Department for Transport

Campaign for Better Transport

railfuture

Expanding the Railways

How to develop and deliver a proposal

Expanding the Railways: How to develop and deliver a proposal

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Foreword

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The national rail network has never been more important to the economic and social success of our country. Passenger numbers have doubled since 1996 and continue to grow, more trains are travelling more miles than ever before, and new lines and stations are opening for the first time in generations.

For this reason the Government is investing at historic levels to ensure that the rail network will continue to support the prosperity of the country and serve the needs of passengers long into the future.

However, the long term success of the railways is not only a challenge for Government. As this excellent publication by the Campaign for Better Transport demonstrates local organisations have a crucial role to play in making our railways reach even deeper into local communities and work even harder to support local mobility and prosperity.

Not everyone has local access to the rail network, and we want as many people as possible to have the opportunity to benefit from train services, whether travelling to their place of work, for leisure, or to visit family and friends.

Local access to rail services opens up brand new employment opportunities, and encourages regeneration and investment, and reduces congestion. It can change lives by driving social mobility and offering equality of access to centres of employment. It can also simply bring people closer together. Supporting a sustainable expansion of the railway network into local communities is vital to catalysing this socio-economic growth and potential.

The Government has a strong track record: the New Stations Fund, the National Infrastructure Delivery Plan, and innovative approaches to the specification of rail franchises have all led to new stations being opened and other local benefits. A collaborative partnership between Chiltern, Network Rail and local authorities has even resulted in the first new rail link to London in a century.

The involvement of local authorities, LEPs, developers, and other parties is therefore essential. Only they are in a position to play an active role in identifying and promoting schemes of interest to their regions and to work together to invest in the railways. They are also best placed to ensure that all communities are able to understand and make the most of the advantages that access to local rail services can offer.

The long term and sustainable prosperity of our country is the responsibility of us all. The Government is currently overseeing the largest programme of investment in the rail network since the Victorian era, and it is vital that the full value of that investment reaches into to every region and community across the country. The role of local organisations in achieving that is crucial. This guidance, developed by Campaign for Better Transport, demonstrates how this can be achieved and will be an extremely valuable resource for those who share the Government's vision for a world class rail network accessible to all.

1. Introduction

What this report is intended to do

This guide shows how to take a rail infrastructure project such as a new station or section of track from an initial idea right through to opening. To do this, it draws on both statements of policy and practical examples of others who have brought projects to fruition.

It applies to England, and is intended to help local authorities, Local Economic Partnerships (LEPs), train operators, developers and others explore the potential for a new or reopened railway station or section of line. It has information and guidance to help establish an idea, develop a business case, pull together partners and supporters, and work through financing and delivery. Devolved administrations in Scotland, Wales and London have their own approaches.

Over the last 20 years, rail has undergone an extraordinary renaissance. Passenger journeys have doubled to 1.7 billion[1], kilometres travelled on network each year has reached 64.4 billion[2] and a million people arrive in London's main rail terminals each day[3]. Stations including Birmingham New Street, Reading and London Bridge have undergone major overhauls to cope with demand in both passengers and train services. Passenger numbers on the recently re-opened Borders Railway have greatly exceeded expectations[4].

Rail infrastructure is not an end in itself but connection to the network can be a huge economic and social boon. Developments are nearly always locally driven. For developers, local authorities, Local Economic Partnerships and others, a new rail connection is an enticing prospect. Many towns which lost their railway station in the 1950s and 60s are seeing active campaigns for their reinstatement. Some major new developments are being planned with a rail link as an essential selling point.

In the last two decades, over 80 new and reopened stations have been added to the network[5]. Beyond this, over 200 other reopening proposals have been put forward[6]. These range from long-term aspirations to bring back long lost lines, to plans for new infrastructure to support housing growth and other development in the immediate future.

Impression of new transport facilities at Barking Riverside

The demand for enhanced and new rail infrastructure shows no sign of abating, but the financial and technical capacity to deliver all the required or desired schemes is seriously constrained. The process of bringing online new rail infrastructure, such as a new station, is complex and often long. Navigating it requires clarity of objectives, good planning and both financial and public support. Many proposals spend years and large sums of money in development only to stall. Others mistake local public enthusiasm inspired by fond recollection for practical and financial viability.

No two projects are the same. The stages set out in this document are intended to offer an introductory outline. In reality, steps may be undertaken concurrently or in a different order depending on local circumstances. There are, however, essential elements that all projects must have. A formal sponsor is required to lead the project and local support needs to be in place. A well-articulated and up to date business case must clearly set out the costs and benefits of the proposal and funders and financiers must be on board to support development and implementation, and shoulder the risks associated with the proposal.

This document is intended to help potential proponents establish whether new rail infrastructure is desirable and feasible. This includes new stations on existing lines, new sections of line, and the development of new stations on those new lines. Using case studies, it offers guidance on building a solid business case, working with partners and supporters, potential sources of funding, and delivery.

Gateway tests

Opening of Cranbrook Station

Summarised below is a guide to the key stages each project must pass on its route to implementation. The stages are covered in more detail throughout the report. This is not a rigid process. Progress will be iterative and dependent on the challenges each project raises. Many of the stages can overlap and may need to be considered in a different order.

Do you have a workable idea?

- **What need is the project meeting?**
- **Is rail the best way of answering it?**
- **Is the proposal likely to be in line with policy objectives and development plans?**

These questions are looked at in more detail in Section 2 ('Identifying a potential project' page 7)

Does the project pass an initial assessment?

- **What markets are you trying to serve that cannot be served at the moment?**
- **Could any trains viably serve it?**
- **If a new service is needed, would it cover its costs?**
- **What works might be needed and are they affordable?**
- **Do the train operator for the area and Network Rail support the project?**
- **When could the scheme be implemented?**

These questions are looked at in more detail in Section 3 ('Initial assessment' page 13)

Does the business case stack up?

- **What do detailed project costs look like? What are they dependent on?**
- **Does the project directly support new housing or economic growth?**
- **What impact would it have on existing transport patterns?**
- **What external contributions (for example, from developers) might assist the case?**
- **What financial benefits would it bring locally and to the wider area?**

These questions are looked at in more detail in Section 4 ('Developing a business case' page 20)

Does the project have the support it needs?

- **Is there a sponsor to lead the project's development?**
- **Are partners in place who have a stake in the project and will help steer it?**
- **Are there supporters and stakeholders who will act as public advocates?**

These questions are looked at in more detail in Section 5 ('Building support' page 24)

Can the project be financed?

- **Who will contribute financially to implementation costs?**
- **Have all relevant public and private sources of funding been examined?**

These questions are looked at in more detail in Section 6 ('Financing a project' page 27)

Can the project be delivered ?

- **Can the project be guided through Network Rail's processes and reach implementation?**

These issues are looked at in more detail in Section 7 ('Development and delivery' page 32)

2. Identifying a potential project

This section is about thinking through an initial idea for a project.

What is rail good at?

Like all transport modes, rail has strengths and weaknesses. It is easy to get carried away with increasing passenger numbers and assume that places which previously had a station are suitable for one again now. Similarly, just because there is demand for better transport provision does not necessarily mean that rail is the best option to meet that need.

In simple terms, there must be sufficient people wanting to get from point A to point B to justify the cost of the route. What was logical 50 years ago may no longer be relevant because places of work, amenities or housing have moved. Realistic proposals for new or reopened lines or stations must identify people who will be keen to use a service and funders who might be willing to pay for it. It is not enough to pursue reopening projects because former stations are still in existence or a rail line passes through an existing settlement. Railways re-opened today have to meet very different and much more onerous safety standard than those that were acceptable in earlier generations. Nor should there be an assumption that the strong growth in passenger numbers that the network has seen over the past 20 years will continue indefinitely, or everywhere.

That said, current circumstances can undoubtedly offer fertile territory for rail. For example, schemes that link new rail capacity with major development proposals can attract both new passengers while potentially leveraging in financial contributions needed to make the project a reality. Successful schemes may well bring more than transport benefits by supporting other areas of Government policy, such as economic regeneration, and this section looks at how and where rail can support new housing, job creation and access to services where these have been concentrated in larger central units.

Government policy on expanding the rail network

National government policy for rail is to develop a modern network that supports economic growth and productivity, and helps people get around quickly and safely.

National strategic priorities for investment in the rail network are set out in the High Level Output Specification (HLOS). This is delivered primarily through five-year Control Periods which identify major priorities for Network Rail. Smaller schemes are delivered through a prioritised pipeline of work.

Rail can also form a part of other nationally-led initiatives. The National Infrastructure Development Plan includes rail development projects[7]. Rail links are expected to form part of plans for new housing developments and national and local government work together on initiatives including development around stations. National government can also stimulate and support local interest in new rail schemes via a variety of mechanisms. Growth funds, investment funds and the New Stations Fund all represent ways national government funding can be used for new rail projects.

Beyond these national initiatives, the promotion of any new station or line relies on local leadership. New services often aim to improve access to major towns and cities and so have wider impacts on the network, but their promotion is predominantly a local matter, involving the local authority. Here, land use planning offers guidance on rail's role in supporting growth and encouraging moves to more sustainable transport modes. It will also need to fit within local transport plans or be introduced in a way that allows existing plans to accommodate it.

Housing growth

Large scale housing growth can be a key part of proposals for new rail infrastructure. Rather than considering transport as an adjunct to new development, organising new communities around rail and other more sustainable transport modes from the outset offers social, economic and environment benefits.

Successive Westminster Governments have responded to pressures for housing by increasingly stretching targets for new building. Most recently, the 2016 Housing and Planning Act included an ambition to build one million new homes in England by 2020[8]. With concerns about land-take and transport implications to the fore, new rail infrastructure has the potential to support higher density new development, minimising road based journeys, supporting the economy and encouraging more sustainable patterns of living.

The Department for Communities and Local Government's (DCLG) household projections show the impact that such growth is expected to have on the number of households in England and Wales, with an increase from 24.8 million in 2017 to 27.8 million in 2030[9]. Beyond this, government statistics also suggest a 23 per cent population increase in England by 2039 - equivalent to 5.3 million new houses compared with 2014[10].

Selected projections of increased household numbers 2014-2039[11]	
Cambridgeshire, Essex and Hertfordshire	2.4m
Devon	70,000
Tyne and Wear	71,000
Northamptonshire	79,000
Sussex	171,000
Kent	189,000
Greater Manchester	228,000
West Midlands	264,000
West Yorkshire	174,000
Outer London	808,000

Transport plans for Brent Cross

Some planning authorities are already requiring developers to include rail in development plans. For example, planning permission for a 10,800 new unit Barking Riverside development in London is dependent on a new rail extension being in place[12]. With the Housing and Planning Act (2016) requiring each council to compile a register of brownfield land which may get 'Planning permission in principle' (PPIP)[13] other similar opportunities are likely to arise in the coming years.

The Cricklewood Brent Cross regeneration scheme is one of the largest in Europe. It received planning consent in 2010 and includes up to 27,000 jobs and 7,500 new houses and associated facilities[14]. Transport improvements include a new Thameslink station on the Midland Mainline and an improved London Underground station on the Northern Line.

The rail network itself is also a potential source of development land. Network Rail is in the process of identifying up to £1.8 billion of land and property which is surplus to requirements for the railway[15]. In April 2016, Network Rail and the Homes and Communities Agency began formally working with local councils to deliver up to 10,000 new properties on sites around stations with York, Taunton and Swindon taking part in the first wave. The Department for Transport (DfT) is developing similar projects through partnerships with up to 20 other local authorities[16].

Apperley Bridge and Kirkstall Forge

The new stations at Apperley Bridge and Kirkstall Forge are located between Leeds and Bradford. They are intended to support housing and commercial development in the area while reducing pressure on the busy local road network.

A joint business plan for the stations was approved in 2010 with a funding package for construction being confirmed as part of the Leeds Rail Growth Package in the 2011 National Infrastructure Plan. Final approval for both stations was given by the DfT in 2014 and they were opened in 2015 and 2016 respectively.

The development was put together by a partnership of the West Yorkshire Combined Authority (WYCA), Leeds City Council, Network Rail, Northern Rail and Commercial Estates Group. The DfT contributed £9.6 million towards the £16 million scheme with the remaining funding coming mainly from private sector contributions (£5 million) and the WYCA.

Apperley Bridge serves an established settlement which lost its previous station as part of the Beeching closures. The station has train services every 30 minutes throughout the day and initial estimates show in the region of 400 people a day are using it. Apperley Bridge's facilities include a car park, bicycle facilities and a bus terminus with links to a number of nearby towns.

Kirkstall Forge is a new development. Marketed as a 'contemporary urban village'[17] of 1,000 houses with office and leisure space, the new railway station currently offers hourly services with similar facilities to those at Apperley Bridge.

James Cook Hospital Railway Station

Partnership and coordination were essential in bringing about the James Cook University Hospital Station, which opened in Middlesbrough in May 2014[18].

Located in Middlesbrough and costing £2.2 million, the James Cook station offers hourly services. It consists of a single platform with waiting area, CCTV and passenger information system. It was part funded by the DfT's Local Sustainable Transport Fund (LSTF) with Tees Valley Unlimited, the Local Enterprise Partnership, acting as a coordinating body for other contributions.

Despite being only a kilometre from the nearest existing station, James Cook Hospital Station fills an important role locally, improving the accessibility of the hospital in a part of the country where car ownership is well below the national average. It also offers access to nearby employment sites and helps tackle congestion on surrounding roads. In particular, the new station met the need for transport arising from the transfer of services from local hospitals to this central facility.

The partnership behind the LSTF bid included Durham County Council and local authorities in Hartlepool, Darlington, Middlesbrough and Redcar & Cleveland. Middlesbrough Council progressed the planning application for the new station, beginning in spring 2012. The design of the station involved not just Network Rail and Northern Rail, but South Tees Hospital NHS Foundation Trust, and the heads of terms drawn up to allow access over the Trust's land for the building and maintenance of the new station.

Durham and North Yorkshire County Councils, and Scarborough Borough Council were particularly involved in specifying services offered to the station, as they have a strong interest in improved accessibility to healthcare facilities in the area. The Esk Valley Railway Development Company was also involved, ensuring that local stakeholder and passenger input was captured.

Building on its successful LSTF bid, Tees Valley Unlimited have gone on to successfully apply for £1m from the DfT's Sustainable Transport Transition funding. This is being used in combination with the Local Growth Fund to further develop the Connect Tees Valley sustainable transport project in 2016/17 with a formal partnership of 15 organisations (including Middlesbrough College, Virgin Trains East Coast, Northern/Arriva Trains North, Sustrans, Groundwork and Redcar and Eston Schools Sports Partnership) making match funding contributions.

In 2016, the Government asked for expressions of interest from local areas wanting to create new 'garden villages, towns and cities'. The first wave of developments will be of between 1,500 and 10,000 houses, with a rolling programme of new developments of over 10,000 houses to follow. Included in the package of support local partners are to receive from central government is potential help with capital for rail projects[19]. Potential garden settlement developments, such as the one at Long Marston, have already identified a new rail link as a central part of their project[20].

Any district which expects to see significant housing growth in the next 20 years should examine whether improved rail connections could form part of that provision.

Supporting employment

With record numbers of people commuting by train, linking new or existing employment sites to the rail network can expand labour markets, reduce reliance on private cars, increase transport choice and help address peak time congestion and air pollution.

For example, a railway station forms part of plans to expand the Green Park development on the outskirts of Reading. The existing 80 hectare business park is to be expanded with a residential development of 750 dwellings over 24 hectares. A phased construction is planned with cycling, bus and car parking facilities being added to the initial station design as the Green Park development grows[21].

Originally proposed in 2007, the new station could be open in 2018. Current plans indicate it will be served by two trains per hour in each direction and is likely to cost in the region of £11 million[22].

Bermuda Park on the outskirts of Nuneaton, which opened at the beginning of 2016, has a similar purpose. At the time of planning, nearly 13,000 people were living within two kilometres of the station, 23 per cent of whom were in households with no access to a car. Part of the NUCKLE project (see page 30), it was planned with the intention of improving access to an area earmarked for further housing and employment growth as well as offering improved access to the nearby George Elliot Hospital[23]. Similarly, the new Cambridge North station is planned to ease pressure on the main Cambridge station, help tackle road traffic congestion and improve connectivity for business developments in the north of the city[24].

Supporting the economy

New rail infrastructure can also improve access to key services and destinations, from hospitals to leisure and retail developments. Making major trip generators accessible by rail can both improve access and reduce road congestion.

A number of large retail plans have integrated new access into their development. Meadowhall has had a railway station since it opened in 1990. Glasshoughton in West Yorkshire opened in 2005 and serves a large outlet shopping development. Similar stations exist at Braintree Freeport in Essex and Chafford Hundred, which serves the Lakeside shopping centre. Other proposals include Cambridgeshire County Council's plan for a new station adjacent to Addenbrooke's Hospital and the bio-medical campus[25], which are major generators of journeys in the Cambridge area.

Rail services can also be planned to support existing town and city centres. Oxford Parkway station, located at Water Eaton near Oxford opened in 2015 and is situated on the first part of the planned East West railway. It is intended as a transport interchange with bus services to local residential areas and the hospital, cycle parking and a connection to park-and-ride facilities. The station also has a half-hourly service to Oxford City Centre and London. The £22 million planned Worcestershire Parkway Station would also offer improved London services. Due to open in 2019, it is expected to come with 500 parking spaces[26].

Barking Riverside

For many large brownfield sites, a barrier to redevelopment for housing is often the absence of good transport access. The Barking Riverside project, a joint venture between the Greater London Authority (GLA) and charitable housing association L&Q, aims to address this.

The 180 hectare brownfield site has a masterplan for 10,800 residential properties[27]. Outline planning permission granted in 2007 made the construction of a new rail station a prerequisite of the majority of the housing. The project masterplan, signed off by the Mayor of London in September 2016, is dependent upon extending the existing Gospel Oak to Barking rail line to the Riverside site. This £263 million project is being promoted by Transport for London through various stages of consultation, a Transport and Works Act Order and a public inquiry. Construction of the new track section and station is expected to begin in late 2017 with the new station opening in 2021[28].

Stratford-upon-Avon Parkway

Stratford Parkway Station is a new station on the outskirts of Stratford-upon-Avon. Opening in 2013, it is located on the North Warwickshire Line between Stratford and Birmingham. It is served by two trains per hour.

The bulk of the construction costs for Stratford-upon-Avon Parkway came from a successful Local Sustainable Transport Fund bid. Objectives for the station are to support more sustainable transport, for example by increasing the number and proportion of journeys taken by rail and removing nearly four million road miles per annum from the strategic road network[29]. Stratford-upon-Avon Parkway is adjacent to Bishopton Park and Ride, which has space for 725 vehicles, and is connected to walking and cycling routes.

The 2010 outline business case for the station forecast around 140,000 passenger journeys in its first full year of operation, of which 66,000 would be new to rail. This was predicted to increase gradually to around 190,000 trips by 2024/25[30].

Despite strong growth in the station's first two full years and additional off-peak services, estimated journey numbers remain significantly below initial projection at 83,000 for 2015/16[31]. Passenger numbers at the main Stratford rail station have remained flat over the same period.

3. Initial assessment

Having considered whether rail could offer an effective option for a project, the next stage is to assess the potential costs, passenger demand and practicalities of introducing new services. At this early stage, the assessment does not need to be a detailed piece of work but it should be informed enough to confirm whether or not the scheme is worthy of further consideration.

The franchising process is an important opportunity to make the DfT and potential bidders aware of the desire for a new station or service. The DfT will undertake a stakeholder consultation which will inform the terms of the new franchise and the final Invitation to Tender (ITT). This is the opportunity for sponsors to begin engagement with the DfT, and allows them to consider where the proposal may sit within the franchise specification. For example, the Northern Franchise Competition ITT required bidders to work with agencies and bodies regarding the potential re-opening to passenger train services of the line to Ashington and Blyth in Northumberland[32].

Those considering a new rail service should also look in detail at whether there is a receptive market for the services which a new station could offer. Useful supporting information may come from a wide variety of sources including transport and development plans and the rail industry's Long Term Planning Process (LTPP). The latter considers the best way to respond to future demand and produces regular market and route studies which outline industry proposals for investment.

In carrying out an initial assessment, important questions to think about include:

Will anyone use it?

There are no universal laws about optimum journey type, destinations or durations which most suit rail. A range of demand forecasting tools are regularly used and are essential in helping planning (see page 17). Starting points might be good access to regional employment centres, services attractive to medium and longer distance commuting, easy access to onward connections for example via intercity services, or support for new development proposals. Statistics show why these they kinds of factors should be considered:

- Only 3 per cent of journeys are by rail but these represent around 10 per cent of distance travelled[33].
- Up to 54 per cent of rail trips are taken getting to and from work in the morning and evening weekday rush[34].
- Journeys booked in advance increased by 47 per cent between 2010-11[35] and 2015-16, while railcard journeys increased by 40 per cent over the same period[36].
- A higher percentage of young people (aged 18-25) have a more positive attitude to using public transport than other higher age brackets[37].

Consider what the catchment area of a station or new services might be. Good road links and bus services with no other rail station nearby may offer a wide catchment area. Be alert though to the possible abstraction of passengers from other stations, especially if it means they will drive for more of their overall journey.

Could any trains serve it?

Simply having new infrastructure does not guarantee that trains will be able to use it. For example, a planned small station on a line used predominantly by intercity services is unlikely to find an operator wishing to stop at it. Making sure train operators are interested in a new station and that it fits with industry plans for the route are essential early considerations. Similarly, at peak times, parts of the rail network are currently at or near capacity. While investment in rolling stock, modern signalling and other enhancements aim to ease overcrowding, would accommodating more passengers and additional stops on existing infrastructure be possible or desirable?

How could it be paid for?

Constructing new stations and lines or bringing mothballed infrastructure back into railway use is expensive. Even a simple station with basic facilities is likely to cost several million pounds before it becomes useable and meets modern technical, operational, accessibility and safety standards. There may be further work and costs to adjust signalling systems to allow services to stop at the station whilst maintaining line capacity. Promoters should therefore be aware that the scheme costs will not necessarily be limited to purely the construction costs of the new station. Operating costs should also be considered and if a subsidy is required it can be more difficult to find funding for.

Is rail the best option?

Think about where people are trying to get to and from. Does this naturally to play to rail's strengths? Might light rail, such as a tram, or bus do the job better? Could better train services be part of a solution that also involves other public or private transport? What other factors are important? For example, could better rail services be effective in supporting development and the economy, helping to tackle road congestion, improve air quality, encourage more active travel or create a better local environment?

Is it affordable?

The costs of bringing new infrastructure onto the network vary dramatically from scheme to scheme. A simple single platform halt in an easy to access location has in some instances been brought into use for under £2 million. Meanwhile, a more heavily used two-platform station in a built up area could cost tens of millions.

Even before beginning discussions with Network Rail it is essential to establish what kind of offer might be needed to make a new railway station attractive and what this might mean in terms of cost. The issues that need to be considered are set out in the remainder of this section.

Newcourt

Newcourt is a new station on the Exmouth to Exeter rail line in Devon and opened in 2015. Its construction was overseen by the county council, rather than Network Rail, and it was undertaken as part of a major housing and commercial development on the edge of Exeter.

The project began in 2010 when an assessment was made of the viability of the area for development. The new railway station was not part of the plan at this initial stage and was only formally considered when the likely implications of the development proposals on existing roads became clear.

> "An integral part of the transportation strategy for Newcourt is minimising car use. The existing transport network is at stress during peak periods and there are limitations to how much more traffic can be accommodated."[38]

A report was then commissioned by the council to consider how best to minimise car use associated with the development. This identified the potential of a new rail station as part of a package of measures. Also included were capacity increases on nearby strategic roads, bus priority measures, and settlement layout designed to promote walking and cycling. The new station was predicted to attract 500 journeys each day.

Newcourt is part of the 15 year Devon Metro project which also includes plans for other new stations to support growth across the county. The station was planned as an unmanned single platform to be served by existing half hourly services. The new station is equipped with a ticket machine, passenger information system, secure cycle parking, disabled parking spaces and CCTV, but without car parking. The £1.5 million project received financial support from the first tranche of central government's New Stations Fund with the remainder coming from developer contributions. Construction began in September 2014 with the station opening the following June.

What kind of infrastructure is needed?

- What kind of trains might use it?
- Can the existing rolling stock be used, or are additional trains or carriages required?
- How frequent might services need to be?
- For a new station, what platforms, buildings and access ways are required? Will it be staffed or unstaffed? What level of access is required to meet Equalities Act requirements and EU and UK accessibility standards?

Are other works on the railway likely to be needed?

- Would works increase public risk, for example by bringing a level crossing back into use or making an existing one busier?
- Is the existing local road network likely to be sufficient to cope with demand?
- Will additional car parking be required?
- Will new bus access or interchange be required?
- Will new walking routes be required to cope with the additional usage?
- How might it affect the operations and signalling?

New rail schemes can be a central part of improved connectivity for new housing, employment and the economy. Early consideration should be given to whether major development can be cited in a way that connects them to the rail network and other public transport routes. Adopting this approach can:

- Reduce the negative impacts of development
- Support businesses located nearby
- Make jobs accessible to a wider section of the workforce
- Reduce the need for less effective road journeys.

New stations at Guildford

Guildford has a large population of rail commuters. This is expected to increase in the coming years as population growth, road congestion and other factors further increase demand for rail.

In April 2016, the Borough Council announced plans for new stations to the east and west of Guildford as part of its transport plan. These would serve planned and existing communities, offering access to a major hospital, a university campus and research park. They would also reduce the number of people needing to travel into the city centre by road, increase transport choice and encourage more sustainable travel behaviour in potential residents[39].

However, passenger numbers on peak time services between Guildford and London are already at or above acceptable levels. Attracting more passenger journeys to the railways would only work if accompanied by a major increase in capacity. This requires not only more rolling stock than is currently available, but also more capacity at the main London terminals serving Guildford.

Without major enhancements, additional stations to serve Guildford are not currently achievable, no matter what the level of demand. Network Rail and the council are developing plans for new capacity through Crossrail 2, on the Portsmouth to London line, and via the electrification of the North Downs Line with extra platforms at Guildford.

These benefits are important and can be quantified using a variety of planning tools. It is important to recognise, however, that they do not contribute directly to the financing of the project, which still requires tangible investment.

Is there demand?

Understanding how many people are likely to use a new station is a difficult and inexact process. There are a number of tools available for assessing demand.

Research undertaken for the DfT in 2010 into passenger demand at 27 new stations in Britain identifies a paucity of guidance available for assessing likely demand, and similarly limited evidence of how accurate predictions have been[40]. A number of assessments of demand have been wildly inaccurate – most often in underestimating demand, but also in overestimating on occasion. In an example of underestimating forecast demand, for Ebbw Vale Parkway predicted passenger numbers for 2008/09 were 45,000, where actually numbers were more than five times higher.

Every station has unique characteristics and there is no single modelling technique that can accurately predict all outcomes. However, incorrectly understanding the functions of the new station, inaccurate assumptions about train service specifications, miscalculations about abstraction of passengers from other travel modes and other stations, together with failures to attribute appropriate weighting to local factors can all play a part in demand models failing.

Passenger demand forecasting models

Four models are regularly used for forecasting demand for new stations[41]:

Trip rate approach - An assessment of the average number of trips likely to be made by rail from an area based on trips currently taken by other transport modes. This is a basic tool which does not include factors like journey times or frequency of trains, but it does offer a good starting point in considering a new station.

Trip end approach - A more developed version of the trip rate approach, this factors in information on demographics, socio-economic groups, journey times and frequencies. This approach can be used via the National Trip End Model (NTEM) forecasts and the TEMPro (Trip End Model Presentation Program) software.

Gravity model approach - Most likely to be used when a large change in travel habits is anticipated, this is based on detailed information on existing travel habits and the effect that the introduction of a new station would have on them. In addition to the factors included in the 'trip end approach', a gravity mode model is also able to take account of quality of rail services likely to be offered and how they compare with existing alternatives.

Mode choice approach - This focuses on effectiveness in shifting journeys to rail from other modes (as opposed to generating new journeys, or journeys to different destinations). An example would be for a new station at an airport, where the number and destination or journeys is already known, but the preferred transport mode can be influenced.

Network Rail recommends benchmarking to supplement demand forecasting, using station usage figures produced for the Office of Rail and Road. The rail industry's Passenger Demand Forecasting Handbook also provides useful information on the impact on the potential impact of new stations on the existing network. This is available to the group's members.

Forecasting is an iterative process and needs to be carried out throughout the planning cycle. It is, however, only as good as the information that supports it. In addition, Network Rail has suggested some of the things a promoter should know about their scheme to support forecasting work[42]. These can be summarised as:

- What rail service patterns and fares are assumed?
- When during the week are people most expected to travel?
- Will stopping existing services at a new station change overall journeys times for current passengers and what might this mean for demand?
- What are the main markets that would be served by a new station? (housing, employment, leisure, links with other transport modes)
- Will new trips be generated, or is the main market from people switching modes?
- Have rail's underlying growth and potential suppressed demand been factored in?
- How will demand translate to revenue?

Is the revenue from the demand enough to cover the cost of the proposed train services?

A new station needs to cover its cost commercially, otherwise train operators will not serve it unless contracted to do so and provided with payment for the losses incurred. The total revenue forecast from the station needs to be more than the cost of operating and maintaining the station, and serving it with trains.

Coventry Arena railway station

The need for a subsidy can be a significant barrier, particularly when local authorities can be required to cover shortfalls for up to three years of operation while new services become established. Aspects of this that need to be understood include:

- What is the forecast overall change in ticket revenue (all train operators)?
- What is the net change in ticket revenue forecast for the train operator sought to serve the station?
- What are the secondary revenues at the station (for example car parks, shop rents)?
- How much will the station cost to operate (is it staffed, for example)?
- What are the maintenance costs?
- What effect does calling at the station have on train service performance (this can be monetarised)?
- Even if the station breaks even over time, will it incur a loss in the first few years?

Is there room?

Accommodating more people and more trains on the rail network is not always easy. Even where there is strong demand for a new station it may not be possible to accommodate one. It is important to consider clearly if new capacity can realistically be added without compromising existing services.

Over 22,000 trains run every day in Britain[43] and in places full capacity has been reached[44]. Nearly 60 per cent of London commuter trains on weekday mornings cannot offer a seat to all those who have paid to travel[45]. While investment in new rolling stock and projects like Crossrail and the digital railway aim to improve things, putting more trains onto overcrowded parts of the network is not likely to be acceptable.

Even where there appears to be space for new services, it may not be possible to put them in place. Timetabling has to take into account factors including capability of signalling; variation in speed limits; one train in each section of track; mixing stopping, non-stopping and freight trains; and maintenance needs. There may be capacity for extra trains on that part of the line where the new station is proposed, but not at the destination station.

New stations between Bristol and Swindon

A number of plans have been put forward for new stations to serve fast growing populations between Bristol and Swindon.

Initial inspection shows a good case for several new stations. There are proposals for a 'park and rail' station at Bathampton to serve Bath Spa, and research found towns such as Corsham and Royal Wootton Bassett would be viable with strong demand of between 300,000 and 400,000 passenger journeys per year. New services would need to be instigated to serve the stations and while these are likely to require subsidies, other benefits such as journey time improvements and environmental benefits strengthen the case[46].

A key barrier to the project remains the ability to offer a viable train service. The proposed stations sit on the Great Western Mainline. The agreed priority for the line is to improve the quality of intercity services. Building and instigating services for local stopping trains is considered incompatible with this at the present time. There isn't the track capacity to run extra stopping trains and the cost of providing this track capacity is greater than the collective benefits the new stations might offer.

Although things could change in the future, putting in new train stations and services between Bristol and Swindon is not presently feasible, and illustrates the complexity of introducing new services, and sometimes the trade-offs that are required, in this case, longer distance services rather than regional links.

Rail freight

Rail freight is an important consideration in planning new rail infrastructure. First, new passenger services have the potential to impact on existing rail freight operations, for example, reducing the availability of track space.

Second, rail freight can benefit from the opening of new infrastructure. Increased capacity, the establishment of new routes, or opportunities for new or existing businesses to access the rail network can all come about.

Rail freight contributes to a range of national, regional and local policy objectives. Modal shift from road to rail makes an important contribution to reducing road congestion, road collisions and pollution. It also contributes to lowering carbon emissions and new rail freight infrastructure supports regeneration and job creation.

Scheme proponents should consult with the industry at an early stage to identify any impacts or opportunities. Freight on Rail (www.freightonrail.org.uk) acts as a focal point for engagement with the rail freight industry on land use planning issues.

4. Developing a business case

The key task for the project sponsor is to lead the development of a business case. A successful business case establishes a convincing reason why a project is needed. It should set out clearly the problem that needs to be solved and the best way of solving it.

A strong business case is a central part of any realistic rail infrastructure proposal. Once produced, the promoter should look to improve, update and refine it throughout the project. The DfT's guidance provides a clear step-by-step framework for appraising, developing and planning to deliver best value for public spending (see page 22). The current version of the guidance uses what is known as the Five Case Model. Applying it is intended to ensure best value for public money and to give transparency in decision making and accountability. This is more than good practice - all centrally funded public spending proposals are required to use the Treasury's approach.

Setting the right brief for a business case is vital in establishing an accurate measure of the benefits investment can bring. It is important that the business case sets out a financial case, a WebTAG (the DfT's guidance on appraising transport projects and proposals) compliant business case and a wider business case taking into account benefits such as job creation and support for industries like tourism. Any scheme with an initial Benefit Cost Ratio (BCR) of less that 1.5 (medium value for money) will struggle to progress. Ideally, projects should have BCR's of between 2 and 4 (high value for money) or higher (very high value for money)[47]. It is important to remember that WebTAG does not automatically monetise all quantitative and qualitative impacts and project sponsors may need to undertake detailed work to capture all costs and benefits of a proposal.

Initial assessment of the virtues of reopening the mothballed line between March and Wisbech in Cambridgeshire concentrated on the numbers of people likely to travel between the two towns by rail and resulted in a very modest Benefit – Cost Ratio (BCR) of 0.8 to 1. However, when a second study also factored in the benefits of an easier connection between Wisbech and Cambridge, both in terms of easier access to Cambridge's buoyant employment market and Wisbech's relatively affordable housing market, the BCR changed to a more attractive 3 to 1[48]. The BCR has since reduced as more detailed work showed the cost of rebuilding the route to be higher than first estimated.

Issues for a business case to consider

Investment in rail can bring a wide range of social, economic and environmental benefits. It is essential that the brief for a properly produced business case assesses all of these factors in generating an accurate picture of the project. Depending on the scheme, this could include:

Social
- Improved transport choice
- Improved access to labour markets
- Better mobility and access to key services
- Reduced journey times
- Health benefits from more active travel and less car reliance
- Lower road congestion
- Reduction in road accidents

Economic
- Housing growth
- Skills and productivity
- Job creation
- Efficient use of infrastructure
- Physical regeneration
- Support inward investment
- Access to new developments

Environmental
- Improved air quality
- Lower carbon growth

Halton Curve

The Halton Curve is a 2.7 kilometre section of track linking the North Wales Coast Line to the Liverpool section of the West Coast Main Line. Closed to passenger services in the 1970s, it is regarded as a 'missing link'[49] whose reintroduction would greatly improve connections and boost the economy through better leisure and employment opportunities.

Significant effort has gone into developing a business case for the Halton Curve which emphasises its strategic potential. Benefits, including making employment sites accessible, supporting tourism and helping to alleviate road congestion, have given the scheme a positive Benefit-Cost Ratio of 1:1.9[50]. The Halton Curve has been endorsed by bodies including Liverpool City Region, Welsh Assembly Government, LEP and local authorities.

The scheme is in the GRIP process and has in place funding of £10.4 million from the government's Local Growth Fund. The GRIP 3 technical study (updating work from 2007) was essential in building the case for the reinstatement of the line and was funded by Merseytravel, Halton, Cheshire West and Chester, and Cheshire East Councils, and Welsh Assembly Government.

The initial proposal is for one train per hour in each direction between Liverpool Lime Street and Chester with onward services into Wales a further possibility. The scheme is earmarked for completion in May 2018[51] and its use could be a requirement in the Wales and Border Franchise Competition ITT, or in the existing Northern franchise.

In connection with this, it is important that a business case captures the contribution rail investment might bring to the strategic objectives of local and national government and other potential partners. Examples of this are set out below:

Meeting strategic and policy objectives

National

- National government (Transport, Communities and Local Government, Energy and Industrial Strategy),
- Network Rail (national)
- Homes and Communities Agency

Sub-national

- Sub-national transport bodies
- Local Enterprise Partnerships
- Rail industry Long Term Planning Process (LTPP)
- Train Operating Companies
- Network Rail (regional)

Local

- Local authorities
- Business sector including house builders and any major employers

Sponsors should also think clearly about how resilient their project is. What risks does it face and what account has been taken of optimism bias? What might cause costs to increase and what impact will this have on overall viability? What are the contingent events and what delays might this cause? Does implementation rely on developer contributions and what happens if these are delayed or do not come to pass? How dependent is the project on enhancements being delivered elsewhere on the railway, for example electrification works? Business planning needs to capture and consider a wider range of factors and set out what impacts they will have on the project and its deliverability.

In developing a business case (and elsewhere in the project development process), sponsors are likely to require specialist consultants. Whether in land-use planning, economics or transport, consultants' work is only as good as their brief. In commissioning, it is essential that the full range of social, economic and environmental impacts of the scheme are identified, and that consultants with the expertise to capture these values comprehensively are engaged.

Building a business case - the five case model[52]

In line with Treasury's advice on evidence-based decision making, the DfT uses a five case model approach to decisions on investment. This shows whether the scheme fits with wider policy objectives, demonstrates value for money, is commercially viable, financially affordable and achievable.

Put together in three phases. (Strategic Outline Business Case, Outline Business Case and Full Business Case), this sets out the need for the project, a detailed assessment of the options and the project's overall benefits and costs. The five cases can be summarised as:

The strategic case: What is the problem, who is affected, how will the project solve it and why is action needed now. Is there evidence it will work and are there any other objectives that the scheme might contribute to?

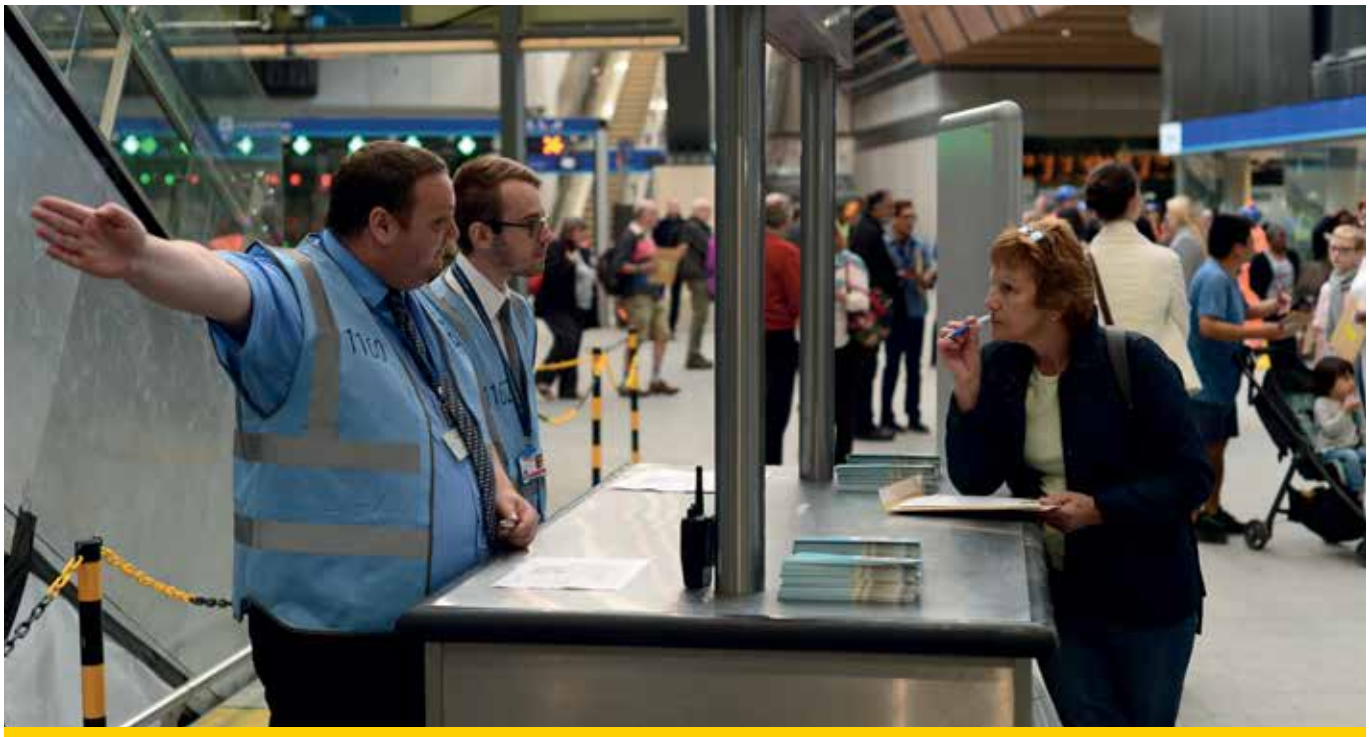
The economic case: Detailed evidence on the economic, environmental, social and distributional impacts of a proposal, and how strong the resulting value for money is expected to be. This will be scrutinised by an investment committee.

The financial case: How much does the project cost and who is paying? Is there third party funding, and how committed to the project are they? What are the financial risks and have these been quantified?

The commercial case: Is there a robust contracting and procurement strategy? Who is bearing any risk such as over planning consent or revenue generation and operating costs?

The management case: Who is the client/sponsor? What are the key decision making points? Is there a project board, are they properly skilled and is there a programme for measuring/evaluating the outcomes How are stakeholders involved?

Full details of the five case model are set out on the DfT website.



Navigating the new London Bridge station

East West Rail Consortium

The East West Rail Consortium is leading the development of a new strategic rail route including a new link between Cambridge and Oxford via Milton Keynes.

The closure of the Varsity Line between Oxford and Cambridge in 1967 was contentious[53]. Not only did its loss sever one of the few east-west routes not requiring travel via London, but it also took place despite not being recommended for closure in the Beeching report.

The consortium aiming to reopen the route was formed in 1995 and consists of local authorities and businesses. It is pursuing the project in three sections - Eastern, Central and Western[54]. The Western section was included in the 2012 HLOS announcement and is now partly complete with the section from Oxford Parkway to Bicester Village opening in 2015.

The initial business case for the project was completed in 2010 and refreshed in 2014. This demonstrated the project supported national, regional and local objectives across transport, economy, housing, environment and employment policy.

This was based upon:

- Plans for significant housing growth in the area served by the route, as identified by central government
- The opportunity to create rail links between regional hub towns and a new east-west strategic connection without interchange through London together with diversionary routes on a very busy part of the network
- An alternative to the congested trunk road network in an area, increasing choice, reducing journey times and helping to tackle emissions
- A route for freight (particularly container trains from Southampton) to access the West Coast Main Line[55].

In 2014, the predicted benefits for the western section were estimated to be worth over £73 million to the economy, would generate £4 million a year in revenue surplus and create 12,000 jobs. This gave the project a Benefit Cost Ratio of between 6.3 and 11.2 and an investment payback period of 5.5 years[56].

In 2016, the Government confirmed that a separate organisation would be established to accelerate the reopening of the route with private-sector involvement to design, build and operate the line[57]. Following recommendations from the National Infrastructure Commission, the Government also announced funding for the Western Section, which includes the Bedford to Oxford and Milton Keynes to Aylesbury lines[58]. A further £10 million has been allocated to identifying a preferred route for the line to extend east of Bedford, via Sandy, to Cambridge[59].

5. Building support

Where the need for and viability of a project have been clearly established, the next phase is to build a strong and well-supported public case.

Building partnerships and support

Across the country, there is no shortage of prospective rail infrastructure projects with interest groups willing to promote them. Scores of schemes are supported by campaigners, championed by politicians and advocated by local residents. Their virtues are cogently and passionately claimed as creating strategic links, reducing journey times, offering alternatives to congested roads, supporting jobs and regeneration and much more. Yet despite many schemes responding to genuine local need and enjoying warm and widespread support, they appear stuck, talked about in the local media but rarely moving any closer to reality.

Building support requires much more than simply generating noise about a project. It requires a sponsor and partner organisations formally to take ownership of the project, a clear vision to be agreed of what a successful outcome would be, work to enthuse and engage supporters, and a detailed business case to show that the whole thing has legs. Only when all this is in place will it be possible to engage formally with Network Rail and begin to move the project from a pipe dream to a serious proposal with the potential to be built.

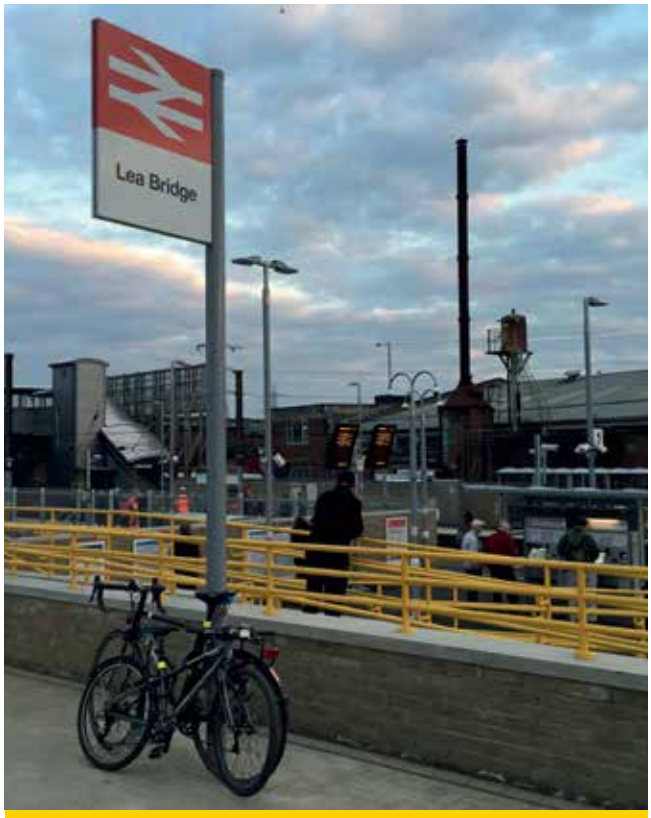
It is essential a prospective rail scheme is supported by a clear structure. Although this is an iterative process, which will differ from scheme to scheme, some common things to consider are:

- A sponsor to lead its development – In some instances, the initial case for a project such as a reopening is started by local residents. To stand a chance of success, however, once the initial case has been considered a body with a formal stake in bringing it about needs to take the lead. This is often (but not always) the top-tier local authority. Once the viability of a scheme has been demonstrated, the proposal needs to be adopted and included in the local plan, and preferably endorsed by the Local Economic Partnership as well. Establishing this status locally is often key to securing funding
- Partners to take a formal role in developing the proposal, including a business plan – They play an active part in the scope and direction of the project, influencing what it attempts to achieve and having a strong say in how swiftly it moves forward. Schemes will almost always be developed by partnerships, and are unlikely to be solely funded by any single funding. Partners should be willing to take a financial stake in developing the project, including the business plan and other stages in the Network Rail GRIP process. Many new rail infrastructure projects include local authorities, the business sector, Network Rail, and train operators. Representative bodies such as rail user groups can also take on a partner role
- Supporters to champion the scheme – this should include those who are influential in the local community such as councillors, local media and the local MP
- Engagement with franchise bidders during the franchise consultation and competition – Proponents to see what scope there is to support or include the scheme in their franchise bid. The opportunity to engage effectively with bidders cannot be underestimated and this can be an extremely powerful way of securing support – subject to the proposals being feasible, deliverable, and affordable.

Some partners, supporters and funders will already be in place, but it may now be timely to firm up roles and responsibilities for the project.

Almost as important as formal partners in the project are supporters willing to act as public advocates. Whilst they may not be formally involved in steering things, this group is essential in demonstrating that the scheme has wide public buy-in and is being championed by local people and organisations. Examples of supporters include community groups, local and national campaigners, local councillors, businesses, the constituency MP and local media.

Given the amount of time it can take to bring a rail project to fruition, it is important to plan how to keep supporters engaged. A web presence, public information events and news stories to announce key milestones can be integral in keeping the wider public up to date, helping to retain momentum and ensuring the benefits the project would bring are fully understood.



Lea Bridge station, reopened 2016

Todmorden Curve

The Todmorden Curve is a 500 metre 'missing link' which was reinstated in 2015[60]. Initially removed in 1972, its reopening allows direct rail services between Manchester and Burnley, halving travel times between the two.

The project took ten years to complete and involved a partnership between Northern Rail, Network Rail, Lancashire County Council and Burnley Council. Funded by Lancashire County Council, Burnley Council and national government, the project cost an estimated £10 million, including £8.8 million from the Regional Growth Fund, and followed a long campaign which involved Burnley Council, local organisations and campaigners.

Benefits from the project include bringing Burnley, Accrington and other towns within easier commuting distance of Manchester. Burnley Town Council has estimated that making the commute to Manchester shorter will generate £20 million in annual benefits and create as many as 1,000 jobs in the area.

The curve is used by hourly trains with further services planned from 2017. The reopening has already led to significant increases in passenger numbers. Station improvements and improved bus connections have been undertaken and land values around the route have increased by 12 per cent[61].

Campaigning for rail services in Northumberland

Cambridge North Station

Cambridge North station aims to improve both connectivity and journey times, and support regeneration and development[62].

Initially a project led by Cambridgeshire County Council and approved in 2013, the construction of the station itself has passed to Network Rail in 2015 and will be completed in 2017. It consists of three platforms, parking for 450 vehicles and 1,000 cycles, buildings and solar panels to generate 10 per cent of the station's electricity use. It is expected to be used by over 3,000 people a day and will cost over £50 million[63].

The new station is the main element of the Cambridge Northern Fringe Area Action Plan. This brownfield regeneration is envisaged by local authorities as "[a] high quality employment led mixed use development will help meet the long term growth needs of the Cambridge area."[64]

District and city authorities are using the station development as a catalyst for the redevelopment of a 34 hectare brownfield site (former railway engineering depot) with a new office development supporting in the region of 25,000 jobs, around 630 residential units and five hectares of new green space[65].

6. Funding and financing a project

By this stage, the sponsor should have a clear rationale for their project outlined in a positive business case and backed by partners and supporters. The next stage is to work toward financing of the new rail infrastructure including robust assessments of the timescale, cost and scope of the project. This section looks at potential sources of funding for implementing a new rail project and how to go about planning a station development and its services.

Identifying investment partners

National government

The majority of the government's investment in the rail network comes via HLOS, focuses on points of stress on the network and is delivered by Network Rail. Rail projects can, however, contribute to a wide range of national government's strategic objectives, for example, supporting the economy or enabling housing growth. This can give projects access to the Department for Business, Energy and Industrial Strategy's Regional Growth Fund (which operated from 2012-2015) and Local Growth Fund, which aims to support local economies and are delivered via local and regional partners including Local Enterprise Partnerships (see below). Similarly, the Department for Communities and Local Government's Large Sites Infrastructure Programme aims to support housing growth by investing in the necessary infrastructure, including transport, needed to bring projects to the market.

The DfT also operates a New Stations Fund, of which there have been two rounds each worth £20 million. Administered by Network Rail and open to bodies including local authorities and train operating companies, it provides up to 75 per cent of construction costs for selected new station projects which have a strong business case and have reached at least GRIP 3 (see section 5). In addition to a positive BCR, projects should be able to draw in third party funding, support growth and housing, and bring new people and communities onto the network without reducing the performance of existing services, including freight. Bidders remain responsible for all risks associated with costs and delivery. The first round of the fund supported new stations at Newcourt in Devon, Pye Corner in Wales and Lea Bridge in London, with stations at Ilkeston near Derby and Kenilworth near Coventry currently being constructed.

Local Enterprise Partnerships

Local Enterprise Partnerships (LEPs) are groupings of local authorities and businesses. Operating across most of England, there are 39 LEPs whose role is to determine economic priorities, support economic growth and create jobs. To do this, LEPs distribute a number of central government funds including some which relate to transport. Having absorbed Local Transport Bodies (LTBs) in 2014, they have responsibility for the DfT's local major transport schemes funding. LEPs also distribute Local Growth Fund monies from the Department for Business, Energy and Industrial Strategy (BEIS, formally the Department for Business, Innovation and Skills (BIS)). Rail projects have received funding from LEPs, for example the NUCKLE project in the West Midlands and main line signalling work to increase train frequency in Cornwall.

The New Anglia LEP produced a rail prospectus for Norfolk, Suffolk, Essex, Cambridgeshire and Hertfordshire. Published in 2012 and updated in 2015, this called for major investment in rail to 2032 including new stations around Cambridge and Chelmsford to support new housing and employment, and reduce pressure on existing transport infrastructure. The LEP has also been heavily involved in a successful campaign for improvements to the Great Eastern Rail Line, with new rolling stock and investment to reduce journey times between London, Colchester, Ipswich and Norwich. This included commissioning research that found £1.3 billion in capital investment on the line would realise £4.5 billion in economic benefits together with significant job creation[66].

Bromsgrove Station

In 2016, the relocated and enlarged Bromsgrove Station was opened to passengers. The new facilities include an improved ticket hall, lengthened platforms and an enlarged car park. The enhancements are intended to support local population and employment growth, with further service improvements also planned.

The project was instigated by Worcestershire County Council and Centro (now part of the West Midlands Combined Authority (WMCA)). They worked with transport consultants on a business case, borrowing money for the development against projected increases in ticket sales[67]. Using this approach, train operators are repaying the majority of the loan over a 25 year period.

Network Rail carried out the station development and have subsequently passed it over to WMCA and Worcestershire County Council on a long lease. This allows the local authorities to recover borrowing costs against track access charges while bearing the risk associated with this approach.

Although there were some delays with delivery of the project, the DfT has committed to including this financing arrangement in the renewed agreement for the London Midland franchise in 2017.

Local authorities

Along with Network Rail, local authorities involvement in both land-use and transport planning make them the key partners in most new rail infrastructure projects planned and taken forward outside the HLOS process.

Plans for Worcestershire Parkway

When considering the transport improvements and enhancements they will seek developer contributions for, local authorities should consider investment in rail in both capital and revenue. As schemes such as Kirkstall Forge and Barking Riverside show, this can help address the travel impact of development and ensure it is in line with the principles and objectives set out in local plans. More specifically, it can link the site to public transport, provide additional capacity, improve entry points such as stations or interchanges, and support improved frequency of services. Local authorities should think hard about sites that could be served by rail or opportunities to improve existing rail services.

A local authority contribution need not be restricted to direct capital funding. There are a number of ways they can help facilitate a rail project through use of their wider services. For example, the seven local authorities committed to contributing £45.6 million to East West Rail have already contributed nearly £2 million of this through a 'work in kind' arrangement. This is where the local authority undertakes work at its expense that otherwise Network Rail would have had to do. This work in kind has included local authority Rights of Way officers facilitating the level crossing closures and changes sought to enable the safe operation of fast trains and the purchase by Buckinghamshire County Council of the land needed at Winslow for a new station as part of a wider land deal by them.

Other transport bodies

A number of other bodies plan and operate transport infrastructure and services, and have a direct interest in enhancements to the railways.

The passenger transport arms of combined authorities manage public transport in most of England's major urban areas outside of Greater London. Those of the former Passenger Transport Authorities have a strong track history of planning and supporting rail infrastructure and are responsible for the large majority of station re-openings in England since the 1960s. Combined authorities themselves allow two or more local authorities to work formally and collaboratively on many policies and have an important role in transport in their area. The role of Mayors in cities that have chosen to elect them will also be important in determining transport objectives and outcomes. The power of a Mayor is most clearly seen in London working alongside Transport for London. Transport for the North (the first of the new Sub-National Transport Bodies) brings together local authorities, combined authorities, Rail North, LEPs and national agencies to plan and manage transport services and some infrastructure across the northern region.

On the platform at Oxford Parkway

The Mount Olive Chord

The Mount Olive Chord in Liverpool is a 300 metre section of track used for freight between the Port of Liverpool and the West Coast Main Line.

In 1987, the Chord was closed and the track lifted following a fire. However, its removal led to a significant increase in congestion caused by freight arriving at the port by road. While there was support for track reinstatement from Network Rail and others, no one organisation was able to fund the project in its entirety.

Instead, a partnership was formed to progress the project specification, costs and delivery. Merseytravel agreed to lead the project on the basis of involvement and funding from local authorities, European Union structural funds, the North West Development Agency, Network Rail's discretionary funds and from Peel Ports. The approach was a success. The Mount Olive Chord reopened in 2008 and is now a well-used single track link.

NUCKLE Project

The NUCKLE project is the name given to upgrades and new stations on the rail line linking Nuneaton, Coventry, Kenilworth, and Leamington Spa. The project is being funded by the DfT, Warwickshire County Council and Coventry and Warwickshire Local Enterprise Partnership (CWLEP) as part of the £88.6 million Local Growth Deal Package.

The project has suffered delays since the government confirmed funding in 2011. Higher than expected costs and the announcement that the line was to be electrified created an 18 month delay. The original plan to open the new Coventry Arena and Bermuda Park (Nuneaton) stations in December 2013 were moved back to 2017, before coming forward and actually opening in January 2015.

The project suffered negative publicity when it emerged trains services would not stop at Coventry Arena around major events because of the lack of capacity to meet expected demand[68]. This was despite the agreement to fund the new stations not being based on custom from major sporting events at the Arena because of problems dealing with large numbers of people in a short time period.

Plans to use Class 230 redesigned London Underground trains on the Coventry to Nuneaton line were withdrawn because of a shortage of time to run and evaluate a pilot service using the rolling stock[69]. Platform improvements, including a new bay platform at Coventry have been delayed until late 2017[70].

A Phase two of the project has been progressing more smoothly, with construction beginning on a new station at Kenilworth in August 2016 and expect to be complete in 2017[71].

The strategic planning of these various organisations offers the opportunity for different solutions to be proposed to develop the rail network and to place it at the heart of new development in those areas. For example, as part of its City Deal, the Liverpool City Region is funding the additional costs of the Halton Curve, because the line is seen as an important economic asset to help the attractiveness of the city region.

Specific support is available for designated Community Railways. Over 60 community rail partnerships exist to promote community involvement in local and rural routes, services and stations[72]. The Community Rail Development Fund is supported by the DfT and Network Rail, and administered by the Association of Community Rail Partnerships (ACoRP).

Other third party investment

There are many reasons why a third party might wish to invest in a project and following recent reviews of railway finances, there is an expectation that third party sources will make a larger contribution to rail projects in the future.

Most simply, developer contributions can make permission for new building work dependent on rail infrastructure investment. This can be direct, where the rail infrastructure directly serves the new development (for example, Woolwich station on Crossrail which supports planned new housing development)[73], or indirect and involve contributions being pooled toward other infrastructure investment objectives in the local area. Developer contributions need to be carefully planned and managed to ensure expectations are shared by all parties.

Network Rail is increasingly supportive of third party funding. Encouraging external investment in projects is envisaged as an important part of the organisation's regional structures, with partners such as local authorities, train operators or developers able to propose schemes. If adopted, these can then be included in Network Rail's delivery plans with the project sponsor and Network Rail working together on development.

Rail infrastructure can be an attractive asset for investors, such as pension funds and sovereign funds who are looking for long-term stable returns. Network Rail has shown some flexibility in establishing long term lease arrangements for new infrastructure. This allows train operators, local authorities and other investors to make a return against ticket sales and access charges.

Train operators

Train operators are well-placed to identify opportunities for new stations and other infrastructure. Their involvement and cooperation in plans for new infrastructure is essential. On rare occasions, train operators can invest in new infrastructure directly, for example Chiltern Railways Evergreen programme which involves redoubling track, new platforms and work to increase line speeds and a new section of track and stations[74]. The DfT can also require potential franchisees to consider new services and new stations in the Invitation to Tender. Costed options produced in this way refer to operating costs and not those concerning infrastructure.

Network Rail

As the infrastructure manager and system operator, Network Rail is an essential partner in any rail development project and should be involved from an early stage. For a project to be taken forward, Network Rail must recognise the value of plans and any objections they have need to be resolved.

Network Rail is devolving more of it decision making to its eight regional 'routes'. To support this, new boards are being established involving train operators and other interested parties such as business and local authorities. The boards will oversee investment priorities and agree development plans. Early contact with these structures will help establish whether the project contributes to Network Rail's priorities and how they might support it.

Tavistock, Devon

Since 2008, a plan has been under development to reconnect Tavistock in Devon to the rail network as part of a 750 unit housing development south of the town and in the Dartmoor National Park[75].

The intention is to use Section 106 monies to part-fund a reopening between Bere Alston and Tavistock. The rail element of the project includes a single track railway line, a new Tavistock station and improvements to Bere Alston station, a regular service between Tavistock and Plymouth and a pedestrian and cycle trail.

The project is supported in local plans, a planning application for the housing has been made and the project is a currently working toward GRIP 4, which includes the development of a single scheme option.

A new rail link would clearly offer strategic benefits for transport infrastructure in the area. It would also contribute to proposals for the Plymouth – Tavistock – Okehampton – Exeter railway, creating a second main line connection for Devon and Cornwall benefiting local economies, Plymouth and Exeter travel-to-work areas and improved rail freight resilience. Proponents hope that the new Tavistock station will form part of the next rail franchise for the area.

7. Development and delivery

By this stage the project sponsor should have in place a well-defined positive business case and project partners, including potential funders.

This section sets out Network Rail's processes for assessing, developing and delivering rail projects. It includes detailed questions about the types of services which need to be offered, and the design and build of the infrastructure itself. Not all of these will involve automatic or self-evident choices, but instead require strategic thinking about the role of the railway, and how good planning can best ensure its success while minimising risk.

There are two main processes which take a project to implementation. The GRIP process (Governance for Rail Investment Projects) sets out what information needs to be produced in order for a project to progress to implementation. Running consecutively with this is a four step process governing investment in rail projects. Both are overseen by Network Rail as part of its role as infrastructure manager for the railway and system operator. This section offers guidance on navigating these processes from considering the type and scale of development to pursue, drawing up plans for buildings and services, to signing off the final scheme.

Costs and financing

There is significant financial risk associated with taking on a rail project which the scheme sponsor must be prepared for. While large numbers of people are using the railway and bringing in record levels of revenue from ticket sales, it is important to remember that overall the railway still requires a public subsidy. Adopting new services and stations onto the network must therefore be done in a way that does not place an unnecessary additional burden on public finances. Neither does the cost of adding to the rail network consist solely of building new infrastructure. Running costs also need to be taken into account, with operations, maintenance and renewals all needing to be considered.

Portishead

Bringing a new station onto the network can be a long process.

Reopening the Portishead line to passenger services has been a priority for West of England local authorities for over 15 years[76]. The project to build two miles of new track (and upgrade a further eight miles) to connect an additional 30,000 people to the rail network is being led by North Somerset Council on behalf of the four West of England councils.

North Somerset Council undertook a first positive feasibility study into reopening the Portishead line as far back as 2001[77]. After a period where no funds were available to take the project forward, a second feasibility study was carried out in 2008[78]. North Somerset bought a three mile section of the disused line in 2009 and a GRIP 3 was completed in 2010. Shortly after this the scheme became part of the wider Bristol Metro project (later MetroWest).

Funding for the reconstruction of the Portishead line was successfully sought in 2012 through a local Growth Deal and track clearance work begun in 2013. An initial decision on station location was taken in 2013 followed by a second consultation on options and a final decision in 2015. A public consultation on the entire reopening was then carried out in 2015 and a GRIP 3 study of phase one of the MetroWest project (including Portishead) is currently underway. Building work is not expected to begin before 2018.

Internal and external - How Network Rail deals with rail enhancement projects

Guide to Rail Investment Process (GRIP)[79]

While investments in the railways can be funded and delivered in various ways, GRIP sets reporting stages for all projects and allows Network Rail to assess value for money, compatibility with the existing rail network and consistency with rail sector objectives. GRIP has eight sequential steps:

Initiating

Step 1. Output Definition – Establishes the scope of what the proposers of the project want to achieve.

Step 2. Feasibility – Outlines what investment would be needed and identifies any major barriers to the project.

Choosing an option

Step 3. Option Selection – Choices in how to bring the project about, assessment of which is the best and more information on whether it is affordable.

Design

Step 4. Single Option Development – How the choice identified in Step 3 would be implemented to create an outline design

Step 5. Detailed design – The specification the project would be built to with engineering plans, definitive costs, times, resources and risk assessments.

Building

Step 6. Construction test and commission – Building is undertaken and tested to make sure it is operating in line with the design brief.

Close

Step 7. Scheme handback – Responsibility for the finished project moves from the contractor to the operators.

Step 8. Project closeout – Contracts are settled, contingencies and warranties are put into place, an assessment of the benefits is carried out and the project formally closes.

Network Rail investment process[80]

As manager of the country's railways, Network Rail has the key role in how and where new infrastructure is added to the network. Alongside the GRIP process, it operates a four stage investment process to guide the development and implementation of projects.

Stage 1: Investment (project) ideas: initiation and prioritisation

The proposer sets out project aims, how much it might cost, what Network Rail will be expected to do and who else is involved. If this is in order, they will make an initial consideration of the project before passing it to the Route Strategy Planning Group (RSPG) for more detailed assessment. The RSPG will either reject or prioritise it based on alignment with rail industry priorities, resource constraints and delivery.

Stage 2: Initial project feasibility and development process

This sets out who will do what in taking the project forward. In the large majority of cases, Network Rail's Route Enhancement managers will take the lead for the organisation. They will define the tasks Network Rail has to oversee as network manager (non-contestable services) and which can be delivered by Network Rail or third parties such as consultants (contestable services).

Stage 3: Project development

This phase deals with project options and appraisal, with a single outline design emerging as a recommendation. Indicative time and cost information will be produced alongside this to inform the business case. At the end of the project development phase it should be clear if the case for the project is positive and if so how it will be taken further.

Stage 4: Implementation

The implementation stage is made up of project management as the detailed design, construction, approval and project close out are completed. The project proposer can work with Network Rail or other parties on these elements.

The costs of building a new station vary dramatically from project to project. Sources of funding are discussed elsewhere in this report but as the government moves toward a less prescriptive HLOS model, it is important to consider third party funding options as well as money which may be available from the public sector from national and local levels.

Project sponsors should be clear from the outset how active their role will be with clear responsibilities set with equivalents in delivery organisations. There can be advantages in taking on some contestable factors from Network Rail. Similarly, thorough planning can minimise the impact of unforeseen problems such as the unexpected discovery of mine workings on the site of the proposed Low Moor station (see page 35).

Alignments and routes:

This refers to the route any physical track is expected to follow together with the location of any new stations.

When considering new rail services, the temptation is to think solely of old alignments and stations being brought back to life. Before focusing on the former railway solum, it is important to think whether it is genuinely the best option available. In the 50 years since many Beeching era closures, much is likely to have changed in terms of local housing location and common journeys. For example, there has been significant amounts of development in the area formerly served by the line between York and Hull via Beverley, including on the old alignment itself. It is important to consider alternative options which may suit present and future needs better, particularly if there has been much encroachment on the old track bed.

Even when dealing with existing mothballed or freight only routes, engineering costs are likely to be high and track design and construction often requires earthworks stabilisation, new drainage and other civil engineering. Bringing disused railway lines back into use can be complex.

Regeneration and longer trains on the revived West London line

Low Moor, Bradford

In 2016, construction of a new station at Low Moor near Bradford was affected by the discovery of old mine working directly under the planned footbridge and lift shaft. Effective risk management meant the impact of this unexpected development has been kept to a minimum.

Campaigners had called for the reopening of a station at Low Moor since 2000 and funding for the project was initially agreed in 2009. On site works on the £10.8 million project begin in Summer 2015 via investment from the West Yorkshire Combined Authority, Bradford Council and Network Rail[81]. Work including platforms and car park, had reached a relatively advanced stage before the 60 metre deep and 12 metre wide shaft was discovered[82]. The site was known to have been mined but historic maps had incorrectly placed the shaft's location. It's existence was only discovered when ground investigations were carried out.

Given the history of the site, contingency plans were in place as part of the scheme's planning. Construction delays could be kept to as little as three months while extra surveys are carried out. Construction work elsewhere on the site has been able to continue with the hope that the first trains serving the station will be able to operate for Summer 2017.

Problems likely to be encountered include land ownership and assembly, level crossings, footpaths, and the condition of road and rail bridges. Where structures such as tunnels or viaducts have been retained, these are generally owned and maintained by the Highways England Historical Railways Estate. The rest of the network of former lines is another matter.

After the mass railway closures of the 1950s and 1960s, many former lines were not expected to have a future role as railways and were handed over to local authorities or organisations like Sustrans. These lines have subsequently been put to a variety of uses including for public access, as cycle routes and for nature conservation. In other cases old alignments have been sold off for development, for example in the case of the line between Bedford and Cambridge. In other cases, land was sold piecemeal to riparian owners, and land re-assembly might be a complex task.

Local authorities can use their development plans to protect old alignments where there is the potential for a reopening. However, most disused lines are not registered.

Where parts of alignments have been sold to private owners, compulsory purchase is possible via a Transport and Works Act Order (TWA Order). TWA Orders include powers such as closure or alteration of roads or footpaths. An Order is made via an application to the Secretary of State and can come from either a public or private organisation. The TWA Order confers the right to build and operate the line, and provides protection for the operator, for example, against claims for nuisance caused by the noise of passing trains[83].

Although TWA Orders are generally favoured for local schemes, Development Consent Orders (DCOs) can also be used to allow the construction of new railway where this is envisaged as part of the strategic rail network. DCOs are issued nationally by ministers and can include rights to compulsorily purchase land and to confer 'statutory authority' status for carrying out a development[84].

Design and build

The type and extent of buildings a station needs should directly relate to how it is expected to be used and should be considered in detail as part of the business case. In the most basic terms, a station on a busy section of line with lots of commuters will need more comprehensive facilities than a halt on a branch line, which may be unstaffed.

The station's broader role should be an early consideration. Could the station contribute to strategic objectives of local authorities, Local Enterprise Partnerships and others in the area? Could it act as an interchange for bus services and other transport, as at Accrington, for example? How many people will live near the station? What other facilities are nearby? What does this mean in terms of the balance between pedestrian and cycle access, and car parking? Does the station create opportunities for new retail space? Could nearby public spaces be improved or brownfield sites brought back into use? How might this relate to the funding of the station?

Whatever the level of provision, there are strict accessibility standards for railway stations which must be adhered to. These cover all physical construction including platforms, any stations buildings, shelters, car parking and any other static infrastructure needed to operate a station. When looking to re-open an old station, access for people with reduced mobility may be more of an issue to accommodate and a new, nearby location may be a better solution.

Network Rail and the Rail Safety and Standards Board (RSSB) maintains clear design standards which need to be followed if new infrastructure is to be accepted onto the network. Coupled with this, the DfT and Transport Scotland also produce Design Standards for Accessible Railway Stations. Compliant with the Equalities Act, this joint Code of Practice sets out minimum standards of accessibility for station location, car parking, stairs and steps, toilets, lighting, signage and connecting transport[85].

The Code needs to be followed whenever facilities are installed, renewed or replaced. Franchise operators responsible for serving any new station will also need a strong say in the level of facilities a new station has, and the likely running costs of operation.

Where Network Rail is not the construction contractor, particular importance needs to be attached to ensuring work reaches the required standards. If work does not reach the appropriate level, Network Rail can and will refuse to take the infrastructure on. Resolving disputes of this type can be expensive and time consuming.

The former line at Portishead

Station Access Changes (SAC) cover the operational cost of the station and are set by ORR. In some cases the ORR has agreed that the SAC can be used to recover part of the capital cost of building the new station, as in the case of Bromsgrove. This normally requires DfT consent to underpin the long-term usage of the station with an agreement that trains will call there.

Rolling stock and services

Deciding whether train services are able to serve a new station or section of track is not always straightforward. While recent years have seen major investment in new trains, there is no guarantee that appropriate rolling stock will be available for a new service, nor that the service can be accommodated into the timetable.

Passenger train operating companies run the trains either via franchises, concessions, open access agreements or through charters. Ownership of the rolling stock, however, mainly stays with the Rolling Stock Leasing Companies (RoSCos) from whom the train operators generally lease their trains. Responsibility for managing access to the track falls to Network Rail by virtue of its responsibility for timetabling (which is itself due to the fact that Network Rail is the manager of the infrastructure). Network Rail has responsibility for deciding journey times to fit the various train services onto the network as well as being responsible for setting track access charges. The track access charges are designed to allow Network Rail to recover the cost of the maintenance and renewals cost of its infrastructure from the users of the network. The Office of Rail and Road overseas the setting of these charges as well as access to the Network via the timetabling of services to ensure that Network Rail is acting in a fair and non-discriminatory way.

Every time a new station stop is added to an existing service without any changes to the infrastructure it is likely to lengthen overall journey times and consequently has a negative effect on some existing passengers. If the new station worsens overcrowding or lengthens journey times for existing passengers too much then it is likely to be rejected. However, if the new station is accompanied by upgrades to the signalling and track, allowing trains to run faster, shorter journey times can be achieved despite additional stops. This was one of the benefits of the Chiltern 'Evergreen' upgrades. Where an entirely new section of track is planned, additional rolling stock and paths into existing stations will be required. Where disused platforms exist, linking in new services are much easier than trying to find the additional capacity between existing train services. Factors such as abstraction (where passengers transfer from an existing operator or service to the new operator or service), capacity and peak demand will all be drawn out in the GRIP process. New services that damage the reliability of existing timetables are highly unlikely to be acceptable to Network Rail and new infrastructure to provide a more robust timetable may be required (at a cost to the project), before the new service can start.

The early steps of the GRIP process will establish whether it is feasible to introduce new services or new stations. As the scheme progresses, this will be honed, generally via franchise specifications issued by the DfT and other processes such as public consultations which many franchise operators carry out on their timetables. Not all schemes form part of franchises, and a number of new routes, such as Hull to London, have come about through entrepreneurial open access operators. Scheme sponsors should be on the lookout for opportunities to test the viability and desirability of new services as well as to adapt them based on the results of the GRIP process and consultation feedback.

Design, finance and build

The Government has signalled it intends to look at alternative models of delivery for new rail infrastructure. This includes setting up a new organisation to oversee the design, financing and build of new rail infrastructure for East West Rail. It is not clear how widespread the use of such approaches will be, or whether they will be deemed appropriate for smaller schemes. Proponents should, however, be willing to be flexible in deciding the best way of delivering their project.

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Page 36: Portishead (Tom Bastin, via flickr)

railfuture

Railfuture is a UK wide organisation campaigning for better rail services and facilities for passengers and freight, including new lines and stations. A voluntary organisation to which many rail user groups are affiliated, the organisation is independent both politically and commercially.

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Campaign for Better Transport

Campaign for Better Transport's vision is a country where communities have affordable transport that improves quality of life and protects the environment. Achieving our vision requires substantial changes to UK transport policy which we aim to achieve by providing well-researched, practical solutions that gain support from both decision-makers and the public.

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