Proposed New Passenger Station at Glyne Gap, Bexhill

Demand Forecasting Report

March 2013

Rother District Council

East Sussex County Council

LandSecurities

Mott MacDonald

Proposed New Passenger Station at Glyne Gap, Bexhill

Demand Forecasting Report

March 2013

Rother District Council

Town Hall, Bexhill-on-Sea, TN39 3JX

Mott MacDonald, Spring Bank House, 33 Stamford Street, Altrincham, WA14 1ES United Kingdom
t +44 (0)161 926 4000 f +44 (0)161 926 4100, W www.mottmac.com

Issue and revision record

Revision	Date	Originator	Checker	Approver	Description
A	January 2013	JPT	RJF	FS	Draft technical note summarising demand forecasting calculations
B	March 2013	JPT	RJF	FS	Final report, incorporating client comments

Mott MacDonald, Spring Bank House, 33 Stamford Street, Altrincham, WA14 1ES United Kingdom
t +44 (0)161 926 4000 f +44 (0)161 926 4100, W www.mottmac.com

Content

Executive Summary

This report presents demand forecasts for the proposed new station at Glyne Gap, building upon a refinement and updating of the previous work undertaken in 2000, 2002 and 2004.

In order to forecast demand a number of calculations have been undertaken. This has looked at comparator stations, similar to that proposed at Glyne Gap, to produce an isochrone based trip rate. Comparator stations were Collington, Cooden Beach, Pevensey and Westham, Glynde, and West St Leonards. All these stations were considered to be of a similar nature to that proposed at Glyne Gap; Bexhill was dismissed as a comparator as it is an established Town Centre station acting as a hub for the local area.

The trip rate calculation has looked at demand within distance bands from the comparator stations to produce an average trip rate per 1,000 head of population. This trip rate has then been applied to the population around Glyne Gap.

Consideration has also been given to demand at Glyne Gap from local attractors. This includes demand from Bexhill College, and demand from the adjacent Ravenside Retail Park. Information from Bexhill College regarding student catchment areas and current travel patterns have allowed to calculate new demand at Glyne Gap and existing demand at Bexhill which will switch to using (or abstract to) Glyne Gap.

Demand from Ravenside Retail Park has been estimated with reference to similar retail park sites throughout the country contained in the TRICS database. This provides data on numbers of trips and also modal split. A LOGIT model was then used to estimate the numbers of public transport users choosing rail over bus.

In addition to new demand, an assessment of abstraction has also been undertaken. This has looked at the number of people currently using Bexhill station and estimates the numbers who are likely to switch to using the new station at Glyne Gap.

The tables below present a summary of the base year demand forecast at Glyne Gap; the first table presents gross demand figures – demand new to rail at Glyne Gap – whilst the second table presents net demand figures – demand new to rail at Glyne Gap in addition to that which is abstracted from Bexhill.

Demand at Glyne Gap, excluding abstraction assessment

	Daily	Annual
Walk-up boarders (local demand)	63	19,600
Drive-up boarders (local demand)	34	10,800
Other boarders	1	500
Ravenside Retail Park boarders	47	14,600
Bexhill College boarders	2	600
New to rail boarders	**147**	**46,000**

Demand at Glyne Gap, including abstraction assessment

	Daily	Annual
Walk-up boarders (local demand)	118	36,900
Drive-up boarders (local demand)	48	14,900
Other boarders	1	500
Ravenside Retail Park boarders	47	14,600
Bexhill College boarders	15	4,700
Boarders at Glyne Gap	**229**	**71,600**

This indicates that nearly 36% of demand at Glyne Gap is predicted to be existing journeys which are abstracted from Bexhill.

Consideration has also been given to the impacts of new developments in the local area, particularly housing and employment developments to the north and east of Bexhill. Using trip rates and modal split information (again from the TRICS database) we have estimated that 5,400 additional boarders per year could be generated by housing developments and 7,200 additional boarders per year could be generated by employment developments.

Revenue forecasts were also developed based on the 46,000 boarders per year forecast – not taking account of demand which is abstracted from Bexhill. This is based on revenue yields for Bexhill and suggests that £1,430 per day or £446,160 per year could be generated at Glyne Gap. We have also investigated the impacts on through rail travellers, as a result of increased travel times due to stopping at Glyne Gap. This suggests that demand will reduce by 112 daily trips, with revenue reduced by £221 per day. This gives a net increase in revenue of £1,209 per day following the opening of Glyne Gap.

A brief comparison has been undertaken with the forecast demand and revenue with figures produced for the previous three studies. The new forecasts show lower demand than the previous studies, although higher revenue is now predicted. This is likely to impact on the business case, and we would therefore suggest that the business case for the scheme is updated in order to fully understand these changes.

1. Introduction

The study into the proposed new railway station at Glyne Gap has been commissioned by Rother District Council (RDC), East Sussex County Council (ESCC) and Land Securities Group PLC (Land Securities) in order to build on earlier studies which suggested, at an outline level, that there might be a case for the provision of a station at this site. In particular, the purpose is to inform RDC's and ESCC's transport and land-use planning processes as to the desirability of a planning strategy including the provision of a new station.

This report addresses the demand forecasts for the station, building upon a refinement and updating of the previous work undertaken in 2000, 2002 and 2004 by SDG and Mott MacDonald. It has assessed the market for new rail journeys, as well as the level of extracted trips from the existing Bexhill station so as to provide a total number of new railway passengers.

The results from this report will feed into the Economic Business Case for Glyne Gap station, which will draw together the results of the previous Infrastructure and Operational Assessment reports.

The rest of this report adopts the following format:

- Chapter 2: an assessment of the base year (2011/12) demand for rail passenger usage at Glyne Gap, covering all potential markets, and setting out both the gross and net (of extraction) passenger demand;
- Chapter 3: estimation of the future development impacts upon rail;
- Chapter 4: revenue forecasts;
- Chapter 5: comparison with previous study results; and
- Chapter 6: conclusions and recommendations.

.

2. Base Demand

2.1 Introduction

A new station at Glyne Gap would serve a number of potential markets:

- Locally generated demand to/from the station;
- Attracted demand to and from Ravenside Retail Park;
- Attracted demand to and from Bexhill College; and
- Attracted demand to and from other significant local developments.

In addition to the demand sources shown above, Glyne Gap could also abstract demand from adjacent stations (primarily Bexhill) where the station catchments clearly overlap, so an assessment of this demand has also been undertaken and reported in this chapter.

The methodology and derivation of each of these forecasts as derived for the base year of 2011/12 are presented below.

Units of demand

In order to avoid confusion, throughout this report the term 'boarder' has been used to identify a single passenger boarding at Glyne Gap. We have avoided the terms 'journey' and 'trip' which can lead to confusion as to whether they relate to one-way or two-way journeys. Where the term 'trip-rate' is used this refers to a single passenger boarding. Note that all annual boarding figures have been rounded to the nearest hundred, which may result in some rounding errors.

2.2 Locally Generated Demand at Glyne Gap

Demand was calculated with reference to trip-rates at a series of existing 'comparator' stations. This used population estimates within set walking times of stations and compared them to demand which was calculated from MOIRA *rail ticketing data) and National Rail Travel Survey (NRTS) data. Walking times were estimated using the local walking networks and an assumed walking speed of 4.8 kph (3mph) as taken from the Department for Transport's Transport Statistics note and guidance on accessibility[1].

The following stations were taken as comparators for Glyne Gap, based upon the need to pick similar stations in terms of catchment (with the exception of the impact of the Ravenside Retail Park) and the level of rail service provided:

- Collington;
- Cooden Beach;
- Pevensey & Westham;
- Glynde; and
- West St Leonards.

[1] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/66797/accessibility-statistics-travel-time-calculation-methodology.pdf Accessed 23 January 2013

Population estimates were prepared for each of the comparator stations, disaggregated into isochrones (time bands) based on walking times of, but applied across all modes of access:

- 0-5 minutes;
- 5-10 minutes; and
- 10-20 minutes.

An uplift factor was also applied to identify demand outside of these isochrones, based upon the analysis of the compactor stations, thereby covering the beyond 20 minutes drive-up demand.

MOIRA data was used to identify the level of demand at each of the stations. National Rail Travel Survey (NRTS) data was then used to identify trip length to assign total demand at the station to the isochrones. This data was based upon the 2005/6 surveys and provides details of true passenger origin and destination as well as mode of access/egress and stations used. Using this information an average trip-rate per 1,000 head of population for each isochrone was then calculated based on the comparator stations, which was then applied to the population isochrones for Glyne Gap.

Bexhill was also initially considered as a potential comparator station; it was subsequently removed as a comparator as it has a much larger population catchment than the other comparator stations, a much better frequency of service and is an established town centre station. It was therefore not considered to be a similar type of station to that proposed at Glyne Gap.

For each comparator station we adjusted MOIRA demand data to reflect the fact that several of the comparator stations have a higher service level than the one train per hour assumed at Glyne Gap. This was done using standard rail-industry methods as described in the Passenger Demand Forecasting Handbook (PDFH), applying demand elasticities to generalised journey times. This then produced trip-rates per 1,000 population based on a standard one train per hour service for each of the comparator stations.

As already noted in the “Glyne Gap Technical Note – Stage 3b: Operational Assessment” dated November 2012, the service provision possible would be at best an hourly service in each direction, but with westbound services running to/from Brighton except in the morning peak when they could run to London, whereas in the eastbound direction the service could originate from London all day. This imbalance of service by direction would be sub-optimal in terms of demand, with forced interchanges. Our demand estimates have been based upon an hourly service which is in effect balanced by direction. However, given that the morning peak period service at Glyne Gap would permit direct travel to London, and that the strongest attractors in the area are Eastbourne and Hastings it was felt that the service imbalance would have only marginal demand impacts which have not been estimated at the present stage.

The calculated walk-up demand at Glyne Gap is summarised below. We used an annualisation factor of 312 to factor-up from daily to annual demand, which was derived based upon the weightings of each day per year. Weekdays are weighted as one, Saturdays as two-thirds of a weekday and Sundays as a half of a weekday. The six Bank Holidays when train services run are weighted as a third of a weekday and the two days per year when no services run are removed completely. Based on the number of days per year and the weightings (261 weekdays, 52 weekends, 6 Bank Holidays with train services) gives an annualisation factor of 312.

Table 2.1: Locally Generated Demand at Glyne Gap, excluding abstraction assessment

GLYNE GAP	0-5 mins	5-10 mins	10-20 mins	*Over 20 mins*
Population	59	718	2,651	
Trip-rate / '000 population	257	66	9	13%*
Derived boarders	15	48	24	12
Total Daily boarders	**99**			
Total Annual boarders	**30,800**			

***Note:** an additional 13% of demand was identified as originating from beyond the 20 minute threshold from the comparator stations, and this has been applied as an uplift to the total demand from the other three time bands

In order to identify the likely access mode to Glyne Gap, we calculated the access modal split at the comparator stations from the NRTS data. This gives the following breakdown. Note that 'other' trips include the number of people cycling to the station.

Table 2.2: Locally Generated Demand at Glyne Gap split by access mode, excluding abstraction assessment

Access Mode	Walk	Drive	Other	TOTAL
Modal split	63.57%	34.96%	1.47%	**100%**
Total Daily boarders	**63**	**34**	**1**	**99**
Total Annual boarders	**19,600**	**10,700**	**500**	**30,800**

2.3 Ravenside Retail Park

The trip-rate-based calculations produced above covers the standard spread of generators and attractors of journeys, as found across the mix of comparator stations chosen. However, to this we added an uplift to reflect the immediate proximity of the Ravenside Retail Park to the proposed station. This was calculated by reference to data in the TRICS database for trip rates for public transport at retail parks at comparator locations which have a rail station, the trip rates giving journeys for a given floor area.

The site comparators chosen were:

- CF-01-J-01 Michaelston-super-Ely, Cardiff (Edge of Town)
- DC-01-J-02 Weymouth, Dorset (Edge of Town Centre)
- LC-01-J-02 Chorley, Lancashire (Suburban Area)
- LN-01-J-02 Grantham, Lincolnshire (Edge of Town Centre)
- TV-01-J-01 Darlington, Tees Valley (Suburban Area)

All of these sites are located within walking distance of a railway station and are representative of the 'Retail Park with food' land use. Although these sites are diverse in terms of location and the Gross Floor Area is relatively small, they are considered to be of a similar nature to Ravenside Retail Park in that the sites are mixed retail use and are located in towns that are relatively free-standing rather than in larger urban areas or conurbations; they do not include any examples from London or large conurbations, which would be expected to behave differently from the Bexhill area in terms of transport modal choices. They were also limited to those sites which have a multi-modal survey in order to show the proportion of public transport trips.

Note that within the TRICS database there are no good comparator examples which are close to the Bexhill areas which also satisfied the criteria of having recent multi-modal survey data and having characteristics broadly similar to Ravenside in terms of location vis-à-vis the local population centres, as well as having a nearby railway station and having a similar mix of facilities. We consider it more important that the comparators chosen should have similar characteristics rather than necessarily being close to Bexhill.

A brief comparison with larger retail park sites in TRICS showed that the trip rates implied for Ravenside were representative and believable – once, of course, the numbers were scaled up to reflect Ravenside's Gross Floor Area.

The percentages of public transport journeys at the sites within TRICS are from all journeys to/from the retail parks. It includes both customers and employees and covers trips from all origins. To split the public transport journeys predicted on this basis between bus and rail, we analysed the public transport offer from the areas which we assumed to make up Ravenside's main catchment. For this purpose, we assumed the main catchment area for Ravenside to stretch from around Cooden Beach in the west to Ore in the east, and split the assumed public transport journeys between the areas within this catchment according to approximate estimates of population and proximity to the site.

We then compared the Generalised Journey Times (GJTs) of bus and train to Glyne Gap from each of these areas, and produced a simple model to split each area's share of the total of public transport journeys on this basis between bus and rail, such that the lower the GJT by bus, the higher its proportion of that share. The distribution model used was a "logit model" using calibrations from the PDFH. For example, from many areas the slightly slower in-vehicle time of bus as against rail would be outweighed by the more frequent bus services to give bus a lower assumed GJT than rail, so from those areas bus was assumed to have the higher share of public transport.

The calculated rail demand attracted to Ravenside Retail Park based on this methodology is shown below. It should be noted that the majority of demand is likely to be to/from the eastbound direction around St Leonards, Hastings and Ore. This is based on the results of the LOGIT model which was developed to distribute the public transport trips to the retail park, in itself a function of the population location and travel costs by mode.

Table 2.3: Calculated rail demand attracted to Ravenside Retail Park, excluding abstraction assessment

RAVENSIDE RETAIL PARK	Saturday	Weekday	Annual
Total boarders at Glyne Gap	**58**	**47**	**14,600**

The TRICS dataset is based on survey data for Saturdays. Clearly retail and leisure parks are likely to be at their busiest at weekends, and in particularly Saturday given the longer opening hours than on Sunday. To obtain annual (and therefore average daily) predicted demand figures for Glyne Gap station for Ravenside journeys, we first applied a factor of 0.806 to factor down Saturday demand to that of a weekday, based on trip rate data for both weekdays and weekends derived from analysis of TRICS for similar retail parks. The average weekday demand has then been annualised using the factor of 312.

The weekend to weekday factor has used survey data from TRICS for both weekdays and weekends for a similar mixed retail park. This has compared the total trip rates to the site on a Friday and Saturday allowing us to develop a factor to 'ramp-down' the weekend demand to that of a weekday.

We assumed (for revenue calculation) that the average length of a rail trip to Ravenside is 2.81 miles, being derived from the average distance to Glyne Gap from the stations assumed to generate rail journeys

to Ravenside. This average was weighted by the assumed distribution of rail journeys to the site, having regard to population and the likelihood of rail being chosen.

2.4 Bexhill College

This section describes how rail demand at Bexhill College was estimated; it includes both new demand using Glyne Gap, and existing demand using Bexhill which may be abstracted and use Glyne Gap in the future.

Data from Bexhill College was provided which showed the catchment areas for both students and staff for the 2012/13 year. The TRICS database also provides survey data for Bexhill College (collected in 2011 and assumed still to be sufficiently accurate) on the modes of transport chosen for staff and students at present (i.e. without Glyne Gap). This included journeys by rail as well as across all modes of travel.

The data shows that 67 college journeys per day were made by rail in 2011. The TRICS data shows a total of 1,867 journeys per day across all modes (including walking) in 2011, which compares with a total staff plus students roll of 1,897 for the 2012/13 year from the college's data. Assuming this small difference is a slight increase in the roll, we took this as implying 68 rail trips per day to the college at the present day.

We used the data from the college to derive assumptions as to the average length of rail journeys to the college. The assumed average journey length was just under 16 minutes (journey on the train, not including the walking element of the journey); this was derived from catchment information for staff and students provided by the college and weighted for the journeys most likely to be made by rail (and the strengths of these flows).

Rail demand to the college could well increase with the opening of Glyne Gap station; this would be due to a shorter walking time between the college and the proposed railway station as compared to the walking time to Bexhill railway station. We calculated an average Generalised Journey Time (GJT), including average rail journey time, service interval penalties and a walking time between college and railway station which is weighted twice that of the rail journey. GJT figures were calculated for the route via Bexhill station and the route via Glyne Gap. In addition, we took account of the fact that a rail journey from the east will be 3 minutes shorter to Glyne Gap than to Bexhill, and longer for journeys from the west. To these figures were applied an elasticity of rail demand to GJT changes (using standard PDFH values) to estimate the uplift in demand due to the improved rail accessibility to the college. This process also included an allowance for the fact that Glyne Gap would only have an approximate hourly service compared to 2-3 trains per hour at Bexhill.

For the appraisal of Glyne Gap station the net number of rail journeys related to the college was required. This net number was obtained from the above calculation less the number currently travelling by train, i.e. subtracting the existing 68 journeys. The remainder were assumed to either keep using Bexhill, or be abstracted to Glyne Gap – a similar technique to the above was also used to estimate how many of the existing Bexhill College rail passengers would switch to Glyne Gap. Note that this does not take account of any subjective, qualitative differences between the routes from Bexhill College to Bexhill station and that to Glyne Gap.

Based upon the above process, the calculated rail demand attracted to Bexhill College and using a new Glyne Gap station is shown below. Demand forecast to continuing to use Bexhill station is included for completeness.

Table 2.4: Calculated rail demand attracted to Bexhill College, including abstraction assessment

BEXHILL COLLEGE	School Weekday	Annual	Averaged Weekday
New to rail	3	600	2
Abstracted from Bexhill	21	4,100	13
Total boarders at Glyne Gap	**24**	**4,700**	**15**
Continuing to use Bexhill	47	9,200	29

For college journeys we applied an annualisation factor of 195, reflecting the fact that there will be far less travel at weekends and out of term time – this annualisation factor therefore growths from a daily to a yearly figure taking account of term time schooldays only. The above figures in the table show demand for the school weekday, together with the annual figure and an 'averaged weekday' calculated using the standard annualisation factor of 312; this is to provide a common figure to enable easy comparison with the other trip-rate components.

2.5 Other Attractors

We considered other potential rail trip generators and attractors in the Glyne Gap station area, such as other local schools and the Country Park, but from our knowledge of the drivers of rail demand, and based upon evidence in the TRICS database, have taken the decision that they would provide very little additional demand likely to use rail.

2.6 Abstraction

In addition to new passengers at Glyne Gap, it is likely that passengers would switch from existing railway stations and begin to use Glyne Gap. The latter group are described as abstracted demand, and it is important to undertaken further calculations on the demand forecasts so as not to double count demand assumed in the revenue and business cases analysis. We dealt with abstraction as set out below.

Table 2.5: How abstraction has been accounted for in the demand forecasts

Locally Generated Demand (section 2.2)	**Requires additional calculations to account for abstraction.** Abstraction limited to eastbound trips from Bexhill, Marshlink destinations not included.
Retail Park Demand (section 2.3)	**No demand assumed to be abstracted; no additional calculations required** Ravenside cannot presently be sensibly reached by train.
Bexhill College Demand (section 2.4)	**Abstraction already dealt with as part of college demand forecast**

Abstraction was only considered with respect to existing rail demand at Bexhill station, and four different categories of abstraction were considered, being:

i. Demand currently walking to Bexhill which could switch to walking to Glyne Gap;
ii. Demand currently walking to Bexhill which could switch to driving to Glyne Gap;
iii. Demand currently driving to Bexhill which could switch to walking to Glyne Gap; and
iv. Demand currently driving to Bexhill which could switch to driving to Glyne Gap.

Given that the second scenario is considered highly unlikely to occur (moving from a walk to a high frequency station to that of driving to a much lower frequency station), abstraction figures were only calculated for the remaining three categories.

We also looked at the likelihood of abstraction from West St Leonards and St Leonards Warrior Square. Both stations were discounted from the analysis due to serving different markets to that offered by the proposed station at Glyne Gap – they both serve the Hastings-Tonbridge line, whilst St Leonards Warrior Square is also served by the Marshlink services which provide semi-fast services towards Brighton. Semi-fast services from Warrior Square are likely to be more attractive than stopping services from Glyne Gap, further reinforcing the view that there is likely to be little or no abstraction from St Leonards Warrior Square. Other stations, such as Hastings and Ore, were considered to be too distant from Glyne Gap for any abstraction to occur.

Abstraction was estimated on the basis of examining where the Bexhill and Glyne Gap station catchments overlap. Two calculations were undertaken; one considering the Glyne Gap catchment compared to the Bexhill walk-up catchment (producing the calculation for item i above), and one considering the Glyne Gap catchment compared to the Bexhill drive-up catchment (producing the calculations for items iii and iv above).

The first step was to calculate the number of boardings predicted at Glyne Gap from the overlap areas. These were then subtracted from the overall trip rate from Glyne Gap. This process assumed that there would be no new trips from the overlap area, so in effect preventing double counting of trips; it also assumed that the only change to forecast demand from the overlap area would be the choice of station between Bexhill and Glyne Gap. Subtracted trips were then assumed to be either walk-up or drive-up, based on the mode split calculated for the Glyne Gap trip rates.

The proportion of journeys to Bexhill assumed to come from the area concerned were allocated to either Bexhill or Glyne Gap on the basis of a generalised cost model (again a logit model calibrated using PDFH parameters). This took into account station access time, train headways, journey times and costs for typical eastbound and westbound journeys. Destinations east of Ore were not considered as Marshlink services were assumed not to call at Glyne Gap.

The calculation produced the number of boarders at Glyne Gap which were subtracted from the catchment overlaps, and the number of boarders currently using Bexhill which were predicted to switch to using Glyne Gap in the future. Such trips were not counted as “new-to-rail” travel. The figures are shown below.

Table 2.6: Locally Generated Demand abstracted from Bexhill to Glyne Gap (not considering demand from Bexhill College or Ravenside Retail Park)

	Daily	Annual
Walk-up boarders subtracted from Glyne Gap	-8	-2,300
Drive-up boarders subtracted from Glyne Gap	-4	-1,300
Walk to Bexhill abstracted to walk to Glyne Gap	56	17,400
Drive to Bexhill abstracted to walk to Glyne Gap	8	2,400
Drive to Bexhill abstracted to drive to Glyne Gap	17	5,400
Net impact of abstraction	**69**	**21,600**

Summary

For ease of reference, the above calculations are summarised in the tables below. These firstly show the new to rail demand at Glyne Gap, followed by the calculated demand once abstraction is also considered. Note that all annual figures have been rounded to the nearest hundred.

Table 2.7: Demand at Glyne Gap, excluding abstraction assessment

	Daily	Annual
Walk-up boarders (local demand)	63	19,600
Drive-up boarders (local demand)	34	10,800
Other boarders	1	500
Ravenside Retail Park boarders	47	14,600
Bexhill College boarders	2	600
New to rail boarders	**147**	**46,000**

Table 2.8: Demand at Glyne Gap, including abstraction assessment

	Daily	Annual
Walk-up boarders (local demand)	118	36,900
Drive-up boarders (local demand)	48	14,900
Other boarders	1	500
Ravenside Retail Park boarders	47	14,600
Bexhill College boarders	15	4,700
Boarders at Glyne Gap	**229**	**71,600**

As an example, in order to calculate demand including abstraction for walk-up boarders:

- 63 walk-up boarders from trip rate model (from Table 2.7);
- 8 boarders from the Glyne Gap/Bexhill overlap are subtracted (from Table 2.6);
- 56 boarders who walked to Bexhill now walking to Glyne Gap are added (from Table 2.6); and
- 8 boarders who drove to Bexhill now walking to Glyne Gap are added (from Table 2.6).

This sums to 118 walk-up boarders at Glyne Gap when abstraction is accounted for, when rounding errors are accounted for.

Note that the daily demand figures for Bexhill College are the 'average weekday' figures; all daily figures have been multiplied by the 312 annualisation factor to calculate annual demand. It should also be noted that the majority of demand at Bexhill College is predicted to be abstracted from Bexhill.

These results show that over 35% of demand at Glyne Gap is forecast to be abstracted from adjacent stations. This is because a large proportion of the likely catchment area of Glyne Gap overlaps with the existing catchments of adjacent stations – especially the catchment area for Bexhill. It should be noted that only 147 daily boarders are predicted to be new to rail.

In terms of modal split on the access leg to the station, nearly 21% of journeys are predicted to be by motorised vehicle – this includes parking at the station (park-and-ride) or being dropped off at the station ('kiss-and-ride').

2.7 Increments to Base Demand

We have analysed the impact of two increments from the Base demand scenario, being:
- The introduction of a smart ticketing system; and
- Improvements or reduction in station quality (relative to station facilities).

Each has been considered below.

Integrated 'Smart' Ticketing

We have applied an uplift factor to take account of the introduction of smartcard ticketing. This used a methodology described in the Passenger Demand Forecasting Council (PDFC) report "*Oyster PAYG: The impacts on National Rail"* dated January 2012. This used adjustments to GJT to estimate the impacts on demand. In this case we used GJT split by eastbound and westbound destinations, assuming similar GJTs as at Bexhill, with an adjustment of 3 minutes to account for the running times between the stations. In this case GJT includes station-to-station running times and service interval penalties. East / west demand at Glyne Gap was split according to the calculated average split at the comparator stations of Collington, Cooden Beach, Glynde, Pevensey and Westham and West St Leonards.

Station Quality

In accordance with PDFH guidelines, we assessed the demand impacts of providing a low quality, average quality and high quality station at Glyne Gap, defined based upon the level of station facilities set out in the Glyne Gap Infrastructure Report. We assumed that the 'average' station forecasts are those presented above; two scenarios (both with and without station quality upgrades) have been developed.

We applied PDFH adjustments for the following factors to take account of the various facility levels at a low quality and a high quality station:
- Passenger information;
- Waiting facilities;
- Security; and
- CCTV.

We assumed that an average station would be secure and have CCTV provided. Therefore we did not apply uplifts for security and CCTV for the high quality station option.

Results

The application of these improvements results in provided a range of demand forecasts as shown below. It should be noted that the 'average quality station' represents the base scenario, with the low and high quality forecasts representing an increment around that base – for example without smartcard ticketing the low quality station would have 215 daily boardings (229 minus 14), compared to 229 daily boardings for an average quality station.

Table 2.9: Demand forecast ranges based on station quality, without smartcard ticketing

Boardings at Glyne Gap	Daily	Annual
Low Quality Station	-14	-4,700
Average Quality Station	229	71,600
High Quality Station	+2	+500

Table 2.10: Demand forecast ranges based on station quality, with smartcard ticketing

Boardings at Glyne Gap	Daily	Annual
Low Quality Station	-15	-4,800
Average Quality Station	236	73,700
High Quality Station	+2	+500

3. Future Development Impacts

3.1 Introduction

The forecasts in Chapter 2 all related to the base year of today, 2011/2, without any new housing or employment. However, to assist in assessing the demand at Glyne Gap we present in this chapter the impact:

- Planned population growth; and
- Planned employment increases.

These forecasts are based upon information supplied by Rother District Council relating to developments in the North-East Bexhill and Bulverhythe areas.

The impact of the committed Bexhill-Hastings Link Road will be taken into account in the future year demand projections for the business case, likely to improve Glyne Gap station accessibility.

3.2 Population Growth

Population growth was assumed to include all proposed residential developments around Glyne Gap. It was assumed that there was an average occupancy per dwelling of 2.9 people. We then assigned developments into one of the three catchment bands for Glyne Gap based on the isochrones. Using the derived local trip-rates for comparator stations we then calculated the additional number of trips forecast from these developments, together with a percentage uplift to account for trips outside of the 20 minute band. These assumptions and calculations are shown below. It should be noted that in accordance with the uplift in housing development targets outlined by ESCC following the Inquiry into the Local Core Strategy in January 2013 these figures have been growthed by 16%[2].

Table 3.1: Additional demand due to population growth around Glyne Gap

	Houses	16% Uplift	New Population	Walking Catchments (minutes)				
				0-5	5-10	10-20	>20	TOTALS
North East Bexhill	2,150	2,494	7,233	0%	0%	5%		
Bulverhythe	700	812	2,355	0%	5%	20%		
			Additional Populations	0	118	833		
			Additional Daily Boarders	0	8	8	2	**18**
			Additional Annual Boarders	0	2,400	2,400	600	**5,400**

[2] http://www.rother.gov.uk/media/pdf/l/d/130107_-_6.2_-_Local_Core_Plan_Strategy_-_Soundness_Issues_-_with_appendices.pdf Accessed 18 January 2013, states a 16% increase in housing numbers compared to the published Core Strategy

The calculation shows that the new housing developments would result in an additional 18 boarders at Glyne Gap per day, or an additional 5,400 boarders per year. Note that future developments would be phased over time – the above calculations show the total new demand once all committed developments have been realised.

3.3 Employment Growth

Additional employment growth in the North East Bexhill / Bulverhythe area has been estimated using figures from the TRICS database. This has looked at typical trip rates for both office and industrial unit type land uses, and has developed an estimate of likely numbers of employees based on the Gross Floor Area likely to be developed in the area.

For this purpose we have assumed that the development split will be 50% each of office and industrial unit. We have further refined the site list in TRICS to those greater than 1km from a railway station, outside of a Town Centre and excluding sites in London, Ireland and Scotland to develop a suitable trip rate by rail. The resulting figures are shown below.

Table 3.2: Additional demand due to employment growth around Glyne Gap

	Office	Industrial Unit	Total
Assumed development split	50%	50%	**100%**
Resulting GFA sqm per land use	24,000	24,000	**48,000**
Employees per GFA (from TRICS)	0.076	0.043	
Derived Employees	1,821	1,032	**2,853**
Rail Trip Rate per Employee	0.025	0	
Derived Two-way Rail Journeys	46	0	**46**
Additional Daily Boarders	23	0	**23**
Additional Annual Boarders	7,200	0	**7,200**

It should be noted that for office type land use trip rates from TRICS were presented as totals by public transport. In order to develop a trip rate for rail journeys we have assumed a similar mode split between rail and bus as developed for Ravenside Retail Park – this assumes that 19% of all public transport trips to and from the new employment sites would be via rail at Glyne Gap. This figure is an output of the simple logit model used to distribute public transport trips from Ravenside Retail Park.

For the industrial unit land use, public transport trip rates were presented as disaggregated by both bus/tram and train. This shows a zero trip rate via rail from the comparator sites.

The calculation shows that the new employment developments would result in an additional 23 boarders at Glyne Gap per day, or an additional 7,200 boarders per year.

4. Revenue Forecasts

4.1 Introduction

This section of the report summarises the methodology used to calculate revenue from Glyne Gap station.

4.2 Methodology

The revenue calculation for Glyne Gap was undertaken using journeys split between London and non-London destinations. Journey splits were based on those observed at Collington which has a similar level of train service as envisaged for Glyne Gap, whilst revenues were based on those recorded at Bexhill (as Bexhill and Glyne Gap would be priced either the same or very similar in level).

The resulting forecasts are shown below.

Table 4.1: Generated revenue at Glyne Gap in the base year (2011/12), excluding abstracted demand

	London	Non-London
Journey split, based on Collington MOIRA data	39.5%	60.5%
Demand split for **NEW** boarders at Glyne Gap	58	89
Demand doubled to account for return journeys	116	178
Revenue per journey, based on Bexhill MOIRA data	£9.24	£2.01
Revenue from Glyne Gap	£1,072	£358
Total Revenue from Glyne Gap	£1,430 per day	
	£446,160 per year	

Note that the revenue impacts on abstracted demand have not been assessed here. There are also revenue impacts of reduced demand through the Glyne Gap station site. By calling trains at Glyne Gap we also increase the travel time for through journeys between Bexhill and St Leonards Warrior Square. This reduces the attractiveness of the journey and will result in reduced demand for journeys through Glyne Gap. This is assessed using the MOIRA program which produces forecast changes in demand and revenue. We have assumed an additional two minutes journey time between Bexhill and St Leonards Warrior Square. This results in the following changes (note that demand represents individual trips).

Table 4.2: Impacts of adding the call at Glyne Gap station on through passengers

	Demand	Revenue
Daily change, as a result of calling at Glyne Gap	-112	-£220
Annualisation Factor	312	312
Annual change, as a result of calling at Glyne Gap	-34,900	-£69,000

Glyne Gap station will add 147 new to rail boarders per day to the network, which is doubled to give 294 daily trips to/from Glyne Gap. The dis-benefits to through journeys as a result of additional journey times by stopping trains at Glyne Gap will reduce demand by 112 daily trips – this is equivalent to around 38% of new to rail demand generated by Glyne Gap.

The impacts on revenue are less severe, in part due to the increased travel times disproportionately impacting on shorter journeys with low revenue generation. Increased travel times would reduce revenue by £220 per day, or around 15% of the revenue generated by Glyne Gap. The impacts on revenue are summarised below.

Table 4.3: Overall revenue impacts of Glyne Gap

	Daily	Annual
Revenue from Glyne Gap	£1,430	£446,160
Impacts of increased travel time for through passengers	- £220	-£69,000
Overall Revenue Impacts	**£1,210**	**£377,160**

5. Comparison with Previous Studies

5.1 Introduction

This section of the report highlights and explains the differences in base year forecasts. This compares the demand forecasts from previous studies with the new forecasts which have been developed here. The previous studies referred to here are:

- New Stations in the Hastings Area – Final Report (SDG, May 2000);
- New Passenger Station at Glyne Gap, Bexhill-on-Sea – Stage 1 Report (Mott MacDonald, June 2002); and
- New Passenger Station at Glyne Gap, Bexhill-on-Sea – Stage 1 Update Report (Mott MacDonald, May 2004)

5.2 Demand Comparisons

Demand forecasts from the various scenarios and studies are summarised below. These show daily demand forecasts, abstraction forecasts and the implied additional annual rail boardings from Glyne Gap.

Table 5.1: Demand comparisons with previous studies

	Net Daily Boardings (New to rail without abstraction)	*Implied abstracted boardings*	Gross Daily Boardings (including abstraction)*
SDG (2000) – 4tph 'with Metro'+	304	*80*	384
Mott MacDonald (2002) – 4tph 'with Metro'+	306	*80*	386
Mott MacDonald (2004) – 4tph 'with Metro'+	348	*80*	428
Mott MacDonald (2002) – 2tph 'without Metro'+	242	*80*	322
Mott MacDonald (2004) – 2tph 'without Metro'+	259	*62*	321
Mott MacDonald (2013) – 1tph	188*	*82*	270*
+ Note: demand reduced by half, as forecasts were originally presented as two-way trips.			
* Note: includes 41 boarders from new developments around Glyne Gap to enable a fair comparison			

In order to more easily compare the demand forecasts, we have factored demand from the previous studies to a 2011/12 base year. This allows us to compare demand with the new forecasts on a like for like basis. Factors are based on data from ORR station footfall for the comparator stations as already outline in Section 2.2 of this report. The resulting demand is compared below.

Table 5.2: Demand comparisons with previous studies, rebased to 2011/12

	Daily Boardings (New to rail without abstraction)	*Implied abstracted boardings*	Daily Boardings (including abstraction)
SDG (2000) – 4tph 'with Metro'+	410	*119*	529
Mott MacDonald (2002) – 4tph 'with Metro'+	414	*114*	529
Mott MacDonald (2004) – 4tph 'with Metro'+	415	*102*	518
Mott MacDonald (2002) – 2tph 'without Metro'+	329	*114*	444
Mott MacDonald (2004) – 2tph 'without Metro'+	309	*79*	388
Mott MacDonald (2013) – 1tph	188*	*82*	270*
+ Note: demand reduced by half, as forecasts were originally presented as two-way trips.			
* Note: includes 41 boarders from new developments around Glyne Gap to enable a fair comparison			

It can be seen that the predicted daily boarding figures (without abstraction) at Glyne Gap are much lower than those figures produced by previous forecasts. Various reasons for the differences in forecast demand are discussed below.

Locally Derived Demand

A comparison of generated trip forecasts across all four studies is shown below.

Table 5.3: Demand comparisons – locally derived demand, excluding abstraction rebased to 2011/12

	Walk-up Boarders	Drive-up Boarders	Other Boarders	TOTAL	Park and Ride Boarders
SDG (2000) – 4tph 'with Metro'+	-	-	-	297	30
Mott MacDonald (2002) – 4tph 'with Metro'+	-	-	-	280	29
Mott MacDonald (2004) – 4tph 'with Metro'+	-	-	-	220	49
Mott MacDonald (2002) – 2tph 'without Metro'+	-	-	-	195	29
Mott MacDonald (2004) – 2tph 'without Metro'+	-	-	-	159	37
Mott MacDonald (2013) – 1tph	63	34	1	98	*
+ Note: demand reduced by half, as forecasts were originally presented as two-way trips.					
* Note: demand accounted for as part of drive-up boarders					

The previous studies have used a 'locally derived trip rate'; this used data from surveys in January 2000 at Bexhill, West St Leonards, St Leonards Warrior Square and Hastings. No differentiation between walk-up and drive-up trips was undertaken.

For the most recent demand forecasts an isochrone based trip rate for Glyne Gap has been derived with reference to adjacent local stations. This has used NRTS and MOIRA data (from 2012) to derive trip-rates for comparator stations based on overall demand, population levels and station access modes. These trip-rates have then been amended to take account of service headway – producing trip rates for each station based on demand figures amended to a common base of only one train per hour.

The difference in forecasts for 'locally derived demand' is in part due to the comparator stations which have been used. In the light of the results of the operational assessment, which suggests that only one train per hour would be able to call at Glyne Gap, we have revised the selection of comparator stations. The new trip rate has looked at local stations with a similar service pattern, including Collington, Cooden Beach, Pevensey and Westham, Glynde and West St Leonards. We have taken the decision to remove town centre stations from the comparators, whereas the original forecasts looked at Bexhill and Hastings.

We briefly considered Bexhill station as part of the comparator stations when developing a trip rate for Glyne Gap. A comparison between the trip rate calculated for Glyne Gap and that calculated for Bexhill are shown below.

Table 5.4: Trip rates at comparator stations and Bexhill

Trip-rate / '000 population	0-5 mins	5-10 mins	10-20 mins	Over 20 mins
Trip rate used for Glyne Gap (2013)	257	66	9	13%*
Bexhill	148	96	113	7%*

***Note:** an additional percentage of demand was identified as originating from beyond the 20 minute threshold from the stations, and this is applied as an uplift to the total demand from the other three time bands

The figures show that Bexhill has a much wider catchment area, being an established Town Centre station with three trains per hour. The trip decay shows that approximately 30% of trips at Bexhill are in the 10-20 minute walk band; this is compared to just over 2% for the smaller comparator stations. Because Bexhill is a large Town Centre station it draws in more trips from the local area, effectively operating as the hub station for the local area. This is in contrast to the comparator stations, where the majority of trips are from areas much closer to the station site.

It should also be noted that the trip-rates in the updated analysis have been derived from demand figures for 2012 from MOIRA. Demand has significantly increased over recent years, as shown below in the station footfall figures published by the Office of Rail Regulation (ORR).

Table 5.5: Station footfall figures, 2002-03 and 2010-11 (comparator stations are highlighted)

Station Name	Boarders 2002-03+	Boarders 2010-11+	Change
Bexhill	1,379	2,295	66.4%
Collington	132	242	82.9%
Cooden Beach	152	183	19.9%
Glynde	62	107	73.4%
Hastings	2,279	3,098	35.9%
Pevensey & Westham	188	243	29.3%
Polegate	1,160	1,407	21.3%
St.Leonards Warrior Square	769	1,088	41.5%
West St Leonards	119	125	4.6%
All Comparator Stations	653	900	37.8%

+Note: Calculated by halving the sum of boarders and alighters from ORR data then dividing by an annualisation factors of 312 to calculate daily boarders.

Figures for the comparator stations which were used to calculate the Glyne Gap trip rate have been highlighted. Total demand at the five comparator stations has increased by 37.8% between 2002/3 and 2011/12.

As part of previous studies, park and ride demand had been estimated separately. In the 2000 study a figure of 5% of through trips on the A259 has been used as a source for park and ride trips. This used traffic counts through Glyne Gap on the A259, assuming that 50% of this traffic was in-scope as park and ride trips. This methodology was carried through into the 2002 and 2004 studies as well.

For the most recent demand forecasts, park and ride trips are included as part of the drive-up trip rates for Glyne Gap. This has used NRTS and MOIRA data to derive an isochrone based trip-rate for comparator stations based on demand, population levels and station access modes. It should be noted that previous forecasts for park and ride demand closely correspond to forecasts for drive-up demand at Glyne Gap.

Ravenside Retail Park

All studies have made an estimate of demand to and from the adjacent Ravenside Retail Park. The comparison is shown below.

Table 5.6: Demand comparisons – Ravenside Retail Park, rebased to 2011/12

	Retail Park Boarders
SDG (2000) – 4tph 'with Metro'+	83
Mott MacDonald (2002) – 4tph 'with Metro'+	106
Mott MacDonald (2004) – 4tph 'with Metro'+	88
Mott MacDonald (2002) – 2tph 'without Metro'+	106
Mott MacDonald (2004) – 2tph 'without Metro'+	67
Mott MacDonald (2013) – 1tph	47
+Note: demand reduced by half, as forecasts were originally presented as two-way trips. 2002 and 2004 figures are based on 1tph	

This indicates that the new forecasts for retail park demand are much reduced compared to previous studies. This is mainly due to a change in methodology.

The 2000 study by SDG used traffic counts obtained from ESCC to and from the Ravenside site to estimate likely rail mode share. This first identified those trips within scope (those turning onto the A259), reduced by 50% as an estimate of those journeys for which rail is a feasible alternative mode. A car occupancy rate of 1.25 was then assumed by SDG, before suggesting from a previous study that 6% of these journeys would definitely transfer to rail, with a further 11% probably transferring to rail. The latter figure has been reduced by 50% to reflect uncertainty. A final rail mode share of 2% was estimated.

The 2002 and 2004 forecasts used a similar method to the above, but applied background traffic growth factors and higher vehicle occupancy rate and rail modal shares. TRICS has been used to support the higher vehicle occupancy and modal shares; these are based on a range of free-standing sites, rather than mixed-use developments. The developments are mainly in London and larger towns which is likely to enhance public transport modal shares.

The 2013 forecasts were based on data within TRICS at sites close to railway stations and near to the edge of free-standing smaller towns. These are all mixed-use retail developments and show lower public transport modal shares. The resulting calculations result in lower rail demand from Ravenside Retail Park.

Bexhill College

Due to relocation of the college, both the 2004 and 2013 studies have considered the likely impact on demand at Bexhill College of a new station at Glyne Gap. The forecasts are summarised below.

Table 5.7: Demand comparisons – Bexhill College, rebased to 2011/12

	New to rail boardings at Glyne Gap	Abstracted boardings from Bexhill
Not considered prior to 2004	-	-
Mott MacDonald (2004) – 4tph 'with Metro'+	60	-
Mott MacDonald (2004) – 2tph 'without Metro'+	45	-
Mott MacDonald (2013) – 1tph	13	2
+Note: demand reduced by half, as forecasts were originally presented as two-way trips. Comparisons are based on 1tph		
*Note: demand is an average day rather than school day, for a school day 3 new boardings are predicted with 21 abstractions.		

It should be noted that the 2004 forecasts were undertaken prior to the relocation of the college to its current site. It therefore used a simple percentage of students and staff who were assumed to transfer to using rail, irrespective of the origin of the journey.

The current forecasts make use of data from Bexhill College, including journey origin, and data from the TRICS database, including total journeys and modal split. This has allowed a more accurate forecast of demand to/from the college to be made, based on generalised journey times and a logit model for station choice between Glyne Gap and Bexhill.

The updated forecasts produce a more accurate result, having been based on data relating to journeys to and from the college site following relocation, rather than been based on demand forecasts prior to relocation. The 2012 forecasts have considered new demand at Glyne Gap as well as abstraction of existing demand from Bexhill.

Abstraction

All four forecasts have estimated the potential level of abstracted demand. The results are summarised below.

Table 5.8: Demand comparisons – abstraction, rebased to 2011/12

	Trips Removed	Bexhill walk to Glyne Gap walk	Bexhill drive to Glyne Gap walk	Bexhill drive to Glyne Gap drive	TOTAL ABSTRACTED BOARDERS
SDG (2000) – 4tph 'with Metro'+	-	-	-	-	**119**
Mott MacDonald (2002) – 4tph 'with Metro'+	-	-	-	-	**114**
Mott MacDonald (2004) – 4tph 'with Metro'+	-	-	-	-	**102**
Mott MacDonald (2002) – 2tph 'without Metro'+	-	-	-	-	**114**
Mott MacDonald (2004) – 2tph 'without Metro'+	-	-	-	-	**79**
Mott MacDonald (2013) – 1tph	-12	56	8	17	**69**

+ Note: demand reduced by half, as forecasts were originally presented as two-way trips.

All studies considered abstraction from Bexhill to Glyne Gap. The new forecasts are lower than those produced for previous studies. Previous studies have used a 'pro-rata' basis to estimate abstraction from Bexhill. The updated forecasts have used calculated trip rates for both Bexhill and Glyne Gap, assigning those trips within the catchment overlaps to stations based on a simple station choice logit model.

The reduced service headway at Glyne Gap in the most recent forecasts makes the station less attractive as compared to Bexhill. This results in fewer passengers choosing to transfer from Bexhill to Glyne Gap.

Frequency of train service impacts

The most noticeable difference between the 2000, 2002 and 2004 studies is that of a very much lower service frequency than previously envisaged. The impact of such a reduction may be assessed via application of PDFH elasticities to Generalised Journey Time, and these have shown an approximate 22% reduction in demand resulting when moving from a four trains per hour service to only hourly (based on GJT adjustments for Polegate as an example) and an approximate reduction in demand of 17% when moving from a two trains per hour service to only hourly (based on GJT adjustments for Collington as an example).

However, at a frequency of four trains per hour as envisaged under the Metro concept the service operates at a walk on level of demand with "turn-up and go" usage. This is a very different proposition to that of an hourly train service, and as such the reduction in demand as a result of providing an hourly service compared to four trains per hour at Glyne Gap would be far greater than 22%. There is little firm guidance in PDFH over such a matter, but it would be expected that the impact of the frequency reduction would be far greater than 22% in moving from four trains per hour to only one train per hour.

5.3 Revenue Comparison

A comparison of the revenue forecasts was undertaken, and the results are shown below. Prices used in the analysis have been rebased to 2012 prices, based on changes in ticket prices of Retail Price Indices (RPI) minus 1% prior to 2004, and RPI plus 1% since 2004. Note that the figures do not take account of

abstracted trips – it is revenue generated by new to rail demand, and does not consider any revenue reduction as a result of demand lost due to longer journey times as a result of stopping trains additionally at Glyne Gap.

Table 5.9: Revenue comparisons with previous studies rebased to 2011/12 demand and 2012 prices, rounded

	Daily Revenue	Annual Revenue
SDG (2000) – 4tph 'with Metro'+	£1,710	£427,200
Mott MacDonald (2002) – 4tph 'with Metro'+	£1,640	£409,250
Mott MacDonald (2004) – 4tph 'with Metro'+	£1,660	£519,830
Mott MacDonald (2002) – 2tph 'without Metro'+	£1,150	£286,570
Mott MacDonald (2004) – 2tph 'without Metro'+	£1,240	£386,960
Mott MacDonald (2013) – 1tph	£1,430	£446,160

This shows that the revenue forecasts are higher than the previous studies for the two trains per hour scenario, but lower than for the four trains per hour scenario. This is based on a number of factors.

Previous forecasts have used a simple revenue per journey figure for all journeys. The new forecasts have split demand into London and non-London destinations, in order to estimate revenue to London which has much greater revenue per journey compared to other destinations. It should also be noted that different annualisation factors have been used in the different forecasts to factor from daily to annual revenue levels.

6. Conclusions and Recommendations

This report presents the methodology and results of the demand forecasting which has been undertaken for the proposed Glyne Gap station, between Bexhill and West St Leonards. A comparison with previous demand forecasts for the station has been undertaken and reasons for the differences in demand forecasts have been presented.

The demand forecasts for Glyne Gap are summarised below.

Table 6.1: Gross demand at Glyne Gap, including abstractions

	Daily	Annual
Walk-up boarders	118	36,900
Drive-up boarders	48	14,900
Other boarders	1	500
Ravenside Retail Park boardings	47	14,600
Bexhill College boardings	15	4,700
Boardings at Glyne Gap	**229**	**71,600**
Demand from proposed new developments	41	12,600

This suggests that the forecast demand at Glyne Gap will be roughly similar to that recorded at both Cooden Beach and Collington in 2010/11.

The demand impacts on through travellers have also been assessed. This has used the MOIRA program to show the impacts of adding two minutes journey time between Bexhill and St Leonards Warrior Square on those services calling at Bexhill. This suggests that 112 journeys per day (or 34,900 journeys per year) would be lost as a result of calling trains at Glyne Gap.

Revenue forecasts have also been produced. These are summarised below.

Table 6.2: Generated revenue at Glyne Gap, base year

	Daily	Annual
Revenue from Glyne Gap	£1,430	£446,160
Impacts of increased travel time for through passengers	- £220	-£69,000
Overall Revenue Impacts	**£1,210**	**£377,160**

Revenues have been compared to those produced by the previous forecasts. This shows that forecast revenues have increased compared to previous studies, based on 2 trains per hour at the station, but decreased compared to the scenario with 4 trains per hour calling at Glyne Gap This is mainly as a result of splitting revenue between London and non-London destinations in the new forecasts.

Given the lower forecast demand for the station at Glyne Gap, the business case for the scheme is likely to be affected; however, this is more than offset by the increased revenue which is calculated by the new forecasts. We would therefore suggest that the next step would be to update the business case for the scheme in order to investigate the combination of these impacts.