POWERFUEL

Portland energy recovery facility

Environmental statement

11

Traffic and transport

11 Traffic and transport

Introduction

11.1 Awcock Ward Partnership (AWP) was appointed to undertake the traffic and transport assessment. The findings of the assessment are summarised in this chapter and the transport assessment (TA) is included as technical appendix L1. The references and data sources used in the assessment are set out in table 11.1.

Institute of Environmental Assessment, 1993, Guidelines for the Environmental Assessment of Road Traffic
Ministry of Housing, Communities and Local Government, 2014, National Planning Practice Guidance: Travel plans, transport assessments and statements

Table 11.1: References and data sources

Legislation and policy

National policy

11.2 Paragraph 102 of the National Planning Policy Framework (NPPF; 2019) states that transport issues should be considered from the earliest stages of plan-making and development proposals, so that:

- The potential impacts of development on transport networks can be addressed
- Opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised – for example, in relation to the scale, location or density of development that can be accommodated
- Opportunities to promote walking, cycling and public transport use are identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains
- Patterns of movement, streets, parking and other transport considerations are integral to the design of schemes, and contribute to making high quality places

11.3 Paragraph 108 states that, in assessing specific applications for development, it should be ensured that:

- Appropriate opportunities to promote sustainable transport modes can be (or have been) taken up, given the type of development and its location
- Safe and suitable access to the site can be achieved for all users
- Any significant effects from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost-effectively mitigated to an acceptable degree

11.4 Paragraph 109 states that development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.

11.5 Paragraph 5 of the *National Planning Policy for Waste* (2014) states that local planning authorities should take account of the capacity of existing and potential transport infrastructure to support the sustainable movement of waste, and products arising from resource recovery, seeking when practicable and beneficial to use modes other than road transport.

11.6 The Ministry of Housing, Communities and Local Government published National Planning Practice Guidance: *Travel plans, transport assessments and statements* in March 2014, which provides guidance on the preparation of these documents.

Local policy

11.7 The Bournemouth, Poole and Dorset Local Transport Plan 2011-2026 (2011) sets out seven key objectives:

- Reducing the need to travel
- Managing and maintaining the existing network more efficiently
- Active travel and 'greener' travel choices
- Public transport alternatives to the car
- Car parking measures
- Travel safety measures
- Strategic infrastructure improvements

11.8 Policy 12: Transport and access of the adopted Bournemouth, Christchurch, Poole and Dorset Waste Plan (2019) states that proposals for waste management facilities that could have an adverse impact as a result of traffic generation will be permitted where a safe access to the proposed site is provided and the development makes provision for any highway and transport network improvements necessary to mitigate or compensate for any significant adverse effects. Where possible, proposals should have direct access or suitable links with the Dorset Advisory Lorry Route Network. Sustainable transportation should be used where possible, practical and environmentally acceptable.

11.9 The West Dorset, Weymouth & Portland Local Plan (2015) does not contain any policies relating specifically to waste management facilities. However, policy COM7: Creating a safe and efficient transport network states that development should be located where the volume of traffic likely to be generated can be accommodated on the local highway network without exacerbating community severance, and development will not be permitted where the residual cumulative impacts on the efficiency of the transport network are likely to be severe.

11.10 A more detailed review of local and national planning policy is provided in the TA in technical appendix L1.

Methodology

Consultation

11.11 The scopes of this assessment and the TA have been informed by consultation with Dorset Council as the highways authority for public highways within the

study area. In addition, Highways England, which is responsible for the A35 as part of the strategic road network, has also been consulted on the proposals.

Traffic modelling

11.12 Travel restrictions implemented by the government in the week commencing 16 March 2020 in response to the COVID-19 pandemic, and the subsequent increases in working from home and furloughing among the local area's workforce, mean that it has not been possible to collect representative traffic flow data. In order to establish the baseline traffic conditions, therefore, traffic flow data have been obtained from monitoring undertaken by Portland Port, automatic traffic counts undertaken by Dorset Council in November 2019, and surveys carried out by Dorset Council and Highways England in 2017 for the following road links (figure 11.1):

- Castletown (at port access gate) (2019 data)
- A354 Portland Beach Road (2019 data)
- A354 Portland Road (south of Foord's Corner Roundabout) (2017 data)
- A354 Buxton Road (north of Foord's Corner Roundabout) (2019 data)
- A354 Buxton Road (Boot Hill) (2019 data)
- A354 Weymouth Way (2019 data)
- A354 Monkton Hill (Stadium Roundabout) (2017 data)
- B3157 Granby Way (2019 data)
- B3156 Portland Road (2017 data)

11.13 As discussed in chapter 2, the proposed development will be constructed over approximately 24 months, with a further six-month commissioning period, during which time the level of construction traffic will vary. Construction traffic will include the movement of workers and delivery vehicles. The construction assessment has been based on the period of peak HGV activity, which is predicted to be during piling. Full details of the assumptions behind the construction traffic assessment are set out in technical appendix L2.

11.14 Operational HGV-trip generation from the proposed development was estimated based on the worst-case assumption that all RDF will be delivered to the site by road; in reality, a proportion of the RDF is likely to be delivered to the port by ship. A first principles approach was taken to trip generation, based on assumptions about the capacity of the plant and delivery lorries (see assumptions and limitations section below). The delivery route is discussed further in the baseline section.

11.15 Employee trip generation was based on the creation of 35 jobs at the plant on a three-shift pattern. The modal split was based on 2011 Census data for the medium super output area Weymouth and Portland 008. The distribution of the employee trips from both on and off the island was reviewed to model employees travelling to work from both Portland and the surrounding area. However, it should be noted that the workforce will be drawn from Portland itself as far as possible.

11.16 Background traffic growth was calculated using TEMPRO growth factors to model the anticipated opening year of 2023 and a future year of 2033. Traffic flows associated with the committed developments set out in chapter 3 were

also included in the future baseline scenario. Further details of the methodology, which was agreed with Dorset Council, are set out in the TA in technical appendix L1.

Assumptions and limitations

11.17 A number of assumptions were made about the operation of the plant to estimate the operational HGV trip generation. The plant is assumed to operate for c.8,000 hours per year, approximately 11 months, with scheduled periods of shut-down. These periods of non-operational time were not included in the trip generation calculations to provide a robust assessment. The ERF would require an estimated 548 tonnes of RDF a day for continuous operation when processing 22.83 tonnes per hour, although this will vary according to the calorific content of the RDF up to an estimated 606 tonnes per day.

11.18 To ensure a robust worst-case assessment, it was assumed that RDF would arrive loose using a covered walking-floor HGV wagon carrying 24 tonnes per vehicle. It was also assumed that ash produced by the plant (both bottom ash and air pollution control residues) would be removed from site solely by HGV. It is estimated that the plant will produce approximately 121 tonnes of ash per day and HGVs with a 12-tonne loading capacity will be used. In addition, the plant will require materials for its treatment processes, including activated carbon, urea and bicarbonate of soda. It is estimated that approximately five tonnes of chemicals will be required per day.

11.19 As a result, in order to service the plant, 25 deliveries of RDF would need to occur per day, with a further 10 HGVs removing ash and one HGV providing consumables. To provide headroom for scenarios such as more consumables being delivered on a single day, the assessment was based on a worst-case assumption that the proposed development will not generate more than 80 two-way HGV trips per day (40 in each direction).

11.20 It is assumed that all HGVs delivering materials to, and removing ash from, the site will travel using the route set out in the baseline section. This means that 100% of the HGVs (80 trips) will travel along the Weymouth Relief Road and Portland Beach Road. As a one-way system is in operation for HGVs through Weymouth, 50% of the HGVs (40 trips) will travel along Weymouth Way via Chickerell Road and 50% (40 trips) will travel along Weymouth Way via the A354 Buxton Road. It is estimated that 90% of the HGVs (72 trips) will use the A35 eastbound and 10% (eight trips) will use the A35 westbound.

Effects assessed

11.21 The Institute of Environmental Assessment's *Guidelines for the Environmental Assessment of Road Traffic* (IEA; 1993) advise that assessments of traffic-related effects should include impacts on severance, driver delay, fear and intimidation (pedestrian amenity), pedestrian delay, accidents and safety, noise, vibration, visual impact, air pollution, dust and dirt, ecological impact, heritage and conservation areas, and hazardous loads.

11.22 This chapter addresses the first five issues, with the majority of the other issues examined in other chapters of the ES. The low level of traffic generated compared to existing baseline flows and the fact that the HGVs will be covered

means that traffic noise and dust and dirt were scoped out of the EIA. Definitions of each of the potential effects identified in the guidelines are set out below, together with explanatory text relating to the assessment criteria.

11.23 The IEA guidance sets out two broad rules that have been used to determine the scale and extent of the assessment, as follows:

- Rule 1 – include highway links where traffic flows will increase by more than 30% (or the number of HGVs will increase by more than 30%)
- Rule 2 – include any other specifically sensitive areas where traffic flows will increase by 10% or more

11.24 Where the predicted increase in traffic flows is lower than these thresholds, the guidelines suggest that the effects will be negligible and no further assessment is required. Increases in traffic flows of less than 10% are generally considered to be insignificant in environmental terms, as daily background traffic flow can vary by this amount.

Severance

11.25 Severance is the perceived division that can occur within a community when it becomes severed by a major traffic artery. This may result from difficulty in crossing a heavily trafficked road or a physical barrier. Severance is difficult to measure and, by its subjective nature, is likely to vary between different groups within a single community. In addition to the volume, composition and speed of traffic, severance is also likely to be influenced by road width, the demand for movement across a road, the presence of crossing facilities and the variety of land uses and extent of community located either side of a road. All these factors are considered when determining the likely severance effect.

11.26 The percentage change indicators suggested by the IEA for severance effects are set out in table 11.2. The IEA advises that these broad indicators should be used with care and regard should be paid to specific local conditions.

Indicator	Change in total traffic, HGV or hazardous load
Large	>90%
Medium	60-90%
Small	30-60%
Negligible	<30%
Table 11.2: Severance percentage change indicators	

Pedestrian delay

11.27 The IEA guidelines note that changes in the volume, composition and / or speed of traffic may affect the ability of people to cross roads. Typically, increases in traffic levels result in increased pedestrian delay, although increased pedestrian activity itself also contributes. The determination of what constitutes a material impact on pedestrian delay is generally left to the judgement of the assessor and knowledge of local factors and conditions. However, the IEA guidance suggests a lower threshold of 10 seconds delay and an upper threshold of 40 seconds delay for a link with no crossing facilities. It further advises that the lower threshold equates to a two-way flow of approximately 1,400 vehicles per hour in the peak periods.

Pedestrian amenity

11.28 Pedestrian amenity is broadly defined as the relative pleasantness of a journey and can include fear and intimidation if they are relevant. It is affected by traffic flow, traffic composition, pavement width / separation from traffic and pedestrian activity. The IEA guidelines suggest tentative thresholds for judging the significance of effect would be where the traffic flow (or its HGV component) is halved or doubled.

Driver delay

11.29 Delay to drivers generally occurs at junctions where opposing vehicle manoeuvres are undertaken, with vehicles having to give or receive priority depending on the type of junction arrangement. The IEA guidance states that computer modelling programs can be used to assess the changes in driver delay on the network as a result of the proposed development. The guidelines do not state specific thresholds to calculate the magnitude of the change; however, they advise that delays are only likely to be significant when the traffic on the network surrounding the development is already at, or close to, the capacity of the system.

Accidents and safety

11.30 The IEA guidance states that overall changes in vehicle kilometres as a result of a proposed development may be used to assess the magnitude of impact on accidents and safety. However, the guidance does not prescribe specific criteria that can be applied to the changes in vehicle kilometres to identify impact magnitude. Instead, professional judgement should be used based on consideration of a combination of local circumstances, including traffic speed, flow and composition, vehicle conflict and pedestrian activity.

Assessment of significance

11.31 The significance of potential effects has been determined using criteria developed from best practice techniques and expert knowledge. Significance has been derived from measures of the sensitivity of the receptor affected and the magnitude or scale of the change.

11.32 The sensitivity of a road can be defined by the vulnerability of the groups who may use it, such as elderly people or children. A more sensitive area may be where pedestrian activity is high, such as in the vicinity of a school, or where there is already an existing safety issue. It should be noted that receptor sensitivity is judged on the sensitivity of road users (primarily pedestrians). It also takes account of the nature of the road; for example, an 'A' road is likely to have lower sensitivity than a minor residential road. A desktop exercise has been undertaken to identify the sensitivity of each receptor in the study area.

11.33 While the percentage change is an important determinant of impact magnitude, the absolute level of impact, such as the total flow of traffic or HGVs on a link, also needs to be considered. For example, an increase in traffic flow of 100% will lead to a negligible or small impact overall if the existing flows on the road are very low.

11.34 The traffic and transport sensitivity and magnitude criteria are shown in figures 11.2 and 11.3 respectively. These were combined using the matrix in figure 11.4 to determine the degree of effect, which was then used to determine significance. Effects that are moderate or above (including slight to moderate) are considered significant in EIA terms.

Baseline

Local and strategic highway network

11.35 The only access to the port from the public highway is at the eastern end of Castletown, which carries all traffic to and from the port. The road is bordered by residential properties, a hotel and port-related employment buildings and has on-street parking. There is a continuous footway along the southern side of the road and an intermittent footway along the northern side. Approximately 500 m from the port entrance, Castletown joins Lerret Road at a roundabout.

11.36 Lerret Road is a relatively recently constructed road with street lighting, continuous footways along both sides and subject to a 30 mph speed limit. It joins the A354 Portland Beach Road at the Victoria Square Roundabout. This is the only road on and off the island and was improved prior to the 2012 Olympic Games. It handles all traffic from the island, including HGVs associated with the port and the island's six stone quarries. It has a shared footway / cycleway along its western side and street lighting. The speed limit varies on Portland Beach Road, from 30 mph in the south, 40 mph between Victoria Square Roundabout and the roundabout with Coode Way, 50 mph between this and the roundabout with Hamm Beach Road, and the national speed limit between this roundabout and where the road enters Weymouth.

11.37 Portland Beach Road becomes the A354 Portland Road at the Ferrybridge Roundabout, which runs north to the Foord's Corner Roundabout and has footways on both sides. Dorset Council has implemented a one-way system through Weymouth for HGVs, which commences at the Foord's Corner Roundabout. From here, HGV traffic travelling north away from the site will use the following route:

- North on the B3156 Portland Road, which has footways and street lighting and is subject to a 30 mph speed limit, passing through the mini-roundabout with Wyke Road
- Approximately 1.5 km from the B3156 / Wyke Road roundabout, there is a signalised junction with Chickerell Road. HGVs will continue north west from this junction along Chickerell Road, which has footways and street lighting and is subject to a 30 mph speed limit
- The route remains on Chickerell Road for approximately 1 km before turning east onto the Chickerell Link Road via another signalised junction. This has a footway / cycleway along its southern side and street lighting and is subject to a 50 mph limit
- HGVs will continue travelling east along the Chickerell Link Road, which becomes Hampshire Road. Approximately 1.2 km from the signalised junction, the route continues over a roundabout onto the B3157 Granby Way, which has a footway / cycleway along its southern side and street lighting and is subject to a 50 mph limit

- After approximately 1 km, the B3157 forms a three-arm roundabout with Weymouth Way. This is the northern terminus of the one-way system

11.38 HGVs travelling south towards the site will use the following route:

- Approximately 1 km to the south of the Weymouth Way / Granby Way roundabout, Weymouth Way becomes Westwey Road, which has footways and street lighting and is subject to a 30 mph speed limit. HGVs travelling towards Portland will pass through the Westwey Road / Abbotsbury Road junction and continue south
- HGVs remain on the A354 Westwey Road and pass through a number of junctions until the A354 transitions into Buxton Road, which has footways and street lighting and is subject to a 30 mph speed limit
- HGVs remain on the A354 Buxton Road to Foord's Corner Roundabout, which is the southern end of the one-way system

11.39 It should be noted that Dorset Council is considering reversing this one-way system, which would mean that deliveries would travel to the site via the Chickerell Road route and away via the Buxton Road route. To the north, from the Granby Way / Weymouth Way roundabout, all HGVs will travel along the A354 Weymouth Way, which has a shared footway / cycleway along part of its length and street lighting and is subject to a 50 mph limit.

11.40 Weymouth Way passes northwards through a number of roundabouts for approximately 2 km, when it transitions into the A354 Weymouth Relief Road. The relief road was constructed for the 2012 Olympic Games and has crawler lanes in uphill sections. It has a shared footway / cycleway along part of its length and street lighting. The relief road is subject to a 50 mph speed limit along its southern end and the national speed limit along the remainder. It provides a direct connection to the A35(T) via the Stadium Roundabout, approximately 6 km to the north. The A35(T) is a trunk road that provides connections to Bournemouth, Poole, Dorchester and Exeter, as well as facilitating access to other major routes including the A303(T), A30(T) and A31(T).

Existing baseline traffic flows

11.41 The existing baseline two-way AM peak, PM peak and 24-hour annual average daily traffic (AADT) flows on the above road network are set out in table 11.3.

Link ref	Link	AM peak		PM peak		AADT	
		Outbound	Inbound	Outbound	Inbound	Outbound	Inbound
1	Castletown (at port access)	14	38	40	16	333	333
2	A354 Portland Beach Road	789	669	626	828	8,732	9,238
3	A354 Portland Road (south of Foord's Corner Roundabout)	809	590	958	1,014	10,904	9,898
4	A354 Buxton Road (north of Foord's Corner Roundabout)	422	330	515	455	5,782	4,844
5	A354 Buxton Road (Boot Hill)	1,142	643	738	912	11,602	9,596
6	A354 Weymouth Way (south of Granby Roundabout)	673	643	566	912	7,646	9,596
7	A354 Weymouth Relief Road (south of Stadium Roundabout)	1,058	1,283	1,297	1,021	14,533	14,218
8	B3157 Granby Way	746	853	731	1,395	9,115	13,872
9	B3156 Portland Road	590	809	1,014	958	9,898	10,904

Table 11.3: 2017 and 2019 baseline traffic flows

Public transport

11.42 The closest bus stops to the site are adjacent to the Victoria Square Roundabout on the A354 Portland Beach Road, approximately 1 km from the site. First Bus's service 1 runs between Weymouth and Southwell, with two services per hour calling at these stops. The first service arrives just after 05:00, while the last service leaves after 23:00.

11.43 Weymouth Railway Station is approximately 9 km north of the site. South Western Railways operates a half hourly service from the station to London Waterloo, which also provides access to intermediate stops, including Dorchester, Poole, Bournemouth and Basingstoke. In addition, Great Western Railways operates a service every two hours from Weymouth to Bristol Temple Meads via Yeovil and Westbury.

Pedestrians and cyclists

11.44 As discussed above, pedestrian access to the port is provided by a continuous footway along Castletown, which in turn provides access to the Fortuneswell area of Portland via Castle Road and Victory Road. Victory Road connects to Victoria Square, where a shared pedestrian / cycle route continues north along the western side of the A354 Portland Beach Road. This shared footway / cycleway connects to the Rodwell Trail on the mainland, which is part of the South West Coast Path and National Cycle Network (NCN) Route 26. NCN 26 provides an off-road route alongside Portland Beach Road or on quiet roads between Victoria Park Gardens in Fortuneswell and Weymouth. From Weymouth, the route continues north towards Dorchester.

11.45 Easton, Weston and Southwell can be accessed via a continuous off-road path from New Road in Fortuneswell. This connects to Easton Lane, where a footway provides access to the centre of Easton and on to Weston and Southwell. The A354 New Road is served by a cycle route that is a combination of advisory cycle lane and cycleway. From the Yeates Roundabout, Priory Road / Easton Lane and Wide Street provide access to the wider island.

11.46 In addition to wide ranging footway provision, there is a wider network of public rights of way on the island. Castletown also provides a link to public footpath

S3/76, which provides a more direct route to Fortuneswell and connections to the wider island.

Accidents

11.47 In order to establish the existing highway safety record on the local road network, personal injury accident data for the key junctions and links in the study area were obtained from Dorset Council for the five-year period from 01.02.15 to 31.01.20. A total of 48 incidents occurred during this period, two of which were fatal, 14 of which were classified as serious and 32 of which were classified as slight. Only one of the incidents involved a HGV; a fatal accident occurred when a cyclist lost control while travelling along the pavement and fell off the kerb under a HGV. No trends have been identified in the accident data relating to highway infrastructure or safety issues. It can therefore be concluded that there are no existing highways issues that would affect the site or require mitigation.

11.48 Further analysis of the personal injury accident data can be found in the TA in technical appendix L1.

Sensitive receptors

11.49 The sensitivity of road links in the study area has been classified using the guidance in figure 11.2, as follows:

- Castletown: a road used by pedestrians with residential properties and narrow pavements in a conservation area – medium
- Portland Beach Road: runs adjacent to the nationally and internationally designated nature conservation sites of Portland Harbour and Chesil and the Fleet, with a shared footway / cycleway along its length. Other receptors include Chesil Beach and Chesil Vista Holiday Park – medium
- Portland Road: there are a number of sensitive receptors along this link, including All Saints Church of England Academy and Wyke Regis Infant School and Nursery – high
- Buxton Road: there are a number of sensitive receptors along this link, including All Saints Church of England Academy and Chipmunks Day Nursery – high
- Granby Way: runs adjacent to a golf course, with a shared footway / cycleway along its length – low
- Weymouth Way: runs adjacent to Radipole Lake Nature Reserve, with a segregated shared footway / cycleway along part of its length – low
- Weymouth Relief Road: limited sensitive receptors along this link, with a segregated shared footway / cycleway along part of its length – low

Future baseline

11.50 The future baseline AM peak, PM peak and 24-hour AADT inbound and outbound flows in the absence of the proposed development have been modelled for all vehicles and HGVs. These are shown in tables 11.4 and 11.5 for 2023 and tables 11.6 and 11.7 for 2033.

Link ref	Link	AM peak		PM peak		AADT	
		Outbound	Inbound	Outbound	Inbound	Outbound	Inbound
1	Castletown (at port access)	141	383	333	133	2,927	3,187
2	A354 Portland Beach Road	1,033	1,082	988	1,050	12,470	13,154
3	A354 Portland Road (south of Foord's Corner Roundabout)	1,080	1,017	1,370	1,279	15,121	14,166
4	A354 Buxton Road (north of Foord's Corner Roundabout)	822	505	713	822	9,476	8,191
5	A354 Buxton Road (Boot Hill)	1,319	872	949	1,060	13,998	11,925
6	A354 Weymouth Way (south of Granby Roundabout)	821	872	767	1,060	9,796	11,925
7	A354 Weymouth Relief Road (south of Stadium Roundabout)	1,291	1,751	1,450	1,524	16,918	20,207
8	B3157 Granby Way	964	970	834	1,625	11,094	16,012
9	B3156 Portland Road	671	1,005	1,190	1,046	11,489	12,655

Table 11.4: 2023 future baseline traffic flows (all vehicles)

Link ref	Link	AM peak		PM peak		AADT	
		Outbound	Inbound	Outbound	Inbound	Outbound	Inbound
1	Castletown (at port access)	130	352	300	120	2,655	2,914
2	A354 Portland Beach Road	239	432	340	180	3,569	3,776
3	A354 Portland Road (south of Foord's Corner Roundabout)	156	376	297	123	2,796	3,076
4	A354 Buxton Road (north of Foord's Corner Roundabout)	360	139	122	296	2,974	2,688
5	A354 Buxton Road (Boot Hill)	214	255	193	119	2,512	2,308
6	A354 Weymouth Way (south of Granby Roundabout)	145	255	180	119	2,008	2,308
7	A354 Weymouth Relief Road (south of Stadium Roundabout)	195	427	360	200	3,424	3,873
8	B3157 Granby Way	212	93	63	154	1,695	1,527
9	B3156 Portland Road	94	199	152	64	1,516	1,643

Table 11.5: 2023 future baseline traffic flows (HGVs)

Link ref	Link	AM peak		PM peak		AADT	
		Outbound	Inbound	Outbound	Inbound	Outbound	Inbound
1	Castletown (at port access)	142	386	307	160	2,772	3,371
2	A354 Portland Beach Road	1,102	1,141	1,228	938	14,382	12,830
3	A354 Portland Road (south of Foord's Corner Roundabout)	1,125	1,050	1,251	848	14,666	11,710
4	A354 Buxton Road (north of Foord's Corner Roundabout)	846	524	635	705	9,136	7,572
5	A354 Buxton Road (Boot Hill)	1,420	929	1,475	830	17,865	10,852
6	A354 Weymouth Way (south of Granby Roundabout)	880	929	938	830	11,217	10,852
7	A354 Weymouth Relief Road (south of Stadium Roundabout)	1,350	1,822	1,506	1,592	17,626	21,065
8	B3157 Granby Way	1,030	1,045	913	1,123	11,991	13,378
9	B3156 Portland Road	742	1,102	822	985	9,650	12,884

Table 11.6: 2033 future baseline traffic flows (all vehicles)

Link ref	Link	AM peak		PM peak		AADT	
		Outbound	Inbound	Outbound	Inbound	Outbound	Inbound
1	Castletown (at port access)	130	353	294	126	2,619	2,956
2	A354 Portland Beach Road	248	439	412	213	4,076	4,023
3	A354 Portland Road (south of Foord's Corner Roundabout)	157	377	322	151	2,956	3,258
4	A354 Buxton Road (north of Foord's Corner Roundabout)	361	140	135	304	3,059	2,743
5	A354 Buxton Road (Boot Hill)	227	262	308	149	3,299	2,536
6	A354 Weymouth Way (south of Granby Roundabout)	152	262	234	149	2,378	2,536
7	A354 Weymouth Relief Road (south of Stadium Roundabout)	199	431	363	205	3,466	3,924
8	B3157 Granby Way	215	96	102	178	1,954	1,690
9	B3156 Portland Road	98	202	180	89	1,712	1,799

Table 11.7: 2033 future baseline traffic flows (HGVs)

Effects during construction

11.51 Construction traffic will include the movement of workers and delivery vehicles. The number of daily deliveries required has been estimated based on experience of similar projects elsewhere and the main construction activities, as shown in table 11.8. Further details of the calculations behind this figure are set out in technical appendix L2.

Activity	Vehicle frequency	Expected daily traffic	Likely duration of activity (months)
Piling rig	1 or 2 on site	-	6-9
Concrete for piling	8 per pile	*16*	6-9
Steel for piling	1 per day	*1*	6-9
Earthmoving	Nil off site	0	-
Concrete in pumping operations	4 per hour	12	3-6
Ducts for utilities	Daily	1	6-9
Pipes and drainage materials	Daily	1	6-9
Kerbs and road building materials	Daily	1	6-9
Steelwork	Daily	1	9-12
Cladding materials	Daily	2	3-6
Bricks / blocks etc	Daily	2	6-12
Mechanical and electrical ancillaries	Daily	2	6-12
General builders' deliveries	20 per day	*20*	Up to 24
Potential typical maximum daily deliveries (each way) during piling operations (shown in italics above)		**37**	**6-9**

Table 11.8: Estimated daily construction traffic flows

11.52 Table 11.8 shows that the potential typical maximum daily deliveries each way is likely to be experienced during piling operations, when 37 trips are anticipated each way. In order to ensure a worst-case, the assessment has been based on up to 80 two-way movements. It is envisaged that all HGV construction traffic will access and depart the site using the same routes as the operational HGVs, as set out in paragraphs 11.35 to 11.40.

11.53 In addition, construction staff will generate traffic movements on the local road network. It is estimated that up to 300 people will be employed on site at peak times during the construction process. The construction traffic assessment has therefore been based on this peak figure to ensure a robust worst-case assessment. Further details of how construction costs have been used to estimate direct and indirect employment generation are provided in the economic assessment in technical appendix F2.

11.54 Typically, construction employees will arrive on site in a minibus or crew van that has collected staff at pick-up points along the route to the site. Highly labour intensive tasks may require contractors to use site buses to bring crews to work. It is anticipated that use will be made of local labour from the Isle of Portland wherever possible.

11.55 Of the 300 staff, it is estimated that 5% will be supervisory or managerial roles, with 43% based on the island using a non-car mode to travel to work, resulting in approximately nine car-based trips each way. Of the remaining 285 site staff, 43% are expected to be based on the island and use non-car modes to travel to work. The other 163 staff are expected to travel in group buses or minibuses with an average vehicle occupancy of 13 per vehicle, giving a further 13 vehicle trips each way. Overall, therefore, 22 construction staff-related vehicle trips are predicted to take place each way (44 two-way movements).

11.56 The 'with construction traffic' AADT flows, together with the change in flows as a result of the proposed development, are set out in table 11.9. Peak hour flows are not shown because construction working hours are envisaged to run between 07:00 to 19:00 Monday to Friday and 08:00 to 13:00 on Saturdays, so staff traffic will be travelling on the local road network outside peak hours. Deliveries will be scheduled to avoid peak hours on the local road network.

Link ref	Link	Unit	Outbound	Inbound
1	Castletown (at port access)	Flow	2,927	3,187
		Change	2.02%	1.85%
2	A354 Portland Beach Road	Flow	12,470	13,154
		Change	0.47%	0.45%
3	A354 Portland Road (south of Foord's Corner Roundabout)	Flow	15,121	14,166
		Change	0.39%	0.42%
4	A354 Buxton Road (north of Foord's Corner Roundabout)	Flow	9,476	8,191
		Change	0.62%	0.72%
5	A354 Buxton Road (Boot Hill)	Flow	14,188	12,115
		Change	0.21%	0.24%
6	A354 Weymouth Way (south of Granby Roundabout)	Flow	9,796	11,925
		Change	0.30%	0.25%
7	A354 Weymouth Relief Road (south of Stadium Roundabout)	Flow	16,918	20,207
		Change	0.35%	0.29%
8	B3157 Granby Way	Flow	11,094	16,012
		Change	0.27%	0.18%
9	B3156 Portland Road	Flow	11,489	12,655
		Change	0.26%	0.23%

Table 11.9: 2023 'with construction traffic' AADT flows and change as a result of the proposed development (all vehicles)

11.57 Table 11.9 shows that the greatest impact will be experienced in Castletown, immediately outside the port gates, with an increase in flows of just over 2%. In accordance with the guidance set out in paragraphs 11.23 and 11.24, no further assessment is required because the predicted changes in traffic flows are less than 10% on all road links. As a result, negligible effects that will not be significant are predicted on severance, driver and pedestrian delay, pedestrian amenity, and accidents and safety.

Effects post-construction

11.58 The 'with development' traffic flows, together with the change in flows as a result of the proposed development, for all vehicles and HGVs are set out in tables 11.10 and 11.11 for 2023 and tables 11.12 and 11.13 for 2033.

Link ref	Link	Unit	AM peak		PM peak		AADT	
			Outbound	Inbound	Outbound	Inbound	Outbound	Inbound
1	Castletown (at port access)	Flow	144	386	336	136	2,961	3,221
		Change	1.95%	0.72%	0.83%	2.07%	1.16%	1.07%
2	A354 Portland Beach Road	Flow	1,036	1,084	991	1,053	12,504	13,188
		Change	0.27%	0.25%	0.28%	0.26%	0.27%	0.26%
3	A354 Portland Road (south of Foord's Corner Roundabout)	Flow	1,083	1,020	1,373	1,281	15,155	14,201
		Change	0.26%	0.27%	0.20%	0.22%	0.23%	0.24%
4	A354 Buxton Road (north of Foord's Corner Roundabout)	Flow	824	507	715	823	9,493	8,208
		Change	0.17%	0.27%	0.19%	0.17%	0.18%	0.21%
5	A354 Buxton Road (Boot Hill)	Flow	1,321	874	950	1,062	14,015	11,942
		Change	0.10%	0.16%	0.15%	0.13%	0.12%	0.14%
6	A354 Weymouth Way (south of Granby Roundabout)	Flow	822	874	768	1,062	9,813	11,942
		Change	0.17%	0.16%	0.18%	0.13%	0.17%	0.14%
7	A354 Weymouth Relief Road (south of Stadium Roundabout)	Flow	1,294	1,753	1,453	1,527	16,952	20,241
		Change	0.21%	0.16%	0.19%	0.18%	0.20%	0.17%
8	B3157 Granby Way	Flow	966	971	835	1,627	11,111	16,029
		Change	0.14%	0.14%	0.17%	0.08%	0.15%	0.11%
9	B3156 Portland Road	Flow	673	1,007	1,192	1,047	11,506	12,672
		Change	0.21%	0.14%	0.12%	0.13%	0.15%	0.13%

Table 11.10: 2023 'with development' flows and change as a result of the proposed development (all vehicles)

Link ref	Link	Unit	AM peak		PM peak		AADT	
			Outbound	Inbound	Outbound	Inbound	Outbound	Inbound
1	Castletown (at port access)	Flow	132	355	303	123	2,689	2,948
		Change	2.13%	0.78%	0.92%	2.29%	1.28%	1.17%
2	A354 Portland Beach Road	Flow	242	435	342	183	3,604	3,810
		Change	1.15%	0.64%	0.81%	1.53%	0.95%	0.90%
3	A354 Portland Road (south of Foord's Corner Roundabout)	Flow	159	378	300	126	2,830	3,110
		Change	1.77%	0.73%	0.93%	2.24%	1.22%	1.11%
4	A354 Buxton Road (north of Foord's Corner Roundabout)	Flow	362	141	123	298	2,991	2,705
		Change	0.38%	0.99%	1.13%	0.47%	0.57%	0.63%
5	A354 Buxton Road (Boot Hill)	Flow	215	257	194	120	2,529	2,325
		Change	0.64%	0.54%	0.71%	1.16%	0.68%	0.74%
6	A354 Weymouth Way (south of Granby Roundabout)	Flow	146	57	182	120	2,025	2,325
		Change	0.95%	0.54%	0.76%	1.16%	0.85%	0.74%
7	A354 Weymouth Relief Road (south of Stadium Roundabout)	Flow	198	430	362	203	3,458	3,907
		Change	1.41%	0.65%	0.77%	1.38%	0.99%	0.88%
8	B3157 Granby Way	Flow	213	95	64	155	1,712	1,544
		Change	0.65%	1.48%	2.19%	0.89%	1.00%	1.11%
9	B3156 Portland Road	Flow	95	201	156	66	1,533	1,643
		Change	1.47%	0.69%	0.91%	2.14%	1.12%	1.05%

Table 11.11: 2023 'with development' flows and change as a result of the proposed development (HGVs)

Link ref	Link	Unit	AM peak		PM peak		AADT	
			Outbound	Inbound	Outbound	Inbound	Outbound	Inbound
1	Castletown (at port access)	Flow	145	389	310	163	2,806	3,405
		Change	1.94%	0.71%	0.90%	1.72%	1.23%	1.01%
2	A354 Portland Beach Road	Flow	1,105	1,143	1,231	941	14,416	12,864
		Change	0.25%	0.24%	0.22%	0.29%	0.24%	0.27%
3	A354 Portland Road (south of Foord's Corner Roundabout)	Flow	1,128	1,052	1,254	851	14,700	11,744
		Change	0.24%	0.26%	0.22%	0.33%	0.23%	0.29%
4	A354 Buxton Road (north of Foord's Corner Roundabout)	Flow	847	525	636	705	9,153	7,589
		Change	0.16%	0.26%	0.22%	0.20%	0.19%	0.22%
5	A354 Buxton Road (Boot Hill)	Flow	1,421	930	1,476	831	17,882	10,869
		Change	0.10%	0.15%	0.09%	0.17%	0.10%	0.16%
6	A354 Weymouth Way (south of Granby Roundabout)	Flow	882	930	939	831	11,234	10,869
		Change	0.16%	0.15%	0.15%	0.17%	0.15%	0.16%
7	A354 Weymouth Relief Road (south of Stadium Roundabout)	Flow	1,353	1,825	1,509	1,595	17,660	21,099
		Change	0.20%	0.15%	0.18%	0.17%	0.19%	0.16%
8	B3157 Granby Way	Flow	1,031	1,046	915	1,124	12,008	13,395
		Change	0.13%	0.13%	0.15%	0.12%	0.14%	0.13%
9	B3156 Portland Road	Flow	744	1,104	823	987	9,667	12,901
		Change	0.19%	0.13%	0.17%	0.14%	0.18%	0.13%

Table 11.12: 2033 'with development' flows and change as a result of the proposed development (all vehicles)

Link ref	Link	Unit	AM peak		PM peak		AADT	
			Outbound	Inbound	Outbound	Inbound	Outbound	Inbound
1	Castletown (at port access)	Flow	133	356	297	129	2,653	2,991
		Change	2.12%	0.78%	0.94%	2.18%	1.30%	1.15%
2	A354 Portland Beach Road	Flow	251	442	415	215	4,110	4,057
		Change	1.11%	0.63%	0.67%	1.30%	0.83%	0.85%
3	A354 Portland Road (south of Foord's Corner Roundabout)	Flow	160	380	324	153	2,990	3,292
		Change	1.75%	0.73%	0.86%	1.83%	1.15%	1.04%
4	A354 Buxton Road (north of Foord's Corner Roundabout)	Flow	363	141	136	306	3,076	2,760
		Change	0.38%	0.98%	1.02%	0.45%	0.56%	0.62%
5	A354 Buxton Road (Boot Hill)	Flow	228	264	309	150	3,316	2,553
		Change	0.61%	0.53%	0.45%	0.93%	0.52%	0.67%
6	A354 Weymouth Way (south of Granby Roundabout)	Flow	153	264	235	150	2,395	2,553
		Change	0.91%	0.53%	0.59%	0.93%	0.72%	0.67%
7	A354 Weymouth Relief Road (south of Stadium Roundabout)	Flow	202	434	366	207	3,500	3,958
		Change	1.39%	0.64%	0.76%	1.35%	0.98%	0.87%
8	B3157 Granby Way	Flow	216	97	103	179	1,971	1,707
		Change	0.64%	1.44%	1.36%	0.77%	0.87%	1.01%
9	B3156 Portland Road	Flow	99	204	181	90	1,729	1,816
		Change	1.41%	0.68%	0.77%	1.55%	0.99%	0.95%

Table 11.13: 2033 'with development' flows and change as a result of the proposed development (HGVs)

11.59 Tables 11.10 to 11.13 show that both total vehicle flows and HGV flows are predicted to increase by less than 2.5% as a result of the proposed development on all road links modelled, even in the worst-case scenario of 100% of deliveries to the site being made by road. Further afield, development traffic and its associated impacts will be dissipated across the road network and therefore traffic flows would be predicted to change by less than 2.5%. In accordance with the guidance set out in paragraphs 11.23 and 11.24, no further

assessment is required because the predicted changes in traffic flows are less than 10%. As a result, negligible effects that will not be significant are predicted on severance, driver and pedestrian delay, and pedestrian amenity on all road links.

11.60 Given that no issues were identified with the existing road network, and the negligible increases in traffic predicted as a result of the proposed development, no highway safety issues are predicted to be generated by the proposals. It is therefore considered that there will be a negligible effect on accidents and safety that will not be significant.

Mitigation and monitoring

Construction traffic management plan

11.61 A neighbourhood coordinator will be appointed by the contractor so that residents have a known point of contact with whom to raise any particular issues, such as deliveries or specific access requirements.

11.62 As set out in the framework construction environmental management plan in technical appendix C, contractors will be required to implement a construction traffic management plan, which will include details of the following:

- Access arrangements for workers and HGVs
- Routeing restrictions and delivery arrangements
- Vehicle sizes required and schedule of use
- Traffic management
- Parking and loading arrangements
- Proposed working hours

11.63 Construction delivery trips will be spread throughout the day, occurring at times allocated through a project delivery management procedure. This will provide adequate controls, sometimes contractually, to enable the site manager to effectively schedule deliveries to the site to minimise the impact on the local and wider road networks.

11.64 The project will be registered with the Considerate Constructors Scheme, which will continuously monitor the impact of the development on its neighbours and allow refinements and improvements to be made throughout the construction period.

11.65 All loads defined as abnormal by the Department for Transport will be transported by a competent haulier with experience of transporting large or dangerous loads. Normal operating procedures for dealing with large loads will be followed. Prior notice will be given to all police forces operating within the area the load will pass through. In addition, all abnormal loads will be accompanied by at least one escort vehicle with a trained driver.

Travel plan

11.66 A framework travel plan has been developed to establish the principles for minimising single occupancy car use by employees accessing the site. A full travel plan will be completed upon occupation of the proposed development.

The framework travel plan sets out a number of measures to promote more sustainable alternatives to the car, including walking, cycling, public transport and car sharing. These include the provision of travel information packs to employees, a green travel noticeboard / website and the potential for a bicycle user group. Sufficient secure, covered cycle parking will be provided for staff, together with shower and changing facilities.

11.67 The travel plan will be monitored using travel surveys and remedial measures will be put in place if required. Further details on the travel planning strategy can be found in the TA in technical appendix L1.

Residual effects

11.68 No significant residual traffic and transport effects are predicted as a result of the proposed development.

Cumulative effects

11.69 Traffic flows associated with the proposed and consented developments set out in chapter 3 were included in the traffic modelling. Therefore, the potential cumulative effects are included in the modelling results and no significant cumulative effects are predicted.

11.70 The negligible construction traffic effects will be temporary and of a known timeframe and will not cause impacts at the same time as all of the other developments in the vicinity. Therefore, no significant cumulative construction phase effects are predicted.

Figure 11.1
Road links in the study area

Sensitivity of receptor – Traffic

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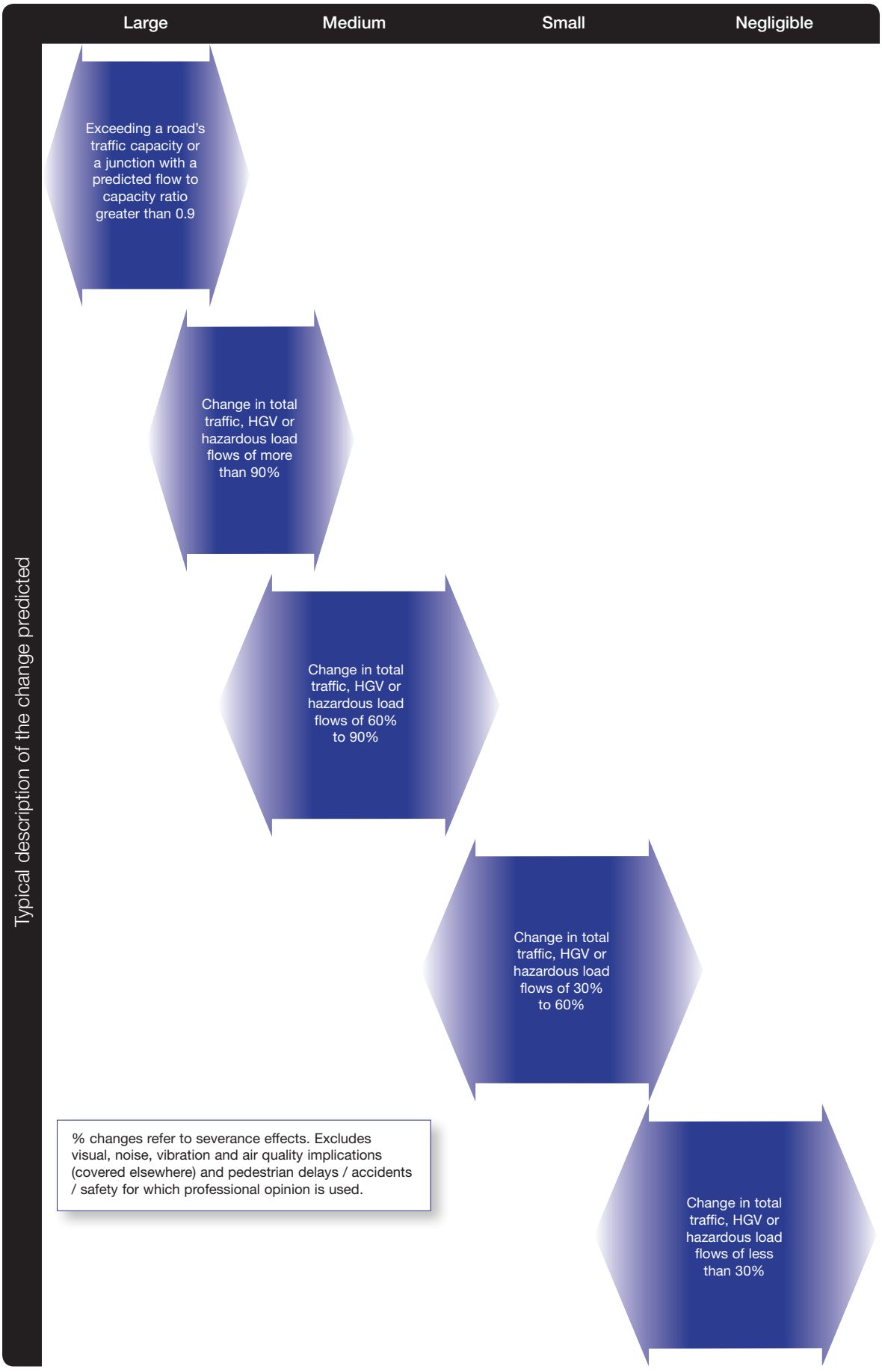
Magnitude of change – Traffic



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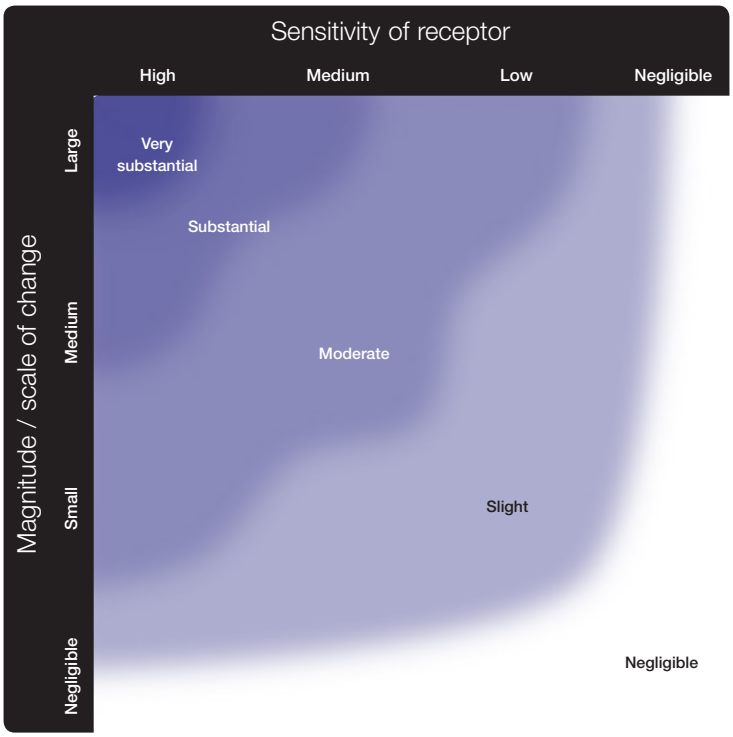
Determination of significance matrix – Traffic



Professional judgement can be used to vary the category where specific circumstances dictate, for example due to the vulnerability or condition of the receptor.

The reason for and nature of any variation will be made clear in the assessment.

Degrees of effect

Very substantial:
A change in total traffic, HGV or hazardous load flow of greater than 90% of the baseline on receptors of medium to high sensitivity; or a change in total traffic, HGV or hazardous load flow of 60 to 90% of the baseline on receptors of high sensitivity to traffic; or a change in total traffic, HGV or hazardous load flow of 30 to 60% of the baseline on receptors of the highest sensitivity to traffic.

Substantial:
A change in total traffic, HGV or hazardous load flows of greater than 90% of the baseline on receptors that are sensitive to traffic flow (e.g. hospitals, shopping centres and areas with narrow pavements); or a change in total traffic, HGV or hazardous load flows of 60 to 90% of the baseline on receptors of medium to high sensitivity to traffic; or a change in total traffic, HGV or hazardous load flows of 60% of the baseline on a receptor of high sensitivity to traffic such as schools, playgrounds and accident blackspots.

Moderate:
A change in total traffic, HGV or hazardous load flows in excess of 60% of the baseline on receptors of some sensitivity to traffic, such as churches, public open space, tourist attractions and residential areas with adequate pavements; or a change in total traffic, HGV or hazardous load flows of 30 to 60% of the baseline on receptors of medium sensitivity (e.g. hospitals, shopping centres and areas with narrow pavements) and high sensitivity (schools, playgrounds and accident blackspots).

Slight:
A change in total traffic, HGV or hazardous load flows of between 30 and 60% of the baseline on receptors of some sensitivity to traffic, such as churches, public open space, tourist attractions and residential areas with adequate pavements.

Negligible:
A change in total traffic, HGV or hazardous load flows of less than 30% of the baseline on receptors of very low sensitivity or sensitive receptors significantly distant from affected roads and junctions.