

## 12 TRAFFIC AND TRANSPORTATION

1. The construction and operational phases of the proposed development and its associated infrastructure may lead to impacts on existing road users, pedestrians, cyclists and other sensitive receptors. This section discusses the assessment of such impacts and identifies the measures that HPUK are taking to mitigate impacts, where appropriate (see also the Transport Assessment (TA)).

2. Where applicable, reference has been made in the assessment to guidance published by the former Institute of Environmental Assessment (IEA) (now the Institute of Environmental Management and Assessment (IEMA)) and the Institution of Highways and Transportation (IHT). The assessment draws substantially on the TA which was undertaken by ERM in conjunction with HSL in accordance with the requirements of PPG13: Transport (issued in March 2001) and Circular 04/2001 (DTLR, 2001).

3. An assessment of the risks potentially associated with the transport of dangerous goods is provided in Appendix 5.

### 12.1 EXISTING ENVIRONMENT

#### 12.1.1 Existing transport conditions

1. The Port of Felixstowe is the largest container port in the UK and is a vital gateway for trade and travel. The port has good road and rail links to London, the Midlands and the rest of the UK. These links are discussed in Sections 12.1.2 to 12.1.4, below.

#### 12.1.2 The local road network

##### *Overview*

1. The main road that would be potentially affected by any increase in vehicle movements associated with the proposed reconfiguration is the A14, along which container vehicles travel to gain access to other areas within the UK (see Figure 1.6.5). The A14 forms part of the national trunk road network, and joins with the A12, also a trunk road, at two locations to the south east and south west of Ipswich.

2. Access to the Landguard Terminal is gained via the Dock Gate 1 roundabout (junction of the A14 with the A154 Walton Avenue). The A14(T) performs an important national function in connecting the town and port of Felixstowe to the national road network, and for the movement of freight between the port and the rest of the country.

3. The Highways Agency has undertaken a Route Management Strategy for the A14, which was issued in February 2001. Such strategies aim to provide a framework for managing individual trunk roads as part of wider transport networks. Priority actions as part of the strategy include improving signs and lay-bys and reviewing the provision of safety barriers. Investigation by the Highways Agency into safety at the Dock Spur roundabout (junction of the A14 with the A154 Candlet Road) is ongoing, supported by HPUK.

#### *Baseline traffic data*

4. Traffic surveys were conducted between 0630 and 0930 and between 1600 and 1930, to cover the AM and PM peak hours, on the stated dates at the following locations:

- A14(T) / A154 Walton Avenue roundabout (4 March 2003);
- A14(T) / A154 Candlet Road roundabout (4 March 2003);
- A14 (T) / Kirton Road intersection (14 May 2003);
- A14(T) / A12 / A1156 intersection to the east of Ipswich (4 March 2003); and
- A14(T) / A12(T) / A1214 Copdock intersection to the south of Ipswich (14 May 2003).

5. These junctions were identified for modelling in consultation with the Highways Agency and Suffolk County Council. Turning movements were recorded continuously for the above mentioned times with vehicles broken down into classifications. In addition, automatic traffic counters (ATCs) were positioned at various locations on the A14(T) to provide continuous 7-day hourly traffic flows and speeds.

6. The raw data have been analysed to determine peak hour flows in total vehicles and HGVs. The data are provided in the TA. Traffic survey data have also been obtained from the Highways Agency's permanent survey site at Trimley Heath on the A14(T). These data were used to assess seasonal variation in flows on the A14(T). The finding was that August is the busiest month.

7. The base flows in vehicles per hour have been converted into passenger car units (pcus) per hour (where 1 HGV = 2 pcus, in agreement with the Highways Agency and Suffolk County Council) for use in the ARCADY and PICADY junction modelling programs.

#### *Proposed road improvements*

8. The Highways Agency is preparing additional measures to reduce vehicle speeds at this junction, currently expected to include reinforcement of the yellow bar markings, the introduction of speed-actuated warning sights on the A14(W) approach and the removal of the left-turn filter lane from the A14(S) to A14(W).

#### *Accident data*

9. The TA presents summaries of personal injury accident records for the 5-year period from 1 July 1998 to 30 June 2003 for the following locations:

- The A14(T) / A154 Walton Avenue roundabout, one of two first points of access from the development to the trunk road;
- A14(T) Port of Felixstowe Road, the merge and diverge facilities of which are the other 'first point of access' from the development to the trunk road; and,
- The A14(T)/A154 Candlet Road roundabout.

10. At the A14(T)/A154 Walton Avenue roundabout, four slight accidents and one serious accident occurred during the 5 year period. There are no common factors between the accidents. Road safety at this location gives rise to no cause for concern.

11. At the merge and diverge facilities at the A14(T)/A154 Trinity Avenue junction, three personal-injury accidents occurred during the 5 year period. None involved HGVs. Road safety at this location gives rise to no cause for concern.

12. At the A14(T)/A154 Candlet Road roundabout, 19 personal injury accidents (including 1 fatality) occurred during the 5-year study period. Of these 11 involved HGVs overturning, 1 involved a collision between a jack-knifing HGV and a car, and seven involved cars only. The HGV overturning incidents occurred at the rate of two per year (other than in 2001, when three occurred) throughout the period.

13. An assessment has been undertaken of the expected accident frequency at this junction using the method set out in the *Design Manual for Roads and Bridges* (DMRB) Volume 13 Section 1 Part 2 Chapter 5. The method considers the form of the junction and the traffic flows at the junction and uses a predictive model based on studies of actual accident rates at comparable sites. The assessment is presented in the TA. Traffic flows surveyed in 2003 are used in the model. The finding is compared with the observed accident frequency as follows:

- Number of accidents observed in five years: 19
- Number of accidents predicted for a five-year period: 8

14. The accident rate at this junction is, therefore, more than twice as high than the rate predicted by the DMRB accident prediction model; and the Highway's Agency current programme of improvement measures reflect this.

15. To date, the following measures have been adopted at the roundabout and its approaches:

- Yellow bar markings on approaching carriageways; and,
- Warning signs and advisory speed limit at the roundabout.

16. In addition, the Highways Agency is preparing further measures to reduce vehicle speeds at this junction, currently expected to include reinforcement of the yellow bar markings, the introduction of speed-actuated warning signs on the A14(W) approach and the removal of the left-turn filter lane from the A14(S) to A14(W).

#### *Sensitive receptors*

17. Receptors in the vicinity of the road network serving the Port of Felixstowe are varied. Residential areas lie alongside both the A154 and parts of the A14(T). Along the A14(T) between Nacton and Felixstowe, there are close to 2,000 residential properties within 300m of the road. Peewit Caravan Park is located near to Dock Gate 1 roundabout, and commercial and industrial properties can be found alongside the A154 and A14(T). Dock Gate 2 is remote from residential areas.

### 12.1.3 Rail freight

1. The Port of Felixstowe currently operates two rail freight terminals, one at Trinity (North Terminal) and the other at Landguard (South Terminal). The combined capacity of both terminals is 550,000 TEUs a year; with 21 incoming and 20 outgoing trains operating daily, linking with Glasgow, Manchester, Liverpool, Leeds, Cleveland, Birmingham, Cardiff and other smaller locations.

### 12.1.4 Public transport

#### *Passenger rail services*

1. The rail network serves the Port of Felixstowe via a branch line from Ipswich and Westerfield. The line provides hourly passenger services and links in to the Great Eastern Mainline (GEML).

#### *Bus routes and frequencies*

2. There is a bus service connecting the Port with Felixstowe town, the Trimleys, Ipswich and beyond. The bus stops within the Port and at stops close to the Port, with safe walkways from these points into the Port.

### 12.1.5 Cyclists and pedestrian access

1. Access to the Port of Felixstowe for cyclists and pedestrians is currently poor in relation to the highways network. The Suffolk Coastal & Heaths Path, a public footpath, runs along the bank of the River Orwell and provides access to the port area generally. The path also forms part of the Sustrans cycle network.

## 12.2 POTENTIAL IMPACTS DURING THE CONSTRUCTION PHASE

### 12.2.1 Method of assessment

1. The impacts of traffic generated during construction and operation of the Felixstowe South Reconfiguration have been based on traffic flows predicted to occur as a result of the development, as described in the TA. The maxima are based upon the likely throughputs at the Port of Felixstowe described in Section 2 above.

2. The assessment of construction impacts was undertaken for the peak of construction activity, which is expected to be during Phase 2 of the construction programme. In determining the significance of potential construction traffic impacts, particular weight has been attached to the duration of impact.

3. The operational impacts of the scheme on the highway network are modelled in the TA for 2023 (i.e. 15 years after opening). Impacts on the rail network have been examined for a series of years between full scheme opening (2008) and a future year at which demand is likely to reach its peak (taken, for the purposes of assessment, to be 2023).

4. Overall, the method involved the following:
  - Describing the existing transport network (both road and rail), existing traffic flows and the receptors that are potentially sensitive to traffic and transport impacts;
  - Identifying baseline conditions;
  - Predicting the traffic impacts that are likely to arise during construction and operation of the development using appropriate guidance and methodologies; and,
  - Identifying measures to mitigate the predicted impacts.
  
5. For the purposes of this ES, it is assumed that changes in traffic flow of less than 30% are unlikely to have significant impacts on pedestrian and cyclist movements (Crompton, 1981). As part of the TA, however, detailed work has been undertaken with respect to pedestrians and cyclists, including a sustainability audit and the development of a Travel Plan for the scheme.
  
6. Guidance issued by the former IEA (1993) asserts that only relatively large changes in traffic are likely to result in environmental impacts. The guidance states that, where receptors exist, environmental effects are unlikely to occur unless:
  - Generated traffic increases baseline flows on highway links by more than 30% (or 10% where receptors are particularly sensitive); or
  - Site-related HGV traffic increases on highway links by more than 30% over baseline levels (or 10% where receptors are particularly sensitive).
  
7. There is the potential for traffic-related air quality impacts where traffic or HGV flows increase baseline hourly flows on highway links by over 30%. Similarly, there is a potential for traffic noise impacts where traffic or HGV flows increase daily flows on highway links by over 30%. Where any of these situations occur, the guidelines note that more detailed assessment should be undertaken to establish the extent of any impact. Such detailed work has been undertaken for the proposed development in any case and the results are reported elsewhere in this ES (at Sections 13 and 15).

#### **12.2.2 Potential for increased traffic levels on the road network: generated traffic**

##### *HGVs*

1. It is estimated that there would be a maximum of just over 20,000 HGVs generated during Phase 1 of construction. Some of these movements may be capable of being made by sea, but this ES assumes the worst case where all movements are by road.
  
2. The main construction access is expected to be via Dock Gate 1 at the junction of the A14(T) with the A154 Walton Avenue. This is the existing entrance to Landguard Terminal and would be the principal access to the completed scheme. Some construction vehicles associated with the NNRT may use Dock Gate 2.

3. The majority of construction HGVs would, therefore, access the site via an existing junction on the A14(T). A requirement will be included in the construction contracts, in the form of a Traffic Management Plan, that all main construction traffic access to and from the site must be via this route(s).

4. During peak construction, up to 290 HGVs a day would be generated (for a three-month period), rising to a peak of 540 for a single week. At all other times the levels of HGV traffic would be lower than this, often considerably so (see Figure 12.2.1).

5. The 290 peak daily HGV movements generated over that three month period are largely due to deliveries of paving blocks.

#### *Staff travel*

6. Up to a total of 225 staff, including an estimated 35 supervisors, would be employed on-site during peak construction periods. Throughout the remainder of the construction period there would be less than this number on site.

7. It is expected that managerial staff would travel by car to and from the site each day. HPUK intends to promote the use of minibuses for a proportion of workers. For the purposes of assessment, three scenarios have been considered (including a worst case) for travel by the workforce. For each scenario, all supervisors travelling by private car at an occupancy of 1.3 per car gives rise to 27 cars in and 27 cars out. The scenarios are as follows:

- Scenario A – all workers travel by car at 1.3 occupancy. 190 workers travelling by car at an occupancy of 1.3 gives rise to 146 cars in and 146 cars out, in addition to the 27 supervisor car movements.
- Scenario B – supervisors and 50% of the remaining staff travel by car, with the remainder travelling by 15-seater minibus. 50% of 190 workers travelling by car gives rise to 73 cars in/out. 50% of workers travelling by minibus gives rise to a further seven movements in and eight movements out, in addition to the 27 supervisor car movements.
- Scenario C – supervisors travel by car with all remaining staff travelling by minibus. If 100% of non-supervisory staff travel by minibus, there would be 13 movements in and out, in addition to the 27 supervisor car movements.

8. This shows that during peak construction, if all construction staff travel to and from the site by private car, there would be a maximum of 173 car movements inbound between 06:00 and 07:00, with a corresponding number outbound between 19:00 and 20:00. If 50% of non-supervisory staff travel by minibus, the total number of one-way movements would reduce to 107; with full take up, there would only be 40 movements.

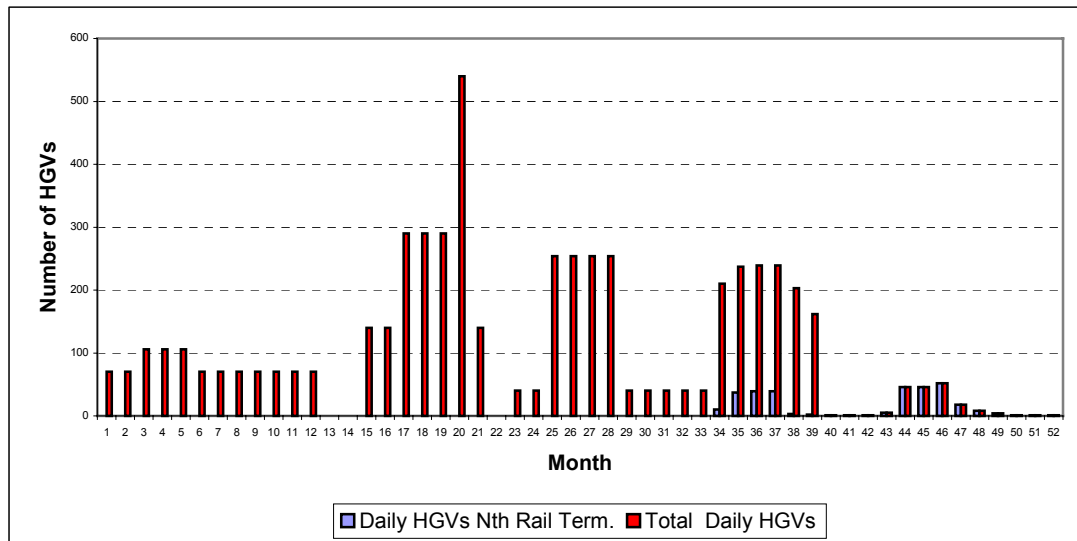
9. It should be noted that these movements are all expected to take place outside the normal morning and evening peak hours.

10. Non-car modes of travel for workers will be encouraged as part of the construction Traffic Management Plan to be developed between HPUK and Suffolk County Council.

### Combined flows

11. Combining peak HGV flows with peak construction personnel flows gives a worst case total traffic flow, as set out in Table 12.2.1.

12. As can be seen from Figure 12.2.1, apart from a one-week period peak daily HGV flows are up to 290 movements. Based on these figures, the resultant daily flows during peak construction activity are as shown in Table 12.2.1.



**Figure 12.2.1 Total daily HGV movements during the construction phase**

**Table 12.2.1 Combined construction HGV and personnel traffic**

Time (weekday)	Movement	Scenario A	Scenario B	Scenario C
0600-0700	Construction workers (inbound)	173	107	40
0700-0800	Minibuses outbound and HGVs (two-way flow)	24	31	37
0800-1800	HGVs (two-way flow)	24	24	24
1800-1900	HGVs and minibuses inbound (two-way flow)	24	31	37
1900-2000	Construction workers (outbound)	173	107	40

13. It can be seen that, as a worst case, there will be 173 car movements, outside of the peaks, at the beginning and end of each weekday (with some of the leavers likely to be staggered), with some 24 HGV movements per hour in between these times. The numbers of HGV movements will be lower than this for the majority of the construction period, often considerably so. With mitigation, the staff movements in and out could reduce to 40 vehicles.

14. Abnormal load deliveries are expected to be extremely infrequent and would not number more than one in any day. Any abnormal loads needed would access the site via the A14(T) which is the prescribed route for such loads.

15. Using the baseline flows given in Section 12.1.2, growthed to 2005, the changes in AM and PM peak hour flows are as given in Table 12.2.2 below.

**Table 12.2.2 Changes in AM and PM peak hour flows from construction traffic**

Road section	Generated traffic (total vehicles)	AM (base flow)	AM (% change)	(base flow)	PM (% change)
A14(T) Port of Felixstowe Road between Trinity Avenue and the Candlet Road Junction	24	1201	2	1702	1
A14(T) Port of Felixstowe Road between the Candlet Road and the Kirton Road Junction	24	1332	2	2837	1
A14(T) Port of Felixstowe Road between the A14(T) / A12 / A1156 junction and the A14 / A1189 junction	24	1801	1	3720	1
A14(T) between the A14(T) / A1189 Junction and the Orwell Bridge	24	2160	1	4187	1
A14(T) between the A14(T) / A137 Junction and the A14(T) / A12 / A1214 Junction	24	1721	1	3933	1

16. Overall, therefore, the additional construction vehicles during the peak construction period will represent an increase of no more than 2% on the A14(T).

17. It is unlikely that this volume of traffic would have a material impact on the trunk road network (increases are less than 5%) for the peak of construction activity. At all other times, construction traffic levels would be lower. In terms of the total number of vehicles, therefore, the overall impact is expected to be minimal and of **negligible significance**.

18. The potential origins/destinations of construction workers' trips and HGV construction traffic is not known at this stage. However, given the relatively small increases in flows and the fact that the site is immediately adjacent to the trunk network, once away from the A14(T), the construction traffic would dissipate very quickly and any impact on the wider network would be minimal; that is, of **negligible significance**.

#### *Mitigation and residual impact*

19. During the assessment process, measures have been identified to mitigate potential impacts associated with construction traffic. Some of these have been built into the programme so that, for example, the movement of major items (such as reclamation materials and tubular piles) would be achieved by sea. Other measures have been identified, and agreed by HPUK (such as staff minibuses), in order to combat any impacts which may be expected to arise (as set out below).

20. It should be noted that impacts from construction traffic are, by their nature, temporary and once a particular phase of construction has been completed any impacts associated with vehicles will disappear.

21. A Traffic Management Plan will be prepared in conjunction with Suffolk County Council, as highway authority, to reduce the impact of construction traffic on the highway network. As part of this work, a number of general traffic mitigation measures will be implemented as a matter of best practice to ameliorate the effects of construction activities, as follows:

- a) Suitable measures will be taken to prevent the deposit of mud and dirt on the public highway (using wheel washers) and to prevent the propagation of dust and fly-away material (through the use of sheeting);
- b) Routes for construction vehicles will be agreed in advance and drivers informed of particular sensitivities - routes where sensitive receptors are close to the road will be avoided wherever possible;
- c) Where practical, construction vehicles associated with the Felixstowe South Reconfiguration will be marked so they are easily recognisable to the local community – an associated ‘hotline’ number will be publicised so the relevant parties can hear any queries or complaints;
- d) If any abnormal loads are required, these will follow prescribed routes on the trunk road network only and be scheduled in advance to minimise possible disruption;
- e) Consideration will be given to the use of minibuses to transport as many site workers as possible, reducing the use of private cars; and
- f) Materials and equipment will be delivered, and waste taken away, by sea or rail as far as is practicable.

22. The residual impact would be of **negligible significance**.

## 12.3 POTENTIAL IMPACTS DURING THE OPERATIONAL PHASE

### 12.3.1 Potential for increased traffic generation on the road network

1. The method of assessment adopted here is set out in Section 12.2.1.

#### *Freight modal split*

1. The market share of rail (once transshipment has been removed) is estimated to be up to 26%, based on modelling by HPUK and in line with Strategic Rail Authority (SRA) expectations. This means that some 74% of containers would travel by road.

2. Based on these figures, the volumes of container traffic estimated to be moved by both road and rail are as given in Table 12.3.1.

**Table 12.3.1 Forecast movements by road and rail (million TEUs)**

Year	Hinterland traffic	Moved by Rail (% share)	
2007	0.276	0.051 (18.5%)	0.227
2008	0.605	0.113 (18.5%)	0.496
2023	1.220	0.317 (26%)	0.899

Source: ERM/Ocean Shipping Consultants

*Generated HGVs*

3. The numbers of HGVs generated by the Felixstowe South Reconfiguration have been estimated based on the following:

- The total number of containers moved annually has been based on total forecast TEU, multiplied by a factor of 0.633;
- Data from 2002 at the Port of Felixstowe have been used to calculate a factor for total HGV movements per container; and,
- HGV movements are assumed to take place for a total of 265 equivalent days a year (250 weekdays plus some additional movement on Saturdays).

4. For each year between predicted opening (in 2007) and 2023 (when demand is expected to nearly match capacity), the forecast number of HGVs generated are as set out in Table 12.3.2.

*Other road traffic*

5. In addition to HGVs carrying containers, further traffic associated with other elements of the development would be generated, including employee traffic.

6. The traffic generation (including HGVs) of the proposed development during the site peak hour (1800 to 1900) as well as during a notional AM peak hour (07:00 to 08:00) in 2023 is given in Table 12.3.2, below.

**Table 12.3.2 Estimated operational traffic generations**

Element		AM peak		PM peak	
		Lights	Heavies	Lights	Heavies
HGVs	Arrivals	0	55	0	97
	Departures	0	48	0	108
Staff travel	Arrivals	155	0	0	0
	Departures	0	0	155	0
Total 2-way vehicles		155	103	155	205

7. A detailed assessment of operational traffic impacts is presented in the TA for the scheme. Six locations on the highway network have been tested, in agreement with the Highways Agency and Suffolk County Council (see Figure 12.3.1). These are as follows:

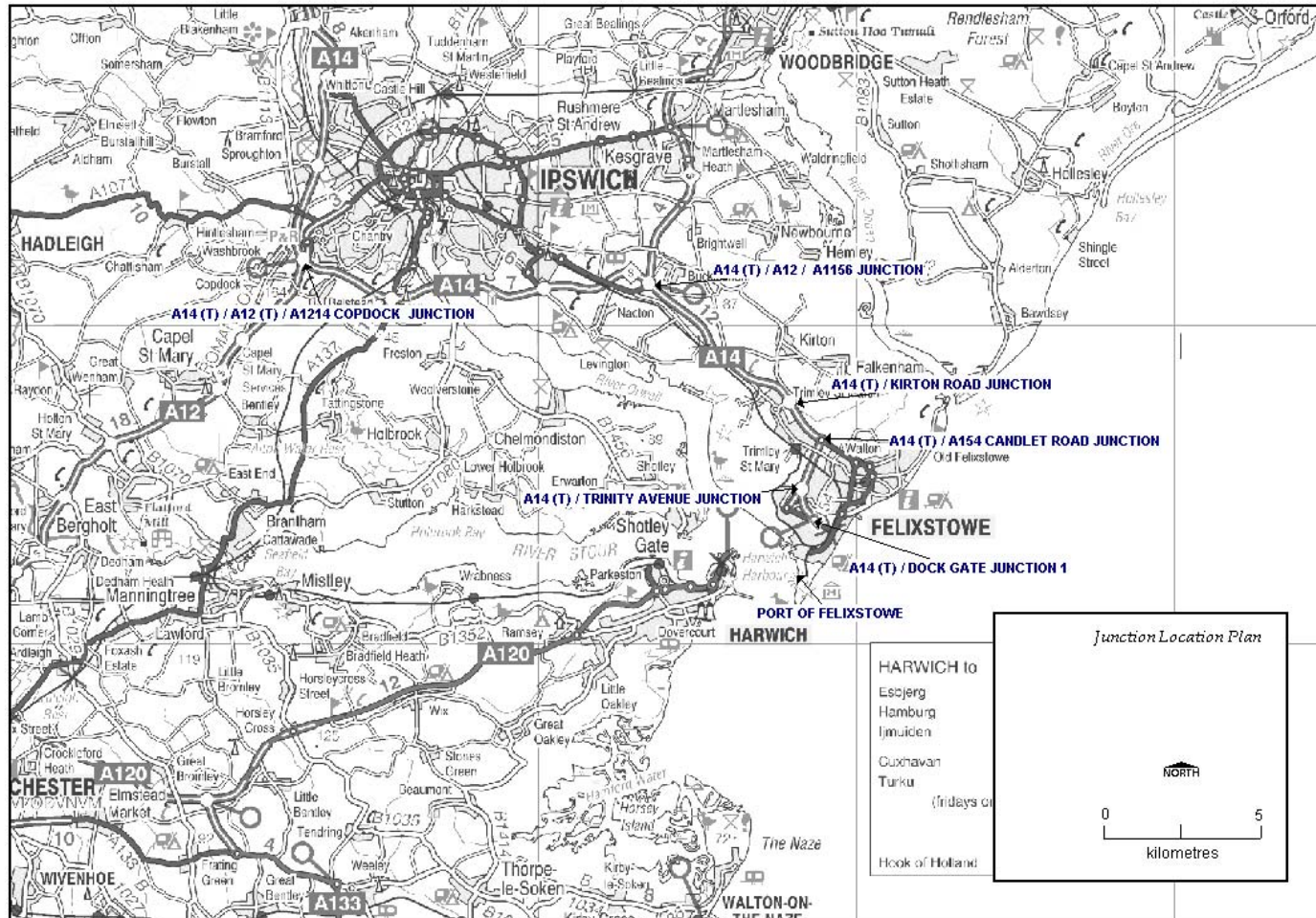


Figure 12.3.1 Locations of the 6 junctions modelled in the assessment

- A14(T) / A154 Walton Avenue roundabout;
- A14(T) / A154 Trinity Avenue merge / diverge facilities;
- A14(T) / A154 Candlet Road junction;
- A14(T) / Kirton Road junction;
- A14(T) / A12 / A1156 junction; and,
- A14(T) / A12(T) / A1214 Copdock junction.

8. As noted, the Highways Agency has requested that the development traffic impacts be assessed at five junctions, as outlined in Section 12.1.2. However, observations have indicated that the scheme would have a traffic impact greater than 5% at the Trinity Avenue/A14(T) junction (due, for example, to HGVs accessing other facilities adjacent to the port). An assessment of this junction has, therefore, additionally been undertaken.

9. A detailed assessment was undertaken to gauge the effects of additional traffic being generated by the scheme at each of the above locations, referred to as ‘junction modelling’. This appraises the ability of existing junctions to accommodate extra traffic, and is undertaken for the period 15 years after scheme opening (defined as 2023, termed ‘the assessment year’). This process is reported in full in the TA for the development. In summary, the maximum estimated increases in traffic during the peak hours at each of the assessment locations in 2023 are as indicated in the table below.

**Table 12.3.3 Estimated increases in peak hour traffic flows in 2023**

Junction	Maximum increase in peak hour traffic flow (%)
A14(T) / A154 Walton Avenue roundabout	14.5
A14(T) / A154 Trinity Avenue merge / diverge facilities	14.5
A14(T) / A154 Candlet Road junction	4.2
A14(T) / Kirton Road junction	3.2
A14(T) / A12 / A1156 junction	2.5
A14(T) / A12(T) / A1214 Copdock junction	3.0

10. The results of the junction modelling can be summarised as follows:

- A14(T) / A154 Walton Avenue roundabout. The proposed development would have a material impact on traffic flows at this junction. However, modelling indicates that no modification of the junction will be required for the 2023 with-development case;
- A14(T) / A154 Trinity Avenue merge / diverge facilities. Assessment indicates that the proposed development will give rise to no cause to change the nature of the merge and diverge facilities;
- A14(T) / A154 Candlet Road junction. This junction would be modified to alleviate the existing accident problems at the junction, improve conditions for vehicles (particularly HGVs) and provide sufficient additional capacity at the junction such that it would operate in the 2023 assessment year without detriment to road users with the proposed development in place;

- A14( T) / Kirton Road junction. The maximum development traffic impact at this junction is estimated to be 3.2% (on the A14(T) mainline at the underpass during the PM peak) which is not considered to be significant. It is estimated that there will be no peak hour impact at the roundabout and that the roundabout will perform satisfactorily;
- A14(T) / A12 / A1156 junction. The maximum development traffic impact at this junction is estimated to be 2.5% (on the A14(T) mainline at the underpass during the PM peak). This increase is not considered to be significant. The maximum increase at the roundabout is estimated to be 0.5%, which is not considered significant. The junction is expected to operate satisfactorily; and
- A14(T) / A12(T) / A1214 Copdock junction. The maximum development traffic impact here is estimated to be 3.0% (on the A14(T) mainline at the underpass during the PM peak) which is not considered to be significant. The maximum impact on the A23 (T) is estimated to be 0.7% (in the PM peak) which is not considered to be significant. The maximum impact on the roundabout is 1.1%, which, again, is not considered to be significant. The junction will perform satisfactorily.

#### *Mitigation and residual impact*

11. The assessment has shown that generated container traffic predicted to be associated with the Felixstowe South Reconfiguration (excluding the share forecast to travel by rail) can be accommodated on the highway network, using the A14(T) and then dispersing onto the wider trunk road network via the A12(T). One junction on the A14(T) would require some modification to enable it to perform satisfactorily. With these measures in place, there would be no detrimental impact on the highway.

12. The measures proposed for the A14(T)/A154 Candlet Road roundabout consist of the following modifications (as described in Annex C of the TA report):

- Vehicles may enter the roundabout at excessive speed from the A14(T) west and the A14(T) south approaches. Modifications to these entries to the roundabout to provide entry path curvature in accordance with the mandatory national design guidance are therefore proposed;
- A 'ghost separation' island is proposed in order to separate traffic travelling from the A14(T) west to the A14(T) south from traffic travelling to the A154 Candlet Road;
- A uniform radius is proposed on the circulatory carriageway, in place of the current irregular radius, near the Candlet Road exist from the junction;
- A left filter between the A14(T) south and the A14(T) west arms of the junctions is proposed to be removed in order to reduce the speed of vehicles making the manoeuvre. Three traffic lanes, separated by ghost islands, are proposed at this entry to the roundabout and all would be subject to the normal roundabout priority rule;
- Improvement of forward visibility to the give way line on the A14(T) south entry to the junction is proposed;
- In order to address poor forward visibility to the give way line on the A154 Candlet Road entry to the junction, additional warning signs are proposed;

- The exits from the roundabout to the A14(T) west and the A14(T) south would be flared, and the exits to the A154 Candlet Road would be modified to provide an appropriate exit radius; and,
- The number of entry lanes on each approach would be increased to 3 (in conjunction with the improved entry path curvature discussed above) in order to provide sufficient capacity for the junction to operate in the with-development assessment case, without detriment to traffic.

13. Measures for a draft Travel Plan have been developed for the scheme, as described in Annex C of the TA report. This will deal with travel associated with the operation of the development. It will be developed over the coming months in conjunction with Suffolk County Council, the Highways Agency and Suffolk Coastal District Council.

14. It is intended that the plan will include the following measures, performance and targets be reviewed on an annual basis:

- An employee bus service;
- A car-sharing scheme;
- Undercover parking for motorcycles; and
- The appointment of a site travel co-ordinator.

15. Traffic generated by the Felixstowe South Reconfiguration would inevitably add to baseline flows on the A14(T). These increases are generally in the order of between 2% and 4% in the peak hour. However, with the mitigation measures described above in place, there would be **no residual impact** on the road network from generated traffic.

16. Additional measures to mitigate any potential impacts on pedestrians and cyclists are not considered to be necessary.

### 12.3.2 Potential for additional freight rail traffic

#### *Generated traffic*

1. Based on the likely modal demand figures described above, maximum<sup>1</sup> annual and daily freight rail journeys have been estimated for the Felixstowe South Reconfiguration for the following years:

- 2007 – first full year of Phase 1;
- 2008 – year full scheme starts; and,
- 2023 – 15 years after full scheme opening.

2. Forecast traffic is based on 250 days a year operation and is given for both 24-wagon (the current maximum length) and 30-wagon (the SRA's aim) trains. These figures are given in Table 12.3.4.

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<sup>1</sup> Taking into account an expected increase in the use of short-sea shipping

**Table 12.3.4 Forecast Felixstowe South Reconfiguration freight rail movements**

Year	TEU (m)	Boxes (m)	30-wagon trains/yr	Trains/ day	Trains/ day (e-w)	24-wagon trains/yr	Trains/day	Trains/ day (e-w)
2007	0.051	0.034	567	3	2	708	3	2
2008	0.113	0.075	1250	5	3	1563	7	4
2023	0.317	0.211	3517	14	7	4396	18	9

**Source: ERM/Ocean Shipping Consultants**

3. In summary, based on current forecasts, by 2009 (following scheme completion) there could be expected to be around three to four trains a day each way generated by the Felixstowe South Reconfiguration. Gauge clearance on the London route out of the Haven ports will have been completed by this time. This would allow for freight growth and for larger containers to be moved between the Felixstowe and the West Coast Main Line (which is already cleared).

4. It is also possible that the F2N gauge clearance will have been completed by this time. It is estimated that this will provide an additional six train paths.

5. By 2023, there will be up to an anticipated total of nine additional trains from Felixstowe, based on a robust assessment. It is expected that a proportion of these additional movements could be accommodated by the present spare capacity in the system.

6. Such a modal distribution of freight would be not only in keeping with PPG13, but also accord with the aims of the Transport White Paper, the 10 Year Transport Plan, Modern Ports: A UK Policy and the SRA's Freight Strategy.

7. The applications for the proposed Felixstowe South Reconfiguration will include a New North Rail Terminal (NNRT). This is expected to be operational in 2008 and will remove any internal constraints to an increase in rail traffic.

8. With respect to the external network, the current gauge clearance works on the London route from Felixstowe to the West Coast Mainline (WCML), which are due for completion in 2004 (and which includes the Felixstowe branch line), will enable greater loading efficiency on trains since capacity on wagons will not be constrained by the use of low loaders. This allows fewer trains than at present for the same volume of goods to be carried and is, therefore, consistent with the eventual 26% rail share forecast by HPUK.

9. In terms of the total number of rail movements, therefore, the overall impact is expected to be minimal and of **negligible significance**.

*Mitigation and residual impact*

10. No mitigation measures are required and the residual impact would be of **negligible significance**.

11. Notwithstanding this, HPUK is currently examining the question of the distribution of containers from the Haven location to the more distant parts of the UK.

