

Salisbury to Exeter Route Capacity Enhancements A Proposal by Railfuture & SERUG

***Improving Capacity, Connectivity and Resilience...
Providing Better Passenger Experience and Improved Economic Benefits ...***

1. Background

Railfuture is a non-political, not for profit organisation which campaigns for a bigger and better railway in Britain. Nationally, we have some 20,000 members and affiliated members (via Rail User Groups). We have considerable expertise in many aspects of rail and seek to influence stakeholders to promote the needs of users and potential users, both passengers and freight forwarders. This proposal provides the background detail to our meeting in the House of Commons (21 February 2018). It has been developed together with the Salisbury-Exeter Line Rail Users Group (SERUG) who represent the rail passengers of that line.

SERUG, formed in early 2016 in response to growing concern about passenger services from local rail users, already has around 100 paying members and a further 50 associates. We assisted the formation of both the Blackmore Vale Community Rail Partnership and the East Devon Rail Partnership. We now cover all intermediate stations between Salisbury and Exeter. We also link with Travel Watch South West and SELCA (the group who supported the Axminster double track and station improvements to achieve an hourly service in 2009). SERUG chair, Bruce Duncan is also chair of Railfuture's Wessex Branch.

Our website can be found at www.serug.co.uk.

2. Salisbury to Exeter Line: History

The rail line from Salisbury to Exeter was once part of the main line from London Waterloo to a variety of destinations in Devon and Cornwall. It was laid out for fast running and was double track throughout from London to Exeter and Plymouth. In the 1960's the line was relegated to a secondary route, many of the intermediate stations were closed and most of the double track west of Salisbury was removed by 1967. The route was provided with a stopping service of trains at approximately 2 hourly intervals operating between Exeter and London Waterloo. Most of the route west of Exeter was closed. The service was of poor quality and unreliable, not least because of the long sections of single track where if one train was late, it affected services in the both directions, often for many hours.

3. Present Situation

Following this 1960's low point, things started to improve during the 1980's. Several intermediate stations have been reopened, new trains were provided in 1993 and 2 new passing loops installed, firstly at Tisbury in 1986 and subsequently at Axminster in 2009 – which finally allowed both an hourly service between Exeter and London Waterloo, plus some additional trains between Yeovil Junction/Gillingham and London. The improved quality of the service has resulted in a significant increase in the use of the line.

3.1 Passenger journeys

Whilst it is true to say that rail travel has grown over the whole of Britain, the growth on the Salisbury-Exeter line has been both considerable and consistent.

Appendix 1(a) sets out in some detail the historic growth in use on a station by station basis.

- Overall passenger journeys on the line have increased by 66% over the last 11 years (to 2017). It is interesting to note that growth continued between 2016 and 2017 despite the partial closure of Waterloo in August 2017 and the autumn strikes. The stations between Salisbury and Exeter (Central) now generate over 7m passenger journeys a year.
- Due to the way passenger journey figures are generated, the Exeter Central and Salisbury numbers shown in Appendix 1(a) also include journeys to/from other lines (the Exeter figures show a notable increase following the introduction of increased services on the Exmouth line). Nevertheless, the Intermediate stations between Salisbury and Exeter show an increase over the same period of some 54%.

Appendix 1(b) compares the average growth of the Intermediate stations between Salisbury and Exeter (54%) with a sample of other stations served by South Western Railway.

- Growth of Intermediate stations between Salisbury and Exeter (ie Tisbury to Pinhoe inclusive) exceeds the growth of many other stations, both on the “commuter” section between Salisbury and Waterloo as well as other stations served by the SWR network.
- This growth is partly driven by the investments at Axminster station (2009) and the opening of the new station at Cranbrook (2015). Nevertheless, all other stations show healthy increases.

The investment at Axminster in 2009 consisted of a new (additional) platform, overbridge, lifts, waiting shelter, 3 miles of new track, 12 signals, culvert and bridge strengthening.

- Cost circa £20m.
- It enabled an hourly service from Waterloo to Exeter to be provided.
- Passenger numbers at Axminster grew by 124% between 2006 and 2017.

3.2 Housing Development

In addition to the progressive improvement in the quality of services, passenger growth has been fuelled by increases in residential development along the route. Some station catchments, especially Gillingham, Yeovil, Axminster and Cranbrook have already seen significant new housing provided. (Cranbrook station, alone in its first full year of operation saw 90,000 journeys).

Overall there are plans to provide circa 40,000 new homes in the local District plans over the next 10-15 years. A detailed breakdown of these figures is available in **Appendix 2**.

Improvements to the train service are essential to support employment opportunities and economic development in the region.

3.3 Rolling Stock and Current Infrastructure

Because of the significant increase in passenger numbers, many services are now very full, often with passengers standing. Whilst this may be the norm on short distance “metro” type operations, this is certainly not acceptable on long distance trains where many journeys are measured in hours, rather than minutes. There are no current plans to significantly increase the amount of rolling stock.

The performance of services has deteriorated over the past 6 months. 2017 figures for South West Trains / South Western Railway “mainline” performance (Weymouth, Portsmouth and Exeter lines combined) show that only 80.9% of trains reached their destinations within 5 mins of scheduled time, compared with 85.4 in 2016 **(See Appendix 4B)**. Annual Performance figures for the West of England line individually could not be found, but there is evidence (Trains.IM) that performance on this line dropped to as low as 36% during January 2018.

Any decline in reliability on any line where there is substantial single track will decimate timetable running and makes for lengthy delays, destroying the passenger experience.

There are two primary reasons for the declining performance:

1. The current stock is nearly 30 years old and its reliability, as could be expected, is declining. Modern Railways magazine (January 2018) gives an annual analysis of this with its “Golden Spanners award”. The units serving this line are based and serviced at Salisbury with reliability showing a 57.6% decline in Miles per Technical Incident (MTIN) in the 4 weeks to 14th October 2017 compared with the same 4 weeks in 2016. **(See appendix 4A)**.
2. Delays are regularly caused by signalling faults. Put simply, the current signalling systems are unreliable – especially in the Gillingham/Tisbury and Honiton/Pinhoe areas.

Present Situation – Summary

“An Intercity Service with Branch Line Infrastructure”

Lengthy single line sections result in lack of resilience and minimal capacity to increase services

- ▶ Train Performance is deteriorating
 - Old trains and unreliable signalling
- ▶ Passenger numbers continue to increase
 - New Housing and A303 improvements likely to exacerbate this

There are no Capacity, Resilience or Rolling Stock improvements planned.

Quote from Travel Watch South West publication “Joining the Dots” (2017):

“The South West gets the lowest share of public spending on transport per person of any region in the UK... £210 per head compared to a UK average of £351 per head (2011-2015)”

(Source: Public Expenditure Statistical Analyses 2017)

4. Proposals

Given the historic growth, proposed increase in housing and ever-increasing congestion on the roads, infrastructure and rolling stock investment is required to improve capacity, resilience and the passenger experience. Railfuture//SERUG believe that there needs to be a realistic, pragmatic plan which provides incremental improvements, whilst providing value for money to taxpayers.

The recent DfT publication, ***“Connecting People, A Strategic Vision for Rail” presented by the Secretary of State for Transport (November 2017)*** focuses on the need to provide a more reliable railway and a better deal for passengers. Implementation of our proposals will meet those objectives.

This proposal is focused on providing benefit to all rail users, over 4 counties and into others where trains connect. The schemes have been chosen to improve the capacity of the line, whilst minimising track doubling costs on more difficult sections of the route, such as in tunnels and at Crewkerne station. They are incremental and do not need to be implemented together, because each one brings specific and identifiable passenger benefits. Knowing that funds for enhancements will be limited for the foreseeable future, these can be implemented as and when funding becomes available.

None of our proposals conflict with our understanding of the plans put forward by train operators, Network Rail, local authorities or other interested groups. Our proposals are practical and offer realistic solutions to many pressing issues which will only get more acute as time passes. We will be happy to engage with stakeholders to explain and provide further detail to any interested parties. Further technical details and information are in the appendices.

Timetabling has been considered in this paper, to ensure the recommendations show the right positions for track enhancements. (See Appendix 3). Appendix 5 shows the proposals map.

4.1 Tisbury Station and Dinton - Tisbury Loop

At present the infrastructure does not permit the operation of a half hourly service all day between Yeovil Junction and Waterloo via Salisbury. We believe that this is a key priority given the considerable planned growth of housing in the Gillingham, Sherborne and Yeovil areas. The current configuration of a passing loop away from the station at Tisbury is also poor, with trains having to wait for station duties to be complete before the other trains can pass and enter the station. This results in additional time in the train plan which could be eliminated with an extended loop which continues into Tisbury station (The current “south” platform remains in place but is unused). This is affordable if compared with the Axminster 2009 work which included new station platforms, bridge etc.

The extension of the existing loop at Tisbury both eastwards to Dinton, approximately to Mile Post 91 and westwards to a point beyond Tisbury Station to approximately Mile Post 96.50 would have the following benefits:

- Permit a half hourly train service in each direction (i.e. 4 trains per hour) to operate throughout between Salisbury and Yeovil Junction all day.
- Reduce journey times for all passengers travelling west of Salisbury, by eliminating planned waiting in the existing loop.
- Improve overall performance by permitting dynamic passing (ie passing at speed) in the extended loop, reducing reactionary delays.



The section of track at Dinton, with the unused track clearly visible on the right. Re-instating double track here would not be difficult.

Tisbury station with the southbound (unused) platform on the right. Two tracks here would allow trains to pass at the station, saving 7 minutes in journey times.



4.2 Whimble Loop

It has long been an aspiration of Devon County Council to see a half hourly service between Exeter and Axminster as part of the “Devon Metro” strategy. The present infrastructure does not permit this and the stations between Honiton and Exeter are served by a “skip stop” pattern (except Cranbrook) using the Waterloo to Exeter services. This results in an irregular, less than hourly pattern of service at these intermediate stations. There has been significant housing development between Axminster and Exeter and more is planned, particularly in the Whimble/Cranbrook area. Road traffic congestion in Exeter is now a recognised problem and a regular interval local rail service would bring real transport benefits. Provision of a loop in the Whimble - Cranbrook area, but not necessarily through the latter station (to keep costs to a minimum), would permit the operation of 6 trains per hour (3 in each direction) Exeter and Honiton/Axminster, in addition to the existing hourly service to and from Waterloo. This would have the following benefits:

- Reduce overcrowding on Waterloo trains at the Exeter end of the line.
- Provide a regular interval service to all “local” stations between Exeter and Honiton.
- Provide a regular 2 trains per hour between Exeter and Honiton/Axminster.
- Allow an additional hourly path for diverted London Paddington trains, but faster than at present.
- Allow an additional hourly Exeter to Honiton path that could be used for local trains (providing this path is not required for diversionary purposes by Great Western services.
- Road traffic congestion is likely to be eased.

4.3 Crewkerne Loop.

The line from Yeovil Junction to Exeter (St David’s) is used on a regular basis for diversion of the London Paddington to Exeter and Plymouth services both in terms of planned engineering work and in other emergencies. The Great Western route is particularly prone to flooding north of Exeter and has been closed for days on several occasions in recent years. At present the Salisbury-Exeter line can only accommodate a very limited number of trains on diversion and often requires the scheduled services from Waterloo to be truncated at Yeovil Junction.

Several bodies, including Network Rail and The Peninsula Rail Task Force have proposed that as part of a rail resilience plan for Devon and Cornwall, additional capacity is provided on the route via Yeovil Junction.

In conjunction with proposals 1 and 2 above, we propose that an additional loop be provided east of Crewkerne Station. This, in conjunction with existing loops and the proposed new loop at Whimble, would allow the proposed hourly Exeter to Axminster service to include an additional hourly diversionary path in both directions between Exeter and Yeovil Junction. The diverted services would also be to call at the local stations between Exeter and Axminster, but without the need to revise or truncate any of the other services proposed in this paper. It is recognized that additional work may be necessary in the Yeovil Pen Mill area to provide an hourly additional path on the single track between Yeovil Junction and Castle Cary. This is outside of the scope of this report, but well understood by us.

The western end of Yeovil Junction and the start of the longest section of single line between Salisbury and Exeter (17miles)



4.4 Yeovil Junction – Permissive Working

Unlike Salisbury, where full permissive working (joining and splitting trains) is allowed, the signalling at Yeovil Junction allows splitting but NOT joining trains.

It is our view that subject to a proper risk assessment full “permissive working” should be implemented at Yeovil. Given that the net number of splits between Salisbury and Yeovil is likely to be similar, (i.e. more at Yeovil and fewer at Salisbury) this should be pursued with vigour and any risk mitigation measures identified and implemented.

The cost of this is virtually zero, it simply requires management time and determination. The benefits would be:

- Overcrowding would be reduced, with all trains west of Salisbury formed of 6 cars (subject to stock availability), 3 cars could detach at Yeovil Junction with the remainder continuing to Exeter.
- Other journey opportunities would arise for those trains laying over at Yeovil Junction, for example, more direct services to Yeovil Pen Mill (with continuation to Frome, Westbury Batch or Bristol).

4.5 Rolling Stock

a. Short Term

The short-term solution to overcrowding is to provide longer trains. Many services west of Salisbury are formed of 3 cars only. We accept that at present the use of class 158/9's is driven by the needs of peak hour flows to and from Waterloo, particularly east of Salisbury. The opportunity to cascade additional class 158 units to the Exeter line, which could be made available as a result of Great Western electrification, should be taken. In addition, steps should be taken to recover the existing 158/159 units which are used on other parts of the network, or sub leased to other operators. We believe that this change, coupled with a proposal to permit splitting and joining at Yeovil Junction (see above) would permit most services to be formed of at least 6 cars between Yeovil Junction and London Waterloo.

b. Longer Term

In the long term (ie starting with the next franchise in 2024), the current 30-year-old trains must be replaced with new ones. Opportunities for current follow on orders would improve value for money options.

It is important that new trains are specified early and included in the next franchise.

5. The next steps....

SERUG/Railfuture seek the support of MP's to gain funding for the Network Rail process (ie GRIP 1, 2 and 3) for each incremental section for these proposals. This would kick-start the long-term aspiration of better rail transport for the South West and ensure delivery of these proposals as soon as possible.

That support would also galvanise the LEP's, (Swindon & Wilts for Dinton/Tisbury improvement, Heart of the South West for Whimple, and Crewkerne improvements), to partner such investment proposals.

The County, District and other relevant Authorities would acknowledge and assist the process, with support and partnering from the Train Operating Company, and Network Rail. It would also be helpful if Network Rail could streamline the application process by moving directly to GRIP 2 as first stage.

We are open for you (the MP's) to suggest ways we can assist this important task.

Network Rail are also encouraging investment from 3rd parties by creating alliances with commercial industry partners. Again, encouragement from MP's is vital.

6. Conclusion

The Rail Minister appears keen to *“want to be part of a railway and transport system that is actually expanding and growing, and that is our ambition”* (Hansard 5/2/2018 answer to MP’s questions.).

Modern and efficient public transport with rail at its core, designed to meet users’ needs and aspirations, can help advance all three pillars of sustainability... economic, environmental and social, removing barriers to growth and wellbeing. The growing towns on this line require an improved rail transport service. They should not have to wait until the existing infrastructure, decays further.

The South West needs a long-term transport, rail, bus, and road strategy to enable delivery of these Proposals. Scotland (Barnett formula) and the Northern Powerhouse in political terms appear to have such a politically-lead team, and they are now delivering benefits over a wide geographical area.

Both rolling stock and track capacity needs urgent improvement. Implemented successfully, the railway will be fit for the 21st century, serving its many communities reliably, giving passenger benefits and with sustainability at its heart.

Financially, these proposals are capable of being delivered in stages and do not require massive funding for all at one time. Partnering with the TOC, Network Rail and other relevant Authorities/Organisations will create conditions and support for higher value growth, improved connectivity, resilience and long-term community wellbeing.

Rf/SERUG 21 February 2018

Appendix 1a

Passenger Numbers: Nov 2006 – Nov 2017 (ORR annual statistics)

SERUG Stations	Nov 2005 to Nov 2006	Nov 2015 to Nov 2016	Nov 2016 to Nov 2017	Variance 2017 vs 2016		11 Year growth (from 2006)	
				Passengers	% variance	Pax increase	% increase
Salisbury (inc Bristol - South Coast)	1,603,255	2,028,148	2,075,866	47,718	2.4%	472,611	29.48%
Tisbury	213,928	241,340	239,480	- 1,860	-0.8%	25,552	11.94%
Gillingham (Dorset)	361,000	425,660	434,378	8,718	2.0%	73,378	20.33%
Templecombe	80,502	115,378	126,676	11,298	9.8%	46,174	57.36%
Sherborne	163,108	220,980	234,980	14,000	6.3%	71,872	44.06%
Yeovil Junction	193,000	222,396	238,490	16,094	7.2%	45,490	23.57%
Crewkerne	91,754	155,696	162,362	6,666	4.1%	70,608	76.95%
Axminster (new loop and platform 2009)	176,270	394,438	395,216	778	0.2%	218,946	124.21%
Honiton	252,128	389,784	390,050	266	1.0%	137,922	54.70%
Feniton	55,341	74,294	69,078	- 5,216	-7.0%	13,737	24.82%
Whimple	40,516	68,448	61,854	- 6,594	-9.5%	21,338	52.67%
Cranbrook (opened late 2015)		20,404	90,458	70,054	340.0%	90,458	xx
Pinhoe	17,777	94,354	94,242	- 112	-0.1%	76,465	430.13%
Exeter Central (inc Exmouth line)	1,081,171	2,433,006	2,566,082	133,076	5.5%	1,484,911	137.34%
TOTAL - All stations	4,329,750	6,884,326	7,179,212	294,886	4.3%	2,849,462	66%
TOTAL - Excl. Salisbury and Exeter Central	1,645,324	2,423,172	2,537,264	114,204	4.7%	891,940	54%

130%

Appendix 1b

Comparison of Passenger Growth: 2006 vs 2017

Intermediate Stations Salisbury – Exeter (Tisbury – Pinhoe) vs Selected SWR stations

Intermediate Stations only (Tisbury - Pinhoe)	54%
Selected key stations Salisbury - Waterloo	
Andover	24%
Farnborough (Main)	26%
Woking	26%
Selected stations - other lines	
Brockenhurst	-6%
Dorchester South	21%
Epsom	24%
Farnborough (Main)	26%
Haslemere	26%
New Milton	13%
Wareham	21%

Appendix 2

Planned new housing starts – within 10 to 15 years

Gillingham (Dorset)	6,500	
South Somerset	15,000	(predominantly Yeovil, Chard)
East Devon	15.950	(excl.Exeter)
Sherborne	1,000	
West Dorset.	1,000	(excl. Sherborne, Dorchester and surrounds)
TOTALS	39.450	

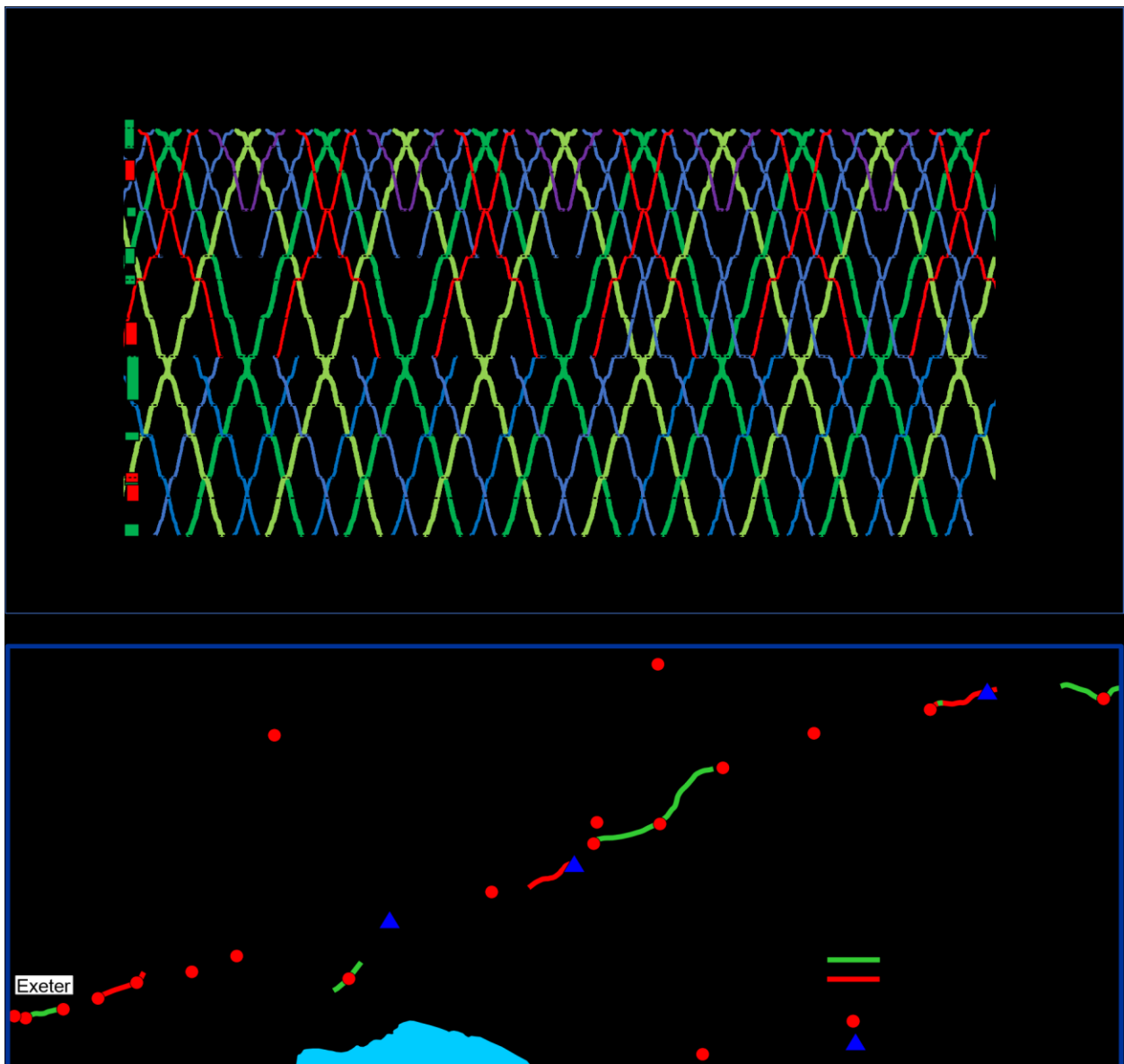
Information provided via Local Area Plans

Appendix 3

Details of New Loops and Timetabling

The time/distance graph below shows how the Railfuture/SERUG proposals would translate into a workable timetable.

The lines show where existing and proposed trains need to pass on the mainly single-track Salisbury to Exeter line. Next to the mileage axis, existing double track is shown by green rectangles and proposed double track in red. Station stops show as small deviations where minutes accrue with no distance covered. The map shows the geographical location of the passing places.



A. *The Existing Waterloo to Exeter Service*

The green lines show the existing service pattern (XX:20 from Waterloo and XX:25 from Exeter), but modified to show trains passing in Tisbury station instead of the Tisbury loop half a mile to the east.

It also improves reliability for passing other services and running of the existing Yeovil to Exeter 2 hourly diversionary path (shown in red).

B. Extending 2 trains per hour from Waterloo to Salisbury through to Yeovil Junction

A 4½ mile eastward extension of the Tisbury loop, using much of the formation occupied by the disused Chilmark siding, is proposed. This enables the XX:50 service from Waterloo to Salisbury to run hourly through to Yeovil Junction and the XX:47 Salisbury to Waterloo to start every hour from Yeovil Junction. This gives 2 trains per hour both ways between Waterloo and Yeovil Junction. Blue lines show the passing 1½ west of the former station at Dinton. Currently the single track limits these trains to every 2 hours, or hourly in one direction only. Total length of double track for the Dinton to Tisbury station work, inclusive of the existing double track would be about 5½ miles.

C. Three trains per hour capacity between Exeter and Axminster with the Whimble loop

The proposed Whimble loop would start one mile east of the station on straight track leading from Bridge 499. After half a mile and at bridge 502, the track is substantially on the former down side right through to the suggested end-point just to the east of Cranbrook station. This, together with there being only one overbridge (502), makes Whimble a favourable location for track doubling. It is not necessary to provide a second platform at Whimble.

Total length of the proposed loop would be about 3¾ miles. Work was done on the Whimble Loop by Parsons Brinkerhoff for SELCA, Devon County Council & Somerset County Council in 2004, although for a different timetable/passing configuration (**Pre-Feasibility Report for Exeter to Waterloo Line Devon and Somerset Loop Lines**, 24th December 2004, Doc Ref: TUE80790A-SNP-100).

The Whimble loop gives 3 train paths each way between Exeter and Axminster. The Blue lines show an hourly shuttle service, XX:48 from Exeter St. David's, to Axminster and returning from there at XX:43. Intermediate stops are at Exeter Central, Cranbrook, alternating between Whimble and Feniton and then Honiton. A slightly earlier Exeter departure would allow Pinhoe to be served.

The current capability to divert Paddington services from the Taunton route every 2 hours both ways (red lines) is maintained, but the Whimble loop allows an 11 minute later departure from Exeter St. David's at XX:11 instead of on the hour. Westbound from Yeovil Junction is at XX:54 arriving at Exeter St David's at XX:55. Apart from Exeter Central which is optional, these trains must stop to pass at Honiton, Axminster and Chard Junction loop.

The Whimble loop would additionally allow a 2 hourly Exeter St. David's (XX:05) to Honiton shuttle service. This would be useful for peak time services with stops at Pinhoe and Cranbrook.

D. Providing an Hourly Great Western Diversionary Pathway.

Additional Taunton line diversions could run hourly when necessary, by taking over the stops of the Exeter to Axminster shuttle service. Passing would be at Chard Junction and a new passing loop of about 4 miles would be needed east of Crewkerne station. This would be from Sutton Bingham around mile post 125 to around mile post 129, although consideration might be given to also completing the 2 miles of double track between Yeovil Junction and Sutton Bingham. The Blue lines show the paths on the right-hand side of the time distance graph.

Appendix 4

Train Performance

A. Salisbury Depot – Comparison of reliability of class 159/0 units (used on the Waterloo – Exeter trains).

Rolling Stock	MTIN P7 (4 weeks to 14 Oct 2017)	MTIN P7 (4 weeks to 14 Oct 2016)	% Change
Class 159/0	104,263	246,099	-57.6%

Source: *Modern Railways*, January 2018.

MTIN = Miles per technical Incident. Technical incident is where a train is stopped for more than 3 minutes due to train failure.

B. On-Time Performance (Public Performance Measure)

Public Performance Measure (PPM) shows the percentage of trains arriving at their termination station within 5 minutes (commuter services) or 10 minutes (long distance services) of their scheduled arrival time.

Table 1. Year on Year Comparison – All South Western Mainline Services

South Western Railway “Mainline” (Portsmouth, Weymouth and Exeter line services)	PPM achieved
2016/17	85.4%
2017/18	80.9%

Table 2. West of England Line Performance – last 6 months

Month	PPM achieved
August 2017	75.3%
September 2017	78.9%
October 2017	78.7%
November 2017	75.1%
December 2017	79.6%
January 2018	86.5%

Appendix 5

Diagram of the line Salisbury to Exeter showing track configuration

Red = Current configuration
Green = Proposed Configuration

