

Generic corridor study (Type E)

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1 *Type E Corridor*

1.1.1 *Definition of Type E Corridor*

1.1.2 For the purposes of this report a Type E corridor can be specified as:

'Sub Regional Settlement Corridor', characterised by the development of settlements around rail stations and involving major new urban areas.

1.1.3 There are 5 corridors which have been highlighted for further analysis in this report, these are:

- North Kent area
- Bletchley to Bedford
- East Devon
- Oxfordshire(Banbury)
- Birmingham to Lichfield

These five corridors include areas which cover London commuter links, provincial links and provincial city links.

1.1.4 Journey to work, and rail service data has been obtained for each of the above corridors, and is detailed below:

1.1.5 *North Kent Area Description*

1.1.6 This double track line through the North Kent area mainly serves as a commuter link to and from London. Services generally run from London Victoria to Dover Priory or Ramsgate. A branch exists to the north of the area that serves Sheerness. Substantial freight traffic operates in the area as well as the commuter services.

1.1.7 Stations in the area studied include Rochester, Chatham, Gillingham, Rainham, Newington, Sittingbourne, Teynham and Faversham (and Aylesham now??) where the Ramsgate and Dover routes diverge.

1.1.8 Railtrack's Network Management Statement indicates that at present the line has between 30 and 69% of its capacity in use. The linespeed varies between 40 and 105 mph. The loading gauge for freight is W6A, and the line is electrified.

Service Provision

Table 1.1: Service Provision (service intervals in minutes)

North Kent			
1991			
AM peak	AM peak	PM Peak	PM Peak
08:00 - 09:00	08:00 - 09:00	17:00 - 18:00	17:00 - 18:00
To London	From London	To London	From London
7	20	15	12

1.1.9 The table above shows the frequency of services in the North Kent area, both to and from London, for the AM and PM peaks, during the 1991 Summer timetable. Gillingham has been used as the station for the service frequency to be assessed.

1.1.10 The service provision is much more frequent to London every 7 minutes, than from London in the AM peak, to cater for the heavy commuter traffic into London. This is also the case in the PM peak, every 12 minutes, however due to the peak being less focused in the PM, the service is not as intense from London and is every 12 minutes for services departing London for Gillingham between 17:00 and 18:00. The service maintains a high frequency throughout the day and the evening to and from London.

Table 1.2 Journey to Work Data

Source: 1991 Census (North Kent Area)

Journey to work data (from 1991 census)		
North Kent Area		
Gillingham	% of Journeys to work by train	Approx distance from stn(km)
(ward reference) LGFD	15.1-20	0.5
LGFG	15.1-20	0.5
LGFE	15.1-20	1
LGFB	10.1 - 15	1.5
LGFA	10.1-15	1.5
LGFP	5.1 - 10	2
Rainham		
LGFH	15.1 -20	0.5
LGAY	5.1 -10	1.5
LGFK	+ 20	1.5
LGfJ	10.1-15	2
LGFL	10.1-15	2.5
LGFF	5.1-10	3.5
LGFC	3.1-5	3
Newington		
LNfQ	15.1 - 20	1
LNfB	5.1-10	3
LNfJ	10.1 -15	4
LNfK	3.1-5	4.5
Sittingbourne		
LNfS	10.1-15	1.5
LNfH	5.1-10	2
LNGB	5.1-10	2.5
LNGA	5.1-10	4
Teynham		
LNfY	10.1-15	4
Faversham		
LNfZ	10.1-15	1
LNfA	5.1-10	1
LNfE	10.1-15	1.5
LNfC	3.1-5	3.5
LNfD	5.1-10	5
LNfF	5.1-10	7
Journey to work data (from 1991 census)		
Bedford To Bletchley		

1.1.11 The above table shows journey to work data from the 1991 census, for the wards around the stations in the North Kent corridor. This is presented as rail users as a percentage of total journeys to work made by employed residents of the ward. The approximate distance in kilometres from the centre of the ward to the nearest station has been added, and the wards sorted into distance in ascending order.

1.1.12 It can be seen from the above figures, that generally, the nearer the ward to the station the larger the percentage of rail users from that ward. This can be seen in Gillingham, where, in ward LGFD, 0.5 kilometres from Gillingham station between 15.1 and 20% of users journey to work by rail, and ward LGFP, 2 kilometres from Gillingham, where between 5.1 and 10% of residents journey to work by rail.

1.1.13 ***Bletchley to Bedford Area Description***

1.1.14 This double track route provides a service which connects the radial routes of the West Coast Main Line at Bletchley and the Midland Main Line at Bedford. Apart from the two terminal stations the line is very rural in nature and operates at a 'right angle' to the main flows to and from London. The line is expensive to operate due to the outdated working methods still in force, however upgrading is proposed by the East - West consortium, which would extend the route to link, Oxford, Cambridge, Bedford, Milton Keynes, Oxford and Bristol, this could relieve central London of some through traffic. A study into this link has been commissioned.

1.1.15 Stations are generally unstaffed, platforms are extremely short and generally have very limited passenger waiting facilities. Tickets from intermediate stations are bought on the train. Some stations have information available from staff, who are still in place to operate level crossing gates etc.

1.1.16 This line generally serves local traffic between the centres, with a significant amount of schools traffic. Some traffic is also likely to be feeder traffic for flows to and from London.

1.1.17 The route is at present W8 gauge and some freight operates over the line from Stewartby. It has been used as a diversionary route between the Midland Main Line and West Coast Main Line in the past. Current (1999) linespeed is low, between 40 and 75 mph, and the line is currently under 30% utilised. (Source: Railtrack NMS) It is diesel operated at present and is currently operated by Silverlink trains.

Service Provision

1.1.18 In 1991 service provision was as in the table below, with services running at approximately hourly intervals throughout the day from 05:50 to 21:15. Connections were advertised at Bletchley for London Euston, and at Bedford for Wellingborough and Kettering. There is no increase in services during either of the two peak hours.

Table 1.3: Service Provision (service intervals in minutes)

08:00 - 09:00	08:00 - 09:00	17:00 - 18:00	17:00 - 18:00
To Bedford	From Bedford	To Bedford	From Bedford
60	60	60	60

Table 1.4: Journey to Work Data

	% of Journeys to work by train	Approx distance from stn(km)
Kempston		
Hardwick		
Kempston	1.1-3	2.5
Wootton	3.1-5	2.5
Wilhamstead	3.1-5	4
Kempston Rural	1.1-3	6
Bromham	5.1 -10	6
Stewartby		
Marston	5.1-10	4
Haynes and Houghton	5.1-10	5
Millbrook		
Marston	5.1-10	3
Amphill	5.1-10	3
Lidington		
Marston	5.1-10	2
Cranfield	1.1-3	4.25
Apsley Guise		
Apsley	5.1-10	2.5

1.1.19 Data is not available for either Bedford or Bletchley, but is available for the majority of stations on the line. The journey to work figures may be affected by the proximity of London to the area, and the possibility that some residents drive to nearby Thameslink stations, such as Flitwick in the case of Amphill, or Bedford in the case of Bromham, rather than take the train on the Bedford to Bletchley line. Some zones have also been included in more than one station's catchment area due to their large size, most noticeably Marston.

1.2.5 The journey to work data from the 1991 census, and approximate distance from the centre of the ward to the nearest railway station is shown above. Data is not available for Exeter, however the data obtained shows that usage of rail by the local population in the area is relatively low for work purposes, with a maximum of 9% at Lymington, although this may be related to the MOD property in the area.

1.3 ***Oxfordshire(Banbury) Area Description***

1.3.1 Services through Banbury operate to Birmingham and other conurbations to the north and to London and Oxford in the south. Services are either ex Intercity services (Now Virgin Cross Country, or local services via Princes Risborough, now operated by M40 trains. Services are also available linking the South West and South Wales.

1.3.2 The station is staffed for the duration of the rail service, and has a buffet and waiting rooms, seats etc for passengers. A 250 space car park is available for rail users. The bus station is located nearby approximately 400 metres from the rail station.

1.3.3 The station serves long distance trips to major towns north and south of Banbury and the town itself is developing as a commuter centre to and from London, demand which has been accelerated by the M40 motorway opening in 1990. Some commuter traffic also uses the station to reach Birmingham.

1.3.4 The route through Banbury is at present between 30-69% utilised and has a linespeed of between 80-105 mph, the loading gauge is at present W8. The line is diesel operated. Significant freight flows operate on this route.

Service Provision

Table 1.7: Service Provision (service intervals shown in minutes)

Banbury			
1991			
AM peak	AM peak	PM Peak	PM Peak
08:00 - 09:00	08:00 - 09:00	17:00 - 18:00	17:00 - 18:00
To London	From London	To London	From London
20	60	30	30

1.3.5 The table above shows the frequency of trains to and from London in the Peak periods to and from Banbury, as can be seen in the morning peak period between 08:00 and 09:00. There were three trains, with a frequency of every 20 minutes to London from Banbury, and in the evening two trains leaving London between 17:00 and 18:00 to Banbury.

1.3.6 There were also many services throughout the day to and from other locations across the UK, via the cross country network. These trains serve areas such as Edinburgh, Glasgow, Bristol and Penzance. Throughout the off peak periods and into the early evening they generally run to a hourly frequency on the Oxford - Banbury - Birmingham corridor.

Table 1.8: Journey to Work Data

1.3.7 CAPRI data has been obtained, which provides an indication of the direction of flows from Banbury. The top ten flows from Banbury are presented in the table below:

Banbury	Oxford	132634
Banbury	Travelcard zones	116259
Banbury	London BR	63946
Banbury	Birmingham	41261
Banbury	Zone U1 London	21640
Banbury	Reading BR	16405
Banbury	Bicester	16316
Banbury	Leamington Spa	16210
Banbury	Birmingham intl	10414
Banbury	Coventry	10074

1.3.8 Of the top ten flows, five are to the south, five to the north, the largest of which are flows to London (in the form of travelcard zones and London BR tickets), the second largest flow is to Oxford, and these are then followed by flows to Birmingham.

1.4 ***Birmingham Lichfield Area Description***

- 1.4.1 The line between Birmingham and Lichfield forms part of the Cross City line across the West Midlands conurbation. Stretching from Lichfield City in the North to Redditch in the south. The line was electrified in 1991. The line extends to the north from Lichfield and links at Wichnor Junction onto the Birmingham to Derby line, and some services are diverted this way due to engineering work.
- 1.4.2 Park and ride facilities are available at several stations on the route, and in 1992, substantial car parks existed at the following stations on the route: Chester Road (97), Wylde Green (45) Sutton Coldfield (300), Four Oaks(206), Blake Street(129) Lichfield City and Lichfield Trent Valley have also recently been provided with parking areas.
- 1.4.3 Facilities at the stations on the corridor usually comprise a booking office (staffed for the duration of the rail service (a Centro requirement), a covered waiting area and seats. Some recently rebuilt stations also include features such as Public Art.
- 1.4.4 The line mainly serves as commuter access to the centre of Birmingham, although some through traffic will connect with the West Coast Main Line at Lichfield Trent Valley.
- 1.4.5 The line has between 30 and 69% of available capacity used, has a linespeed of between 40 and 75mph, and has a loading gauge of W6A for standard freight vehicles, though there is generally no freight on the line apart from a small amount from Brownhills through Lichfield.

Service Provision

Table 1.9: Service Provision (service intervals shown in minutes)

To Birmingham	From Birmingham	To Birmingham	From Birmingham
10	15	20	10

- 1.4.6 The table above shows the peak hour service provision for the Birmingham to Lichfield corridor. The service can be seen to be extremely frequent, every 10 minutes, in the AM and PM peaks in the direction of the heaviest demand, to and from Birmingham.

- 1.4.7 The earliest service from Lichfield to Birmingham runs at 06:30 and the last at 19:15, however during this period there was much engineering work in connection with the upgrading of the service, and the service today runs its last Lichfield - Birmingham service at 23:00. During the off peak period in 1991, services ran every half an hour from Lichfield Trent Valley, and half hourly from Lichfield City. The two combining together to make a quarter hourly service to Birmingham.

Table 1.10: Journey to Work Data

Shenstone	work by train	from stn(km)
Shenstone	5.1-10	1
Sutton Coldfield		
Four Oaks	5.1-10	1
Wylde Green		
Sutton Vesey	5.1-10	1.5
Sutton New Hall		
Erdington	10.1-15	0.5
Stulland Green	1.1-3	1
Kingsbury	1.1-3	3

- 1.4.8 The data above shows the 1991 census journey to work data, the percentage of journeys to work by train is shown, and the approximate distance from the station in kilometres. The largest amount of data is for the Sutton New Hall area, and shows that from Erdington, 0.5 km from the station, between 10.1 and 15% of journeys to work are by rail. This reduces to 1.1 to 3 from Kingsbury, approximately 3km from the railway station.

1.5 *Review of Papers*

- 1.5.1 A number of papers have been reviewed in order to substantiate the commonly held perception that the number of rail trips decays as the distance from the station increases. A number of the 1991 journey to work data items above show that this is the case in some

of the areas above, notably the North Kent area and the Exmouth to Exeter line.

- 1.5.2 A commonly held assumption is that a cut off of 800 metres around a rail station is generally used to evaluate a walk catchment area, for a new rail station.
- 1.5.3 The book, 'planning passenger railways' by E.Goodwood and N.Harris uses the example of a study completed in 1987 by J.M. Preston. The evaluation of New Local Rail stations in West Yorkshire'. Market research was carried out at 6 stations opened in the mid 1980's in West Yorkshire, these were, Bramley, Crossflats, Deighton, Fitzwilliam, Saltaire and Slaithwaite. The market research when evaluated revealed that at these six stations 800m would account for 62% of users and 2km would account for 25%, these are considered to be important markers in determining the potential usage of a rail station.

1.6 ***Subsidy Payments***

- 1.6.1 The table above shows the payments for each of the current franchises in the areas containing the corridors being evaluated. Those figures with a negative value indicate payments due from the franchise holder to OPRAF, and the positive figures indicate payments from OPRAF to the franchise holder.
- 1.6.2 Over the course of the current franchises, all subsidies from OPRAF are on a gradually reducing scale year on year. CrossCountry begins payments to OPRAF in 1998/99, Connex South Eastern begins repayments 2010. For the other franchises the lack of figures indicates that the end of the franchise period has been reached and that payments beyond that period have not been decided.
- 1.6.3 Figures for individual routes have not been obtained, however the general figures indicate that the subsidy profiles are reducing rapidly. This will mean that rather than remaining at a static service level, operators will to some extent be forced to seek new ways of increasing their revenue base, to counter the year on year reduction of subsidy.