	xx:58	xx:28
	dep	xx:01	xx:32
Turnaround time		<b>3 mins</b>	<b>4 mins</b>
		F > F	S > S
Wrexham Central	arr	xx:52	xx:29
	dep	xx:05	xx:32
Turnaround time		<b>13 mins</b>	<b>3 mins</b>
		F > F	S > S

F > S indicates semi-fast (F) forms stopping (S) service and so on

- In the original plan, the units alternated between running the semi-fast and stopping patterns, with each train having a significant turnaround time at Wrexham Central.
- This means that all 4 diagrams on the route had flexibility to be retimed due to the extended turnaround at Wrexham Central.
- In the Dec 21 bid, due to the longer SRTs and the change in pattern, the semi-fast services form the returning semi-fast services, and the stopping services form the returning stopping services. This results in only the semi-fast services having a significant turnaround time at Wrexham Central.
- In turn, this means that the 2 stopping train diagrams are on near-minimum and minimum turnaround times and have very little flexibility without retiming the pattern for several hours. The 2 semi-fast diagrams have some flexibility for retiming due to the longer turnaround at Wrexham Central.

# Graph showing the 4 diagrams on NW3007 and their turnaround limitations



Each colour represents one diagram. The pink and yellow semi-fast diagrams have longer turnarounds at Wrexham Central, the orange and green stopping diagrams have short turnarounds at both ends.



## Summary of Offered Trains

- Sundays were unaffected by rejections, all rejections refer to SX or EWD and the whole Sunday timetable was offered.
- We offered 46 of the 57 EWD passenger services that run on the route, with timing adjustments to reach compliance with the freight services.
- A further 6 EWD passenger services were offered but not for the whole route, 3 were cut short to terminate at Wrexham General vice Wrexham Central and their 3 corresponding next workings were cut short to originate from Wrexham General. This was to avoid rejection of the whole path.
- We offered 2 of the 3 EWD ECS services that run along the whole route. This service was only rejected SX, the SO portion was offered.
- We offered 4 of the 4 EWD ECS services that form the passenger services at the start of their service.
- We offered 3 of the 4 EWD ECS services that are formed by the passenger services at the end of their service.

## Summary of Rejected Trains

- Sundays were unaffected by rejections, all rejections refer to SX or EWD.
- We rejected 5 of the 57 EWD passenger services that run on the route in their entirety.
- A further 6 EWD passenger services were partially rejected for the section between Wrexham General and Wrexham Central. 3 were cut short to terminate at Wrexham General vice Wrexham Central and their 3 corresponding next workings were cut short to originate from Wrexham General. This was to avoid rejection of the whole path as the retimings they required made a turnaround at Wrexham Central impossible.
- We rejected 1 of the 4 ECS services that run along the whole route. This appears to be a stock movement from one depot to another, this was rejected for SX, the SO version was offered.
- We rejected 1 of the 4 EWD ECS services that is formed by the passenger service at the end of its service. The service forming this rejected ECS was also rejected for other reason.



## What was fully rejected?

These are the fully rejected trains and their main reason for rejection. These are not the only reasons for rejection as most trains had more than one clash.

- 2F51EK 07:09 Wrexham Central – Bidston EWD  
Major clash with 6M76FA MO MSX SO.
- 2J54EK 09:04 Bidston – Wrexham Central EWD  
Major clash with 6V75DB FSX FO SO.
- 2F71EK 17:05 Wrexham Central – Bidston EWD  
Major clashes with 6M42FA MO WFO and 6V41DE TThO.
- 2J72EK 18:01 Bidston – Wrexham Central EWD  
Multiple significant clashes with freight and other TFW services.
- 5J72EK 18:55 Wrexham Central – Wrexham General EWD  
Multiple significant clashes with freight and other TFW services.
- 2J75EK 20:46 Bidston – Wrexham Central EWD  
Major clashes with 0F42FA WO and signal box opening hours.
- 5F87EK 20:52 Chester D.M.U.D. – Birkenhead D.M.U.D.  
Multiple significant clashes with freight, Avanti and other TFW services.

## What was partially rejected?

These are the partially rejected trains and their main reason for the partial rejection.

- 2J52EK 08:14 Bidston – Wrexham General EWD  
Retimed to follow 6J40EA EWD, 2F55EK cut to Wrexham General to match.
- 2J64EK 14:15 Bidston – Wrexham General EWD  
Retimed to follow 6J41EA EWD, 2F67EK cut to Wrexham General to match.
- 2J73EK 18:47 Bidston – Wrexham General EWD  
Retimed to follow 6V41DA/DE TThO FO, 2F74EK cut to Wrexham General to match.  
This partial rejection has been withdrawn since the offer after a solution was agreed with TFW to extend the service back to Wrexham Central.



## What have we tried?

- We have had a meeting with TFW to show them the problems on the graph and discuss possible retimings.
- With FSI team colleagues, we have held several sessions reviewing the original and current plan, to ensure any applicable solutions from FSI's work are incorporated
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- We have asked for a meeting with TFW and the FOCs involved but this has proven difficult to arrange.
- We have investigated further possible solutions to all of the rejections.
  - 3 full rejections and 2 partial rejections have possible solutions that require agreement from FOCs, TFW, EAP and the LOM. Agreement to these solutions has not been generally forthcoming and some of the retimings are significant.
  - 4 full rejections and 2 partial rejections do not have any viable solutions.
- Only one solution to 2 partial rejections has been agreed.
- See the final two slides for the proposed solutions.

## Remaining Problems

- We have not been able to get agreement or any interaction on most of the solutions found.
- GBRF raised concerns with the rules on the route:
  - The absolute block headway between Penyffordd and Wrexham Exchange Jn does not appear to be accurate. It should be to Croes Newydd Signal Box if first train passes through Wrexham General or if the train needs to stop in Wrexham General then the block should be to Wrexham General with additional time allowed for a phone call to the signal box to confirm the train is complete.
  - We have created the largest timing gaps possible for the two trains affected by this, one is likely to still face some issues.
  - We need to confirm if Dee Marsh Reception Sidings can hold two trains or if 6M76FA actually uses Shotton Paper Siding. We are awaiting confirmation from the LOM and DBC.
  - We need to confirm if the Penyffordd to Dee Marsh Jn absolute block headway is accurate if the first train is going into Dee Marsh Reception Sidings. We are awaiting confirmation from the LOM.



## Remaining Problems

- Signal box opening times would need amending in order to include 2J75EK, this needs to be discussed between the LOM and the union.
- W&W EAP have agreed in principle to amend the EAS to allow a retimed 5F87EK to run. NW&C EAP have not sent a response.
- Previous and next workings of rejected trains will need additional ECS moves from Chester and Birkenhead to complete the diagrams for the remaining offered trains.
- If additional ECS moves cannot be achieved then it is likely that a replan of the whole service group will be needed in order to get the diagrams of the offered trains to work.



## What is still rejected?

These trains remain rejected:

### Full Rejections

- 2F51EK 07:09 Wrexham Central – Bidston EWD
- 2J54EK 09:04 Bidston – Wrexham Central EWD
- 2F71EK 17:05 Wrexham Central – Bidston EWD
- 2J72EK 18:01 Bidston – Wrexham Central EWD
- 5J72EK 18:55 Wrexham Central – Wrexham General EWD
- 2J75EK 20:46 Bidston – Wrexham Central EWD
- 5F87EK 20:52 Chester D.M.U.D. – Birkenhead D.M.U.D.

### Partial Rejections

- 2J52EK 08:14 Bidston – Wrexham General EWD
- 2F55EK 09:05 Wrexham General – Bidston EWD
- 2J64EK 14:15 Bidston – Wrexham General EWD
- 2F67EK 15:11 Wrexham General – Bidston EWD





# Next Actions for Rejections

Current Issues		Next Actions						Issue Resolved?
Train/Issue	Issue	TFW	GBRF	DBC	NR Planning	LOM	EAP	
2F51EK	Needs multiple retimings to achieve a valid path	Reply to solution for 2F49EK, 2F50EK, 2F51EK, 2F52EK and associated ECS moves	Reply to solution for 6J40EA	Reply to solution for 6M67FA	Ask NR/Colas about retiming if other retimings are agreed			No
2J52EK/2F55EK	No solution found	Accept partial rejection or find alternative plan						No
2J54EK	No solution found	Accept rejection or find alternative plan						No
2J64EK/2F67EK	Solution identified, agreement required	Reply to solution for 2J64EK/2F67EK						No
2F71EK/2J72EK/5J72EK	No solution found	Accept rejection or find alternative plan						No
2J75EK	Needs multiple retimings to achieve a valid path and signal box hours amending	Reply to solution for 2J75EK and 5J71FM	Reply to solution for 0F42FA	Reply to solution for 6V80DA	Ask Avanti about retimings if other retimings are agreed	Discuss signal box opening hours with the union		No
5F87EK	Needs multiple retimings and EAS times to be amended to achieve a valid path	Reply to solution for 5F87EK	Solution partially dependent on the solution for 0F42FA				W&W and NW&C EAP to agree to the easements if needed, W&W EAP have agreed in principle	No

## Next Actions for Other Issues

Current Issues	Next Actions						
Other Issues	TFW	GBRF	DBC	NR Planning	LOM	EAP	Issue Resolved?
Rules Concerns		To find out how long the driver needs to check the train	To reply about the sidings 6M76FA uses	To investigate and update rules	To reply to rules questions		No
Additional Diagrams and ECS Moves	To assess what replanning is required to make the offered trains workable and bid it			To validate any subsequent bid			No

## Proposed Solutions

### **2F51EK – no agreement to anything from anyone**

TFW 2F49EK EWD 10 earlier (and associated ECS retimed)

GBRF 6J40EA EWD 38 earlier

TFW 2F50EK EWD 2 earlier (and associated ECS retimed)

TFW 2F51EK EWD 15 earlier and a potential shunt at Bidston (and associated ECS retimed)

DBC 6M67FA MO MSX SO all to match and 3 later into Dee Marsh

NR/Colas 3S71FF FO retimed between Wrexham General and Shrewsbury 6-9 mins.

TFW 2F52EK EWD 1 later throughout

### **2J52EK/2F55EK – no further discussion**

No solution to being cut short.

### **2J54EK – no further discussion**

Solution was not able to be found.

Not able to identify a way for DBC 6V75DB FSX FO to get through Shrewsbury or along GW730. Both earlier and later options have been tried.

### **2J64EK/2F67EK – no reply to this suggestion**

Can be extended back to Wrexham Central if both have 30 second dwells at Wrexham General to give a 4 minute turnaround.

# Proposed Solutions

## **2F71EK/2J72EK/5J72EK – no further discussion**

No solution found.

## **2J75EK – no agreement to anything from anyone**

GBRF 0F42FA WO retimed much earlier outside of its contractual window. It would run 1940-2231 vice 2035-2319, journey time 2hrs51 vice 2hrs44.

DBC 6V80DA retimed 2 later between Wrexham General and Shrewsbury

Avanti 5K32FW FSX 2 later between Wrexham General and Croes Newydd North Jn

2J75EK retimed 7 later throughout, depending on the opening of Penyffordd Signal Box this train may need to be retimed much later to Wrexham Central or potential be cut short to Wrexham General.

5J71FM WO split and retimed 5 minutes earlier

## **5F87EK – Wales EAP would agree to the easement, NW&C EAP have not confirmed and also no indication from TFW**

WSX – Possible to loop at Roodee Jn and await path. Waits for path down single line that corresponds with an available gap in Croes Newydd Loop. With Penyffordd box closed, the AB section runs from Wrexham to Dee Marsh Jn so the earliest path from Wrexham General is 2230. It may be necessary to retime 2F76EK a couple of minutes earlier to assist this headway. 5F87EK would then become the last train northbound and therefore would become foul of the section 4 blocks. It is 20 mins foul of NW3007.2, 29 mins foul of NW3007.3 and goes 4 mins into all block times. You would need to request easements to these blocks.

WO – As above but held slightly longer at Roodee Jn and then same as WSX from Wrexham General. This is dependent on 0F42 retiming. If the retiming is approved by GBRF then the WSX path can apply SX.

