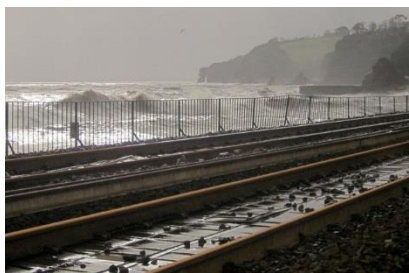


Peninsula Rail Task Force report targets resilience, faster journeys and connectivity

Through a [report](#) published on 22nd November 2016, the authorities of South West England set out a plan for investment in the region's rail network. It has three primary objectives: resilience, faster journey times and better connectivity. With strong demand growth on both main lines and branches – but nothing like the investment seen in other regions – the South West has a lot of catching up to do. Wisely, the report's authors don't promise a quick fix but endorse a staged programme.

Central to the plan is a fix for the Dawlish problem. When the sea over-tops the wall along which the main line serving South Devon and Cornwall runs, the disruption can be huge – as it was in early 2014. So it is unsurprising that major works to address the problem at Dawlish, costed by Network Rail at £430m, are proposed along with other flood mitigation measures elsewhere, including along the Somerset levels. The risk of a storm surge of the 2014 scale (which closed the line for two months) is put at 1 in 25 years. But the risk of smaller scale disruption that would still lead to line closure of up to a week is much greater (1 in every 3.5 years).



On journey times, the Task Force report looks for improvements over the lengthy routes to London and Bristol, with targets for instance of a London - Plymouth journey time of 2h15 (compared with 3 hours today). They are right to be ambitious. Work from 10-12 years ago by the SW Regional Development Authority showed how economic activity and productivity declines with travel times to London, with a marked threshold at around 2 hours. So in this aim, the South West shares much of the ambition of the North of England (destined to be fulfilled in that case through HS2).

The report seeks frequency improvements too, and improvements on both the Exeter - Waterloo line as well as on the faster GW route to Paddington. Here, the task force wants to see progressively improved services (over the 'Berks and Hants' line), with infrastructure improvements over the whole route to London.

Reduction in the 3 hour London-Plymouth journey time to 2h15 (and with it all of the Cornwall journey times) would also bring time savings to Exeter and Taunton. Its achievement relies on a whole series of schemes, the value of which will be higher closer to London (because traffic volumes and benefits increase that way). The more cost effective schemes – saving say the first 15 minutes – will not be as expensive as those needed to get the final 15-minute time reduction. Indeed, the latter would seem to need – according to the Task Force report – re-alignment of some sections of the Berks and Hants line through speed-restricted locations such as Hungerford that would in practice be extremely difficult to implement. It would be wise to recognise this and look at the possible investment alternatives on a corridor basis, allowing for the possibility of some completely new sections of line, which might turn out to be better than multiple adjustments to the existing alignment.

We believe that the improved connectivity the South West seeks should be seen as part of a wider national high-speed rail plan – and Greengauge 21 intends to publish such a document during 2017.

Greengauge 21 endorses the Task Force's aims on resilience and its set objectives in terms of journey times and enhanced connectivity, and will build the Task Force's thinking into this wider national setting.

The Northern Route *via* Okehampton and Tavistock

Under the capacity objective, the Task Force report calls for the re-creation of the northern route between Exeter and Plymouth via Okehampton and Tavistock. This is also seen as being developed in stages, with the Plymouth-Tavistock and Okehampton-Exeter branches getting a restored service in 2024-9, and the missing middle section between Tavistock and Okehampton following thereafter. A phased approach is in line with [Greengauge 21's report](#) of 2015 which set out the wider social and economic case for re-instating the line in full.

The northern route is understandably seen by the task force as being less important than getting the existing main line across Somerset and the coastal section past Dawlish into a much higher state of resilience: it, after all, serves all of South Devon and most of Cornwall. But the economies of North, Mid and West Devon along with North East Cornwall shouldn't be expected to wait 15 years for better connectivity. And the whole of Devon and Cornwall would be helped by the added network resilience a second route between Plymouth and Exeter would bring.

Greengauge 21 Study of Line Re-opening

In our work of 2015, we identified why the northern route between Exeter and Plymouth should be considered as a good prospect. We saw a rationale that centred on meeting *sustainable development objectives*, that helped build *resilience for the south west's rail network*, and that opened up *opportunities for railfreight* – which has largely disappeared from the West Country at present. The investment rationale based around these three aims is:

1. **Development** in mid and west Devon is planned to be focused on the two towns of Okehampton and Tavistock, which have plans and the local amenities to support housing and employment growth, but which would face growing pressure on local road networks (and amenities such as schools and hospitals) as they expand. So providing rail connectivity to these two towns and linking them effectively with Exeter and Plymouth fits with sustainable development objectives *and* reduces the pressure for a more dispersed pattern of development in areas on the periphery of Dartmoor national park *and* relieves pressure on local road networks. The rail scheme is arguably a necessary component of sustainable economic development in mid and west Devon and NE Cornwall
2. While the Dawlish route needs to be made more **resilient**, it would be valuable for Plymouth and Cornwall to have a second route to ensure that rail connectivity is not lost in adverse weather conditions or because of other reasons that lead to service disruption. It is clearly not only possible but likely that over-topping and disruption will occur again at Dawlish over the decades ahead. Indeed, the major works needed along the coastal section of route will entail some disruption themselves. And cuttings and embankments built through the south



Devon clays pose a continuing risk at other places along the GW south Devon line via Newton Abbot

3. The northern route offers the capacity needed to attract **freight** back to the railway. Currently, it is proving near impossible to provide daytime freight paths on the route *via* Newton Abbot because of the lack of line capacity – a problem that will be exacerbated as passenger service frequencies increase further (as sought by the Task Force). The northern route has much less severe gradients and can provide ready access to key locations such as Devonport Dockyard. It is very helpful for the freight/logistics sector to have available a diversionary route – and this is currently lacking across Devon: the northern route can provide it.

The Greengauge 21 report in 2015 questioned the need for an ‘intercity’ specification level for the northern route. Network Rail’s initial appraisal of options to address the Dawlish problem had envisaged – for the northern route option – a 125 mile/h route, built partly at a higher elevation than the old line to reduce flood risk, with as a consequence a high price tag. Such an approach might match the journey times of the existing line, but it became clear that a northern route could not *replace* the existing line across south Devon (Torbay would still need to be served: Cornwall could only be served from the northern route by trains reversing in the Plymouth area; the railway is part of the sea defences for the coastal towns), so this high level specification was judged to be inappropriate.

Instead, Greengauge 21 suggested a cheaper specification, with a regular interval train service operated as extensions of trains that otherwise would terminate at Exeter St. David’s – and the London Waterloo (SWT) service was seen as being ideal. The northern route would operate with perhaps a maximum line speed consistent with the rolling stock in use (90 mile/h).

With a reasonably fast service, the project was much more than a tidy up of the railway map by joining two dead end branches. It would support the development of Devon’s two major cities and reconnect two of its least well connected towns – and in the process create network resilience too, including for Cornwall. With a set of overlapping passenger demand flows, the rail service would have a good commercial case, rather than adding to franchise costs, as would two separated branch lines¹.

There is an essential difference here. Two new branch lines will require increased (nationally-funded) subsidy to meet local needs. A through route, serving Tavistock and Okehampton and operated as part of the longer distance rail network may well prove to *reduce* the costs of franchising through the extra revenues that will be generated.

The Task Force’s 2016 Northern Route Study

The findings of a consultancy report dated March 2016, commissioned by Devon County Council for the Task Force, released with the main report in November, reached particularly gloomy conclusions

¹ So rather than just Tavistock – Plymouth and Okehampton – Exeter as key flows, there would be service connectivity and key rail passenger flows between Tavistock and each of Okehampton, Exeter, and London (as well as Plymouth); between Okehampton and Plymouth, Tavistock and London (as well as Exeter) – and for London, read the rest of the country.

on the case for re-instatement of the northern route, but wisely its analysis seems to have been discounted. It is worth noting what it said and why its conclusions should be disregarded.

The March 2016 report for the Task Force develops a cost benefit appraisal of the northern route's re-instatement. Unfortunately, it takes de-scoping the original Network Rail 'intercity' proposition too far and, instead of seeking to add Tavistock and Okehampton to the national rail network, envisages instead the creation of a series of local stations or halts strung out between Plymouth and Exeter, most of which have little purpose. Together with a planned all-stations train service, this has the unwanted effect of extending rail journey times beyond the point where the service would be attractive. In short, the strength of the core narrative that sets out why the northern route should be re-instated in the Greengauge 21 work has been lost in the Task Force's Northern Route Workstream 'Assessment of Scheme Costs and Benefits', of March 2016.

In fact, the core service assumption entailed a train service that makes no fewer than *seventeen* intermediate station calls between Exeter and Plymouth. Little wonder a journey time of 2 hours is projected. Even in the days of steam in the 1960s, this journey via the northern route could be made in under 1h45, down to 1h30 between Plymouth and Exeter St David's by 1964. Re-instated to a modern standard, with modern traction and with a stopping pattern centred on Tavistock and Okehampton (together with Bere Alston for the Gunnislake branch), a journey time of 1h15 should be achievable, and with that, attractive journey times for Tavistock and Okehampton, and a reasonable alternative to travelling *via* Newton Abbot for Plymouth and Cornwall travellers (where journey times are 1h - 1h10).

It may be that the analysis was designed to flush out whether any smaller intermediate stations were indeed worthwhile. But in an era before mass car ownership, stations on the northern route before its closure such as those at Bow, Sampford Courtney, Bridestowe and Lydford issued tickets for typically 15-25, 10, 15 and 15 passengers *per day* respectively.² These were obvious targets for Dr Beeching era cuts; it's just unfortunate that Tavistock and Okehampton lost their services too. There has been minimal development in these deep rural areas since and there is simply no case to invest in stations and rail services for places with such small levels of demand, especially when as a consequence the through train service ceases to be an attractive alternative to car or even bus travel.

A rail service to all of the candidate stations included in the March 2016 appraisal is unattractive. And it would not support a pattern of sustainable development but instead encourage growth in a scattering of rural areas. Nobody would want ribbon development around the Dartmoor National Park, surely?

Possibly because the projected rail journey times were so slow, and possibly because the Task Force study's analysis of the census data suggested just 4 daily Plymouth-bound bus passengers and just 14 car drivers would switch to rail³, the estimate of transport benefits, based on generalised cost

² The Okehampton Line, John Nicholas and George Reeve, Irwell Press, 2016

³ In contrast with the research based on a sample survey of Tavistock residents quoted in the Greengauge 21 work, which showed a much higher propensity to consider rail, with the proportions varying as a function of station and residential location decisions. And also in contrast with the projected census-based journey to work trips between the many intermediate stations in the report – a pattern of use that is not replicated elsewhere on the current rail network.

changes with and without a rail service, is *negative* with trips transferring from car experiencing slower journeys. So although the full range of benefits that are included in a standard DfT appraisal were present – and with estimated benefits of £96m from added resilience (despite the slow rail journey times), £12m from less road congestion and £10m in terms of option value (the benefit of simply having the rail service available, regardless of use) – these were offset by an estimated £30m *disbenefit* to transport system users who switch to using rail, which appears counter-intuitive⁴. Against substantial operating costs at £3.9m per annum (well, with a 5-hour round trip time, it was assumed no fewer than 6 trainsets would be needed to provide the service) the overall benefits of less than £100m are low and the economic case is inevitably projected as being weak.

Fortunately, the Task Force appears to have chosen to ignore the analysis and take forward full line re-opening in its overall plan. But the question remains as to whether the task force underestimated the importance of this re-instatement project to the wider south west economy, discouraged by these questionable appraisal results.

Maximising Value from the Northern Route

Extraordinarily, on the same day that the Task Force report was published, the South West's rail services were [reported](#) as being cut by flooding once again.



This time it was the perennial problem of Cowley Bridge junction – where the northern route and the Barnstaple branch join the Main Line just north of Exeter and where the confluence of tributaries of the River Exe creates an ongoing challenge for the railway engineers. Could there be a benefit from some lateral thinking here?

Consideration could be given to a new chord line north of the vulnerable and low-lying section of route at Cowley Junction to allow trains to operate directly from the main GW line from Taunton to Okehampton and onwards to Plymouth and Cornwall. The chord need be no longer than 2km, but it would mean that it would become possible to operate services directly from the restored northern route to London Paddington and to other destinations such as Bristol and beyond without the need to traverse flood-prone Cowley Bridge junction or to reverse services at Exeter St David's.

This capability would be highly valuable at times of flood disruption (at Cowley Bridge, Dawlish or both), when the South West train services could be maintained by diverting some trains *via* Yeovil to access Exeter (the current contingency arrangement) and sending others *via* the new chord line to serve Plymouth and Cornwall. By this approach, journey times to Plymouth would match those achieved by the route via Dawlish, with ten minutes saved by using the chord rather than reversing trains at St David's.

But this investment would not be justified for such contingencies alone. It could have regular use – for selected services from Plymouth, Tavistock and Okehampton onwards to Taunton and beyond; for North Devon (Barnstaple) line services similarly; and for freight services that cannot be accommodated on the route via Dawlish because of capacity constraints. Such a proposition looks

⁴ Values in this sentence are all discounted present values (PV) over assumed project life

beyond today's service frequency levels, and anticipates an increase in frequency levels on the Cross Country axis as well as to Paddington and also helps accommodate local service development ambitions (for instance, the Devon Metro plan). As these service improvements come on stream, the pressure on the existing network will intensify and the need for capital investment will become apparent (Network Rail has already identified a capacity challenge on the Newton Abbot – Exeter St David's line). Far better than adding in passing loops that can only lead to journey time lengthening for stopping services to create the extra capacity that will be needed in a way that brings much wider benefits across the South West as a whole.

Creating the northern route should not be regarded just as a matter of re-instatement. In some places the original course of the line might be better avoided. And as the route approaches Exeter, the scope for a short section of new line needs to be added into the options mix.

A Way Forward

The Task Force ambitions in relation to resilience, journey times and connectivity are a valuable, regionally-defined set of aims for the South West that should help shape rail investment policy for the decades ahead that Government should heed.

If Task Force ambitions are met, however, it won't be until 2029 that works at Dawlish and elsewhere to address resilience to flood damage will be complete – and by then, statistically, there are likely to have been at least three occasions when the line will have been closed again from sea damage. An optimistic view is that by 2029 the problem will have been addressed for good. More realistically, the risk that the South West could be cut off again will remain, albeit diminished.

A still vulnerable railway would jeopardise the value of the major programme of investment that the Task Force seeks eastwards from Exeter to London to improve connectivity and shorten journey times.

Re-instatement of closed railway lines has been very successful elsewhere, including in the remote Borders region of Scotland, and Greengauge 21 believes similar success could be had with the right specification for rail services over the Exeter–Okehampton–Tavistock–Plymouth line too.

Indeed, there is the prospect of a rail service being offered which is itself commercially viable – an outcome that cannot be expected from the idea of separate branch services for Plymouth-Tavistock and Exeter-Okehampton. The proposition of a northern route fits the Task Force objectives – for resilience, better journey times and connectivity – completely. It provides valuable route capacity that will help ensure the Task Force's ambitions for more passenger services can be met. It is a scheme that may be essential if freight is to be attracted back to rail in the South West, reducing the number of lorries using the A30 and A38. It will provide a competitive service offer for Plymouth and Cornwall, with the prospect of better customer service and more attractive pricing. It will aid the development of the city economies of both Exeter and Plymouth, broadening employee catchment areas. It will reconnect what is now said to be the largest area in England without a rail service, and provide the basis for sustainable economic development in North, Mid and West Devon and North East Cornwall.

For these reasons – and because of the network resilience the scheme provides – works at Dawlish over the next few years should be accompanied by detailed planning and design of the Northern

Route *via* Tavistock and Okehampton (with a Cowley Bridge chord) to ensure that when funding becomes available, the South West has a shovel-ready scheme, primed for implementation with the necessary planning consents.



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