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INTRODUCTION

- 6.1 This Chapter of the Environmental Statement considers the possible environmental impacts that might ensue as a result of the traffic and transport patterns associated with the development of the New England Resource Recovery Centre (NERRC) incorporating an 'Energy from Waste' (EfW) facility with bottom ash recycling and ancillary landfill at New England Quarry, near Lee Mill in Devon.
- 6.2 The proposed EfW technology will be totally enclosed within a purpose-built new building and auxiliary infrastructure will be provided, including a new haul road to provide access to the wider public highway network; ancillary office space and a visitor centre. In addition, the proposals include for the provision of a landfill operation within the site boundary and this will be used exclusively for the disposal of non-hazardous residual material.
- 6.3 The proposed EfW will be designed for a throughput of 275,000 tonnes per annum, to treat residual waste materials. Taking account of materials that will be brought to the plant but will be unable to be processed, the total waste importation to the site will be 303,000 tonnes per annum.

Site Location

- 6.4 The application site is located approximately 1 kilometre south of the Lee Mill Interchange with the A38 trunk road, 3 kilometres south west of Ivybridge and 16 kilometres north east of Plymouth. The application site is located at National Grid reference 2595 0548 and is shown at Drawing 6/1
- 6.5 The site consists predominantly of a mothballed quarry, access to which is gained via an existing priority junction located at the southern site boundary from New England Hill, which is an unclassified rural lane. The existing route from the quarry to the A38, via the unclassified road network, constitutes the approved access for the winning and working of minerals from the quarry.
- 6.6 The application site is also identified in the Devon Waste Local Plan (Policy WPP1) as a site suitable for strategic waste management facilities, with potential for the following developments:
- Inert waste recycling;
 - Materials recycling facility
 - Waste transfer station
 - Green waste composting;
 - Mixed waste composting;
 - Mechanical biological treatment/biological mechanical treatment;
 - Energy from Waste;
 - Non hazardous landfill; and
 - Landfill gas collection.

- 6.7 However, The Devon Waste Local Plan (2006) recognises that the existing access routes between the application site and the A38 predominantly comprise rural lanes, which it states are not ideally suited for frequent heavy traffic, and consequently determine that the potential use of the site as a waste management facility will be subject to appropriate improvements to the current access arrangements.
- 6.8 Irrespective of this, an independent evaluation of the baseline access provision is undertaken at the section of this report entitled 'Accessibility by Road', and the suitability of the current access arrangements are determined from this. Mitigation measures will also be recommended pursuant to the outcome of this analysis.

Assessment Methodology

Overview

- 6.9 This assessment has been prepared in consideration of the recommendations outlined within the Department for Transport's document entitled 'Guidance on Transport Assessment' (DfT, 2007). Of particular relevance to this are the extent of consultations that have been undertaken with the key transport authorities prior to the preparation of this assessment, and the extent to which these discussions have informed the assessment parameters.
- 6.10 In summary of the aforementioned consultations, pre-application discussions have been undertaken with, although not limited to, Devon County Council, as the local highway authority, and the Highways Agency as the body who has ultimate responsibility for the trunk road network, which includes the A38.
- 6.11 Consultation with Devon County Council (DCC) and the Highways Agency (HA) was first commenced in November 2008 to discuss the proposed scheme and the likely transport implications. Further meetings were held throughout 2009 to discuss further implications of the scheme.
- 6.12 Given that vehicular access will be dependant upon vehicles travelling via the A38 trunk road, this assessment considers the requirement of Circular 2/07 entitled 'Planning and the Strategic Road Network'. It has also been prepared with consideration to the requirements of Circular 02/99 entitled 'Environmental impact assessment' and it takes into account the latest Planning Policy Guidelines as directed by Planning Policy Guidance Note 13 (PPG13) together with relevant local guidance issued by the local planning and highways authorities.

Accessibility by a Choice of Transport Modes

- 6.13 This assessment will review the provision and quality of existing transport infrastructure for all modes of travel and an assessment will be made of the accessibility of the site against what might be considered to be a realistic standard of provision for the type and scale of development being proposed.
- 6.14 In this way, the accessibility of the application site by non-car travel modes will be assessed against the following three criteria:-
- the proximity of the applications site to the nearest serviced interchanges and the opportunities that exist to accommodate interconnecting links between the site and these interchanges;
 - the frequency of services that are available from the transport interchanges; and
 - the destinations that are accessible by the services.
- 6.15 The accessibility of the site by private motorised modes, including car and goods vehicle traffic, will be considered by reference to the site's geographical location in the context of infrastructure serving the immediate locality, as well as the wider area.

Traffic Effects

- 6.16 The limits of the road network that will be considered by this assessment have been agreed with both Devon County Council and the Highways Agency, comprising the following junctions and interconnecting links:
- the proposed haul road access;
 - the A38 Lee Mill interchange, including entry and exit slip roads;
 - the A38 eastbound exit slip / C194 priority junction;
 - the New Park Road / C194 junction; and
 - the Western Road / Beech Road junction.
- 6.17 The potential effects of the calculated development trip attraction will be considered in terms of the change against the current operation of junctions noted above for the following assessment years:
- the anticipated year of opening, being 2014; and
 - 10 years following the registration of the planning application, being 2019.
- 6.18 This reflects the requirements of Circular 2-07¹ and the 'Guidance on Transport Assessment', which require the assessment of impacts on the Strategic Road Network to be made for a date 10 years following the submission of the planning application. It also complies with the requirements

¹ Circular 2-07: Planning and the Strategic Road Network, Department for Transport

to assess the impacts of development on local roads for a period 5 years after opening.

- 6.19 The extent of traffic growth between the surveyed year and the above assessment years will be determined using National Traffic Model (NTM) growth rates attuned with TEMPRO local adjustment factors.
- 6.20 The baseline traffic situation will include traffic growth based on NTM forecasts which have been subject to TEMPRO local adjustment factors. The resultant base situation will therefore assume a level of background traffic growth that incorporates an allowance for future development in the area.
- 6.21 A qualitative assessment of the environmental impacts of site traffic will be undertaken in accordance with the Guidelines for the Environmental Assessment of Road Traffic (Institute of Environmental Assessment, 1993), having particular regard to impacts caused by heavy goods vehicles (HGVs).

Road Safety

- 6.22 The potential effects of the calculated development traffic flows in the context of highway safety will be undertaken with regard to the historical pattern of recorded personal injury accidents occurring within the agreed study area over the recent 5-year period.
- 6.23 Based on the existing pattern of personal injury accidents, an evaluation will be undertaken to establish if the calculated development traffic flows will lead to an abnormal safety risk. In agreement with the local highway authority, particular consideration will be given to the accident rate along Western Road as it passes through the built up area of Lee Mill.

DEVELOPMENT PROPOSALS

Application Details

- 6.24 The proposed development will be a comprehensive scheme for the New England site to reflect its allocation within the Local Plan as a strategic waste management facility for dealing with residual municipal waste from South West Devon, Plymouth and Torbay. The development will consist of the following:
- an Energy from Waste facility with a capacity of 275,000 tonnes per annum (including ancillary offices, welfare and parking facilities);
 - a visitor centre to the EfW;
 - a non-hazardous landfill;
 - a new access road linking in to the A38 at Lee Mill; and
 - an incinerator Bottom Ash (IBA) treatment and recycling facility.
- 6.25 Auxiliary and support infrastructure which, in addition to the process plant, make up the EfW facility include:-
- a weighbridge for monitoring and recording all wastes coming onto and leaving the site;
 - workshops;
 - a bridge crossing over River Yealm;
 - a transformer house: contains the meters, circuit breakers and step-up transformers necessary to export electricity; and
 - storage bays: for air pollution control residues (APCRs) and IBA skips and containers awaiting collection plus empty skips.
- 6.26 A comprehensive description of the development proposals is contained at Section 3 of the Environmental Statement and a plan showing the layout of the development is contained within Drawing 00350/4.

Site Access Arrangements

- 6.27 The assessment of baseline infrastructure undertaken at the section of this report entitled 'Baseline Situation' supports the view of the Local Plan, that the existing access arrangements between the existing access and the A38 are substandard for frequent use by site traffic. It is proposed that the existing quarry access onto New England Hill will be retained for emergency use only. Primary access will be relocated to the north where a dedicated haul road will connect the site to the public highway via an improved junction that incorporates the historic access to Strashleigh tip and the C194.
- 6.28 Part of the proposed haul road will make use of an existing private road to the Strashleigh tip, which was historically used for the disposal of inert waste and, more recently, for recycling soil and demolition waste. Access to the tip was historically taken from a purpose built haul road which linked directly to the Lee Mill interchange and the proposed access location therefore has an

historic use, which involves access by HGVs to the site from the A38, via all four existing slip roads. No concerns regarding HGV turning movements at this location are known and, furthermore, no highways objections were raised in response to a planning application for the extension of Strashleigh tip, submitted in September 1998.

- 6.29 The proposed haul road will be connected to the C194 by a short two-way carriageway road with give-way markings provided at either end to direct site traffic to give-way. Consequently, travelling along the C194 onto the A38 westbound on-slip will maintain priority whereas vehicles entering onto the proposed haul road will give-way to traffic originating from the nearby sewage works and pallet storage area. This junction will replace the three existing accesses that currently serve the former Strashleigh tip, waste water treatment works and pallet storage area. This arrangement mirrors a layout that was suggested by the Highways Agency during the scoping discussions outlined previously within this Chapter.
- 6.30 The combination of the above will therefore allow direct access from and to the westbound carriageway of the A38, and vehicles leaving or seeking to enter onto the eastbound carriageway of the A38 will travel a short distance via the local roads of the C194 and Western Road.
- 6.31 Drawing 6/2 shows the proposed haul road and junction improvements outlined above, and the layout has been the subject of an independent Stage 1 Road Safety Audit. The proposed junction onto the C194 presented as one of two improved arrangements. However, the audit comments favoured the arrangement incorporated within the development proposals and hence, access to the proposed development is based on an optimal layout.
- 6.32 For the Audit, two alternative options (options 3 & 4) were presented to the Auditor, and comments were made against both schemes. Audit comments favoured Option 4 and therefore this was the improvement solution chosen. A copy of the Road Safety Audit, together with SLR's letter to the HA reporting on its finding, is contained at Appendix 6/1

Operational Details

- 6.33 The proposed New England Resource Recovery Centre (NERRC) is anticipated to receive some 303,000 tonnes of residual non-hazardous waste every year. Waste deliveries will be made up of municipal waste and commercial and industrial waste. Municipal waste is expected to arrive from Plymouth, South Hams, Torbay, Teignbridge, West Devon, and Devon County Council. Commercial and industrial waste is anticipated from Plymouth and other transfer stations throughout the region. Deliveries will occur in vehicles operated by or under the control of the applicant
- 6.34 The applicant has anticipated total waste arisings to be no more than 303,000 tonnes per annum within the life time of the current waste contract, and they foresee the broad origins to be as identified below. These figures reflect the total delivery of waste to the site and include material that will be recycled, which is expected to reduce the amount for incineration by around 28,000 tonnes per annum.

MUNICIPAL WASTE

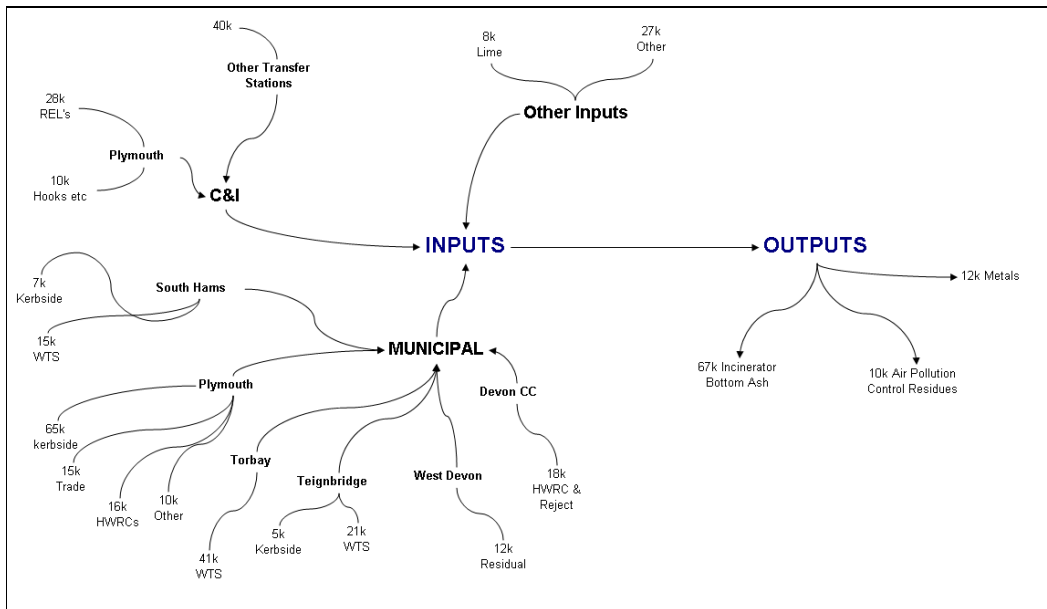
- Plymouth
 - 65,000 tonnes per annum via kerbside collections.
 - 15,000 tonnes a year of trade waste.
 - 16,000 tonnes per year from Household Waste Recycling Centres (HWRCs).
 - 10,000 tonnes per year from other sources.
- South Hams
 - 7,000 tonnes per annum via kerbside collections.
 - 15,000 tonnes from Waste Transfer Stations.
- Torbay
 - 41,000 tonnes from Waste Transfer Stations.
- Teignbridge
 - 5,000 tonnes per annum via kerbside collections.
 - 21,000 tonnes from Waste Transfer Stations.
- West Devon
 - 12,000 tonnes per year of residual waste.
- Devon County Council
 - 18,000 tonnes per annum of residual and reject.

COMMERCIAL & INDUSTRIAL WASTE

- Plymouth
 - 28,000 tonnes per annum RELs.
 - 10,000 tonnes per annum Hooks.
- Other Transfer Stations
 - 40,000 tonnes per year.

- 6.35 In addition to waste inputs, other materials are required for the safe and efficient operation of the EfW and this includes, amongst other things, the use of lime which is used to treat flue gases. With this in mind, an allowance has been made for a further 20,000 tonnes of material to be transported to the site each year.
- 6.36 Some non-combustible material will remain after the incineration process and this will comprise Incinerator Bottom Ash (IBA), Air Pollution Control Residues (APCR), and various metals. IBA is a by-product of the incineration process that can be re-used as aggregate within the construction/aggregates industries and IBA that cannot be recycled or sold to the aggregates industry will be disposed of within the ancillary landfill. APCRs will require to be disposed of offsite at a suitable hazardous landfill Metals will be exported from the site as recycled material.
- 6.37 Based on the above inputs to the NERRC, the applicant has advised that IBA production will be approximately 67,000 tonnes a year, APCRs will account for 10,000 tonnes a year, and metals will make up a further 12,000 tonnes.
- 6.38 A summary of the NERRC operation is provided within Figure 6/1, below.

**Figure 6/1
Summary of Operation**



- 6.39 Given the site's location and the lack of any suitable transport infrastructure other than road, all outputs from the EfW process will be exported from the site via the road network, except those residuals which may be transferred direct to the adjacent landfill
- 6.40 In respect of the operation, the EfW process will be a continual one but it is proposed that waste will be delivered to the site during daytime hours only. This is taken to be 07:00 to 19:00 hours Monday to Friday, and 07:00 to 13:00 hours on Saturdays. There will be a minor element of waste imports to the site on Saturday afternoons, Sundays and bank holidays.
- 6.41 In terms of staff numbers, the proposed development will employ, at most, 40 personnel, comprising a mix of day and shift workers. Day workers will begin work at 08:00 hours and leave at 16:00 hours. Shift workers will be split across three shifts commencing 07:00, 14:00 and 22:00 hours. Employees are expected to arrive in the 30 minute periods before and after their respective working hours. On this basis, the majority of staff movements will occur outside of the busiest times on the road network.
- 6.42 A more detailed assessment of the anticipated waste throughput of the EfW and landfill facility together with the associated vehicle trip attraction is provided in the section entitled 'Operational Phase Trip Attraction'.

Visitor Centre Operation

- 6.43 Included as part of the development proposals will be a visitor centre which will receive pre-arranged educational trips only. The facility will not, therefore, be continuously staffed and visitors will be expected to arrive by coach. Consequently, given the infrequent, unpredictable and negligible trip

attraction associated with the visitor centre, it is ignored within traffic analysis sections of the assessment.

Car Parking

- 6.44 Relevant car parking standards are contained within Appendix 5 of the South Hams' Development Framework: Development Policies document, dated May 2009. Car parking standards are expressed as maxima and relate to individual classifications of land use. However, given the sui generis land use of the Facility, no values are expressed and as such, there are no standards on which to assess the development proposals.
- 6.45 Nevertheless, car parking provision has been assessed on a need basis and the level of car parking reflects the number of staff and visitors that will be likely to be on site at any one time, taking into account shift changeovers. In the absence of any predefined standard, this approach reflects the aspirations of local and national policy, which is to avoid an over provision of car parking spaces whilst ensuring there will be no adverse impact to the public highway.

POLICY CONTEXT

Introduction

- 6.46 This section of the Environmental Statement outlines the current national and local transport policies that are pertinent to the development of the application site to provide a Resource Recovery Centre. A more comprehensive review of policies pertinent to all aspects of the development is undertaken at Chapter 5 of the Environmental Statement.

National Planning Policy

Planning Policy Statement 1: Delivering Sustainable Development

- 6.47 Planning Policy Statement (PPS) 1 sets out the Government's overarching planning policies on the delivery of sustainable development through the planning system. Although it is not exclusively concerned with the traffic affects of development, the document does raise a general awareness to some issues that will be pertinent to the proposed development.
- 6.48 Specifically, paragraph 22 of the policy document advocates the promotion of renewable energy and states that regional and local authorities should promote community heating schemes, the use of combined heat and power, small scale renewable and low carbon energy schemes in development. Given that the development proposals will dispose of waste to supply green electricity and heat to local areas, the development proposals are considered to be wholly in line with the aspirations of national sustainable policy.

Planning Policy Guidance 13: Transport

- 6.49 Planning Policy Guidance 13: Transport deals exclusively with the Government's sustainable transport agenda. The key objectives are to integrate planning and transportation at the national, regional and local level in order to:
- promote more sustainable transport choices;
 - promote accessibility to jobs, shopping, leisure facilities and services by public transport, walking and cycling and;
 - reduce the need to travel, especially by car.
- 6.50 At paragraphs 45-47 the policy document also provides specific land-use policies aimed at the movement of freight. Specifically, the document identifies that local authorities should promote sites that offer the opportunity for sustainable transport movements whilst also identifying that developments that are likely to generate a measurable number of heavy goods vehicle movements should be located with easy access to the trunk road network.

- 6.51 In this consideration of the above, the proposed development will require the import and export of waste using heavy goods vehicles, and the application site will be given proximate access to the trunk road network, so that the proposed development and its location accords with the principle policy relating to movement of freight.

Local Planning Policy

Devon Structure Plan (2001 to 2006)

- 6.52 The Devon Structure Plan sets out the strategic planning framework for the development and use of land within the County up to 2016, and the policies and proposals contained within the Plan provide the basis for more detailed decisions by local authorities, other organisations and individuals in the preparation of their Forward Plans.
- 6.53 Policy TR10 of the Plan outlines that priority will be given the Strategic Road Network and, in doing so, development proposals should not adversely affect the road network in terms of traffic and road safety, and access to the network should not detract from or conflict with the function of the route.
- 6.54 In consideration of this Policy, this Chapter of the Environmental Statement provides a full traffic assessment and considers the capacity of the existing highway network, including the SRN. Evaluation of the highway safety impacts of the development are considered in the light of existing patterns of accidents and the calculated trip attraction associated with the development proposals: the final conclusions on road safety implications are given at the section entitled 'Likely Significant Impacts'. Consequently, this assessment will look to demonstrate that, subject to any necessary mitigation, the proposed development could be accommodated without adverse impact on the SRN.
- 6.55 Policy ST4 of the Plan also states that "*provision for development should only be made where the infrastructure which is directly required to service it is in place or can be provided in phase with development in a sustainably acceptable way. Developers will be expected to contribute to, or bear the full cost of, such new or improved infrastructure and facilities where it is appropriate for them to do so.*" Considering this in the context of the proposed development, this Chapter of the Environmental Statement considers the baseline infrastructure and proposes improvements where they are deemed necessary. As this report will therefore demonstrate, the proposed development could receive access from the wider public highway network and therefore complies with Policy ST4 of the Plan.
- 6.56 The Structure Plan also briefly considers waste management and states that "*waste management facilities should be located close to major centres of population, in order to minimise transport of waste, particularly by road.*" As previously described, the application site lies between the major population centres of Plymouth, Exeter and Ivybridge, and is therefore ideally suited to comply with this aspiration. This is reflected by the status given to the application site within the Waste Local Plan, which identifies it as being

suitable for waste treatment. Consequently, the location of the proposed development appears to accord with this policy.

Devon County Council Waste Local Plan (June 2006)

- 6.57 The Devon County Council Waste Local Plan sets out the County Council's detailed land-use policies and proposals for the management of waste in Devon.
- 6.58 Policy WPP21 of the Waste Local Plan states that waste development shall only be permitted where the potential generation of heavy goods vehicle movement can be satisfactorily accommodated on the local highway network, and/or that these movements will not cause demonstrable harm to the interests of acknowledged importance.
- 6.59 In consideration of Policy WPP21, this Chapter of the Environmental Assessment considers the performance of the local highway network in respect of capacity and safety, with and without development, and mitigation measures are suggested to address any identifiable deficiency. Consequently, this Chapter will demonstrate that the development proposals can be adequately accommodated by the highway network, subject to any mitigation measures, and in so doing demonstrate that the development proposal complies with the above policy.
- 6.60 Paragraph 7.4.9.5 of the Waste Local Plan also recognises that the provision of alternative means of transport will often be impracticable to waste facilities but, where transport by road is unavoidable, then road use should be restricted as far as possible to the Strategic Road Network (SRN). In this regard, the development will be primarily serviced by the high capacity strategic road network for the majority of trips to the facility, with only the final kilometre or so utilising the County road network. With this in mind, the development proposals are considered to comply with the thrust of the above policy.
- 6.61 As previously noted, New England Quarry is identified within in the Waste Local Plan as a site that is suitable for a 'Strategic Waste Management Facility' which suggests that, subject to appropriate mitigation, the overarching principle of development to a waste handling facility is accepted.

Section Conclusion

- 6.62 Consideration of the relevant sustainable transport policy has been undertaken above, and it is concluded that the proposed development broadly meets all salient policy requirements or that consideration will be given within this Chapter of the Environmental Statement to particular issues later with a view to demonstrating compliance.

BASELINE SITUATION

Accessibility by Road

Introduction

- 6.63 Devon County Council is the local highway authority and has therefore the responsibility to maintain and protect the performance of all local roads in the County. The Highways Agency is an executive body of the Department for Transport and they have full responsibility for the maintenance and protection of the strategic road network, which includes the A38.
- 6.64 As confirmed within the section entitled 'Assessment Methodology, the limits of the road network that will be considered by this assessment have been agreed with both Devon County Council and the Highways Agency, and this assessment therefore considers the following junctions and interconnecting links:
- the proposed haul road access;
 - the A38 Lee Mill interchange, including entry and exit slip roads;
 - the A38 eastbound exit slip / C194 priority junction;
 - the New Park Road / C194 junction; and
 - the Western Road / Beech Road junction.
- 6.65 In addition to the above, this section of the Chapter considers the wider road network to include the existing access routes to the quarry. From this review, the suitability of the existing access routes will be determined.
- 6.66 The existing highway network within the vicinity of the application site is illustrated on Drawing 6/3 and the salient components of the agreed study area road network are described below.

Historical Access Route

- 6.67 The historical means of access to the application site (New England Quarry) is via a priority T-junction that connects onto New England Hill at the south-eastern corner of the application site, approximately 2.2 kilometres travel distance from the settlement of Smithaleigh. At this location, New England Hill widens to some 9 metres, which is suitable for two-way goods vehicle traffic, and junction radii also appears to be suitable for regular use by goods vehicles.
- 6.68 Visibility to and from the access is severely restricted by existing vegetation on both sides of the carriageway, which will need to be extensively trimmed back in order to achieve a basic splay. Whilst this could be achieved on the northern side of the carriageway, land ownership will prevent improvement along the southern side. Consequently, forward visibility towards the junction along New England Hill, from the west, will remain substandard.

- 6.69 Beyond the access, New England Hill is a two-way single carriageway rural lane that connects with New Park Road approximately 2.2 kilometres travel distance to the north, and with a number of unclassified roads to the south. The carriageway is typically limited to around 3.5-metres width, which is unsuitable for regular two-way heavy goods vehicle movements, although passing bays are available at regular intervals.
- 6.70 Consequently, the existing access route along New England Hill is concluded to be substandard and opportunities to mitigate are thwarted by landownership constraints. Therefore, development traffic could not be accommodated along this route in an environmentally sensitive, safe or efficient manner.
- 6.71 With this in mind, and as outlined within the 'Development Proposals' section of this Chapter, the development proposals include for the provision of a new haul road that will allow access from the north via the junction onto the C194, located south of Lee Mill. At this location, development traffic will have access to the roads included within the study area road network described below.

Study Area Road Network

- 6.72 The haul road is proposed to connect onto the C194 south of A38 dual carriageway. This will therefore be the first point of impact for vehicles leaving the site.
- 6.73 Currently, three accesses are provided from the C194 onto the private road that links the former Strashleigh tip with the nearby sewage works and pallet storage area. The first is a one-way access located where the C194 becomes the entry slip onto the eastbound carriageway of the A38 and a second is a two-way access that connects with the southern radius of the junction that is formed where the exit slip road from the A38 westbound carriageway meets with the C194. These two junctions, together with the priority T-junction incorporating the exit slip from the A38 westbound carriageway, connect onto the C194 within an area of just 40 metres, which is substandard in a design context. A further junction is created onto the exit slip from the A38 westbound carriageway some 20 metres east of its junction with the C194.
- 6.74 In view of the above, this section of the highway network is considered to be overly complex and is likely to encourage unacceptable traffic movements that may increase the safety risk of this part of the network. Consequently, intensification of turning movements across these junctions will require mitigation.
- 6.75 The C194 is a single lane two-way carriageway road that essentially acts as the interconnecting link between the entry and exit slip roads of A38 westbound carriageway and Western Road located to the north. The C194 is approximately 9 metres wide and is lined by grassed verges which are protected by raised concrete kerbs.

- 6.76 The C194 passes underneath the A38 dual carriageway some 75 metres south of its junction with Western Road and just south of this underpass, the exit slip road from the westbound carriageway of the A38 connects with the C194 at a priority T-junction. The exit slip from the A38 provides a two lane approach to the give-way junction, although the junction essentially operates as a single lane approach due to the bias in right turn traffic movements towards Lee Mill.
- 6.77 The junction is well used by heavy goods vehicle traffic and appears to be broadly compliant with current design guidelines in respect of geometry and visibility. However, the junction is made deficient by the presence of the access to the sewage works/pallet storage area, which encourages vehicles travelling from the north to sweep across the give-way markings of the A38 westbound exit slip, resulting in an adverse safety risk.
- 6.78 The entry slip onto the westbound carriageway of the A38 begins where the carriageway of the C194 becomes one-way, just west of the junction with the A38 exit slip road. The entry slip road appears to be compliant with design guidelines and is well used by heavy goods vehicle traffic.
- 6.79 Access from the A38 eastbound carriageway is achieved from an exit slip road located immediately west of Lee Mill. Where the slip road enters onto a turning circle the speed limit reduces to 30mph and the road becomes the local road known as Western Road.
- 6.80 At this location, Western Road is a single lane two-way carriageway that runs roughly on an east to west alignment. It connects the exit and entry slip roads of the A38 westbound carriageway which are separated by some 680 metres. Western Road is typically in excess of 6.5 metres wide and is lined by a mix of commercial and residential properties until it is connected to the C194, some 570 metres west of the A38 exit slip road.
- 6.81 Western Road is connected to the C194 at a priority T-junction that appears to be fully compliant with current design guidelines in respect of both junction geometry and visibility. The junction lies just 100 metres west of the priority T-junction that is formed where Beech Road connects onto Western Road. Similarly, this junction appears to be satisfactory in respect of geometry and visibility.
- 6.82 Immediately east of the junction with Beech Road, Western Road becomes the entry slip onto the eastbound carriageway of the A38, which is provided within acceptable standards.

Accessibility by Non-Car Modes

- 6.83 This assessment assumes that the proposed development is unlikely to attract a significant number of non-car trips on the basis of the scale and type of use, its geographical location in the context of local population centres and the availability of interconnecting non-car infrastructure.

- 6.84 Consequently, the proposed development is assumed to be predominantly attractive to people travelling by car, whether this is as a car driver or car passenger. On this basis, further consideration of non-car accessibility is not necessary.
- 6.85 Efforts will be made as part of the development to encourage sustainable travel with the use of travel plans, although the broad accessibility of the site remain fully compliant with local policy (Paragraph 7.4.9.5 of the Waste Local Plan) considering the scale and type of development that is being proposed.

Summary of Accessibility

- 6.86 Overall, the application site is well located in respect of the strategic and high capacity road network from which traffic movements associated with the proposed development will primarily originate. Consequently, the proposed development accords with paragraphs 45-47 of PPG13 and paragraph 7.4.9.5 of the Waste Local Plan. The opportunities to travel to the application site by non-car travel modes is fully compliant with current policies pertaining to the non-car accessibility credentials of waste management developments, as indicated within the applicable Waste Local Plan.
- 6.87 Therefore, with reference to the above, the primary consideration for this assessment is whether or not development related traffic will detrimentally affect the operation of local road network.

Existing Traffic Flows

- 6.88 In order to establish existing traffic flows across the agreed study area network a series of traffic surveys have been undertaken. This comprises a 12-hour manual classified count undertaken on Tuesday 13th January 2009 at the priority T-junction comprising the C194 and Western Road. A supplementary peak period traffic count was undertaken on Tuesday 9th June 2009 in order to record traffic movements occurring between the C194, exit slip from the A38 westbound carriageway and the various access associated with the nearby waterworks and pallet storage area. A registration plate survey was also carried out for the peak periods on Tuesday 1st September 2009 in order to provide an understanding of vehicle origins and destinations within the network.
- 6.89 Combination of the above provides an indication of the existing traffic flows across all parts of the study area road network. The raw traffic survey information is contained at Appendix 6/2 of this report, whereas a summary of the peak hour traffic flows are shown within the network flow diagrams contained at Appendix 6/3.
- 6.90 In addition to the above, an automatic traffic count recorded the hourly traffic flows over the seven consecutive day period commencing 13th January 2009. This information was primarily used to inform the analysis of daily traffic impacts. The results of this survey are also included within Appendix 6/3.

Baseline Traffic Flows

- 6.91 Following consultation with the relevant highway authorities, and having regards to the requirements of Circular 2/07 'Planning and the Strategic Road Network', it has been agreed to assess the development impacts from the year of registration of the planning application (2009) together with a horizon year of 10 years after commencement of operations (2019).
- 6.92 Traffic growth factors have therefore been applied to the existing traffic flows using uplift factors derived from the National Traffic Model (NTM) having then been corrected using TEMPRO local adjustment factors. Factors have been calculated for total traffic growth. NTM traffic growth has been calculated assuming the 'Rural Areas' category, which assumes slightly more growth than the 'Other Urban Area's category and is therefore robust. TEMPRO adjustments have been calculated using version 6.1 of the software combined with data for the Ivybridge sub-region contained within dataset 5.4.
- 6.93 The calculated traffic growth factors are shown in the table below and the resultant traffic flows for the anticipated year of opening and horizon year are shown on the network flow diagrams contained at Appendix 6/4.

Table 6/1
TEMPRO Traffic Growth Calculation

	Anticipated Opening Year (2009 to 2014)			Horizon Year (2009 to 2019)		
	NTM Factor	TEMPRO Adjustment	Resultant Growth Factor	NTM Factor	TEMPRO Adjustment	Resultant Growth Factor
AM Peak		1.075	1.131		1.131	1.240
PM Peak	1.11	1.081	1.137	1.206	1.101	1.253

GB Daily Factor – 2009-2014 = 1.055

GB Daily Factor – 2009-2019 = 1.101

- 6.94 In order to ensure the most rigorous assessment is undertaken, the traffic growth increase that will result from application of the growth rates calculated above have been considered against the trip generation of the consented new community at Sherford, to ensure that this assessment assumes growth that fully reflects that generated by the Sherford development.
- 6.95 To this end, attention has been given to the Transport Assessment that was submitted in support of the development proposals for the new community at Sherford. Section 12 of the report considers the associated trip generation and distribution, which is limited to the assignment of trips onto the A38. Consequently, no consideration is given within the analysis to the potential change in traffic flows on local roads within Lee Mil.
- 6.96 Nevertheless, it is considered that the potential for a change in flows on roads within Lee Mill is limited, given that the new community at Sherford embodies *“sustainable principles that aim to coordinate the land uses that will be provided as part of the developments proposals, to maximise functionality*

*and usability, whilst minimising unnecessary journeys and less sustainable travel choices*².

- 6.97 In this regard, the new community at Sherford will incorporate educational, retail, employment and leisure opportunities so the need to travel to Lee Mill will be likely limited to travel-to-work trips associated with the Lee Mill Industrial Estate. These travel-to-work trips are already accounted for within the surveyed traffic flows and, consequently, this assessment does not foresee any material change in flows brought about by the development of the new community at Sherford.
- 6.98 Other consented development has been considered as part of this assessment in line with the cumulative impact requirements of Circular 02/99. Specifically, consideration has been given to the traffic effects associated with the recent grant of permission for an anaerobic digestion plant at Higher Challonsleigh Farm, Lee Mill, Ivybridge. The planning application reference is 49/0696/2009/CM.
- 6.99 The submitted Transport Statement indicates that traffic increases resultant from the permitted development will be limited to just 6 additional trips (12 two-way movements) per day, which will equate to less than 1 additional trip per hour. This is well within the realms of being immaterial and will be more than accounted for within the calculated traffic growth that is assumed by this assessment. Consequently, no further consideration of the permitted development is deemed necessary for the purposes of this assessment.

Baseline Highway Performance

- 6.100 The existing and baseline operations of junctions within the study area road network have been modelled using recognised industry-standard modelling tools. The Study Area for the assessment is shown on Drawing 6-3 and for this assessment the operation of the following junctions have been considered:
- the priority T-junction comprising the C194 and exit slip from the westbound carriageway of the A38;
 - the priority T-junction incorporating the C194 and Western Road; and
 - the priority T-junction created where Beech Road meets with Western Road.
- 6.101 Analysis of the existing access arrangements onto the private road that serves the former Strashleigh tip and the nearby sewage works and pallet storage areas has not been undertaken by virtue of the pre-determined need for mitigation of these junctions. Mitigation is considered later within this report and all improvements will be subjected to capacity analysis.

² Paragraph 2.2.1, Sherford Transport Assessment, November 2006
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C194 / A38 Westbound Exit Slip

- 6.102 In accordance with the above methodology, the capacity of the priority T-junction that comprises the C194 and exit slip from the westbound carriageway of the A38 has been assessed using the TRL software programme PICADY, which is the industry standard tool for priority T-junctions.
- 6.103 The software calculates the theoretical capacity of the junction based on input data pertaining to the junction's geometric characteristics. It then considers and adjusts the capacity of the junction in view of the traffic demand inputs, and a number of resultant measurements are provided in its output. The most informative of these measurements is the ratio of flow to capacity (RFC) which represents the performance of the junction as a value of between '0' and '1', where figures exceeding '1' indicate a breach of capacity.
- 6.104 It should be noted, however, that due to site-to-site variations, a standard error exists within the capacity formulae of between +/- 15%. This means that in a situation where an RFC of 0.85 is calculated, queuing in the assessment year will be avoided in 5 out of 6 peak hours. Similarly, if an RFC of 0.70 is calculated, queuing will be avoided in 39 out of 40 peak hour periods. (Paragraph 3, DMRB). This equates to 98% of peak hours being void of queuing and, consequently it is implicit that RFC's less than 0.70 will almost always result in nil queuing.
- 6.105 With this in mind, DMRB states that an RFC of 0.85 or less can be economically justified, although higher or lower RFC's can be justified – for example, the environmental implications of queuing may justify a lower RFC.
- 6.106 Within the capacity model, the westbound exit slip has been modelled as a single lane approach assuming that this accommodates traffic turning right towards Lee Mill only. This has been done to avoid over-estimation of the capacity which will be resultant from existing and significant bias in lane usage. This is an acceptable modelling assumption given that traffic that will be accommodated within the nearside lane of the junction will never exceed the modelled capacity of that lane, which is equivalent to 303 vehicles an hour in 2019.
- 6.107 Under this arrangement, the PICADY model provides output for the offside lane of the exit slip as the movement towards Lee Mill is the only movement that gives way. The capacity assessment of the junction uses a flat demand profile to reflect the relatively constant arrival rate of vehicles throughout the peak hours, which was observed by the traffic surveys.
- 6.108 The results of the PICADY assessment for the existing and base year scenarios are provided at Appendix 6/5. However, a summary of the results are provided within the tables below.

Table 6/2
C194/A38 Westbound Exit Slip – AM Peak ‘Without Development’

Movement	2009 Surveyed Traffic Flows		2014 Baseline Traffic Flows		2019 Baseline Traffic Flows	
	Max. RFC	Max. Q	Max. RFC	Max. Q	Max. RFC	Max. Q
AM Peak	0.436	1	0.511	1	0.575	1
PM Peak	0.612	2	0.760	3	0.903	7

6.109 In view of the above results, the maximum RFC is calculated to be just 0.903, which is anticipated in the evening peak hour of 2019. The results suggest that the junction will operate with reserve capacity assuming no development traffic and queuing will be within acceptable limits.

C194 / Western Road

6.110 The theoretical operation of the priority T-junction that is formed where the C194 meets with Western Road has also been considered with the use of the PICADY software. The capacity assessment uses a flat demand profile to reflect the relatively constant arrival rate of vehicles throughout the peak hours, which was observed by the traffic surveys.

6.111 The results of the PICADY assessment for the existing and base year scenarios are provided at Appendix 6/6. However, a detailed summary of the results are provided within the tables below.

Table 6/3
C194 / Western Road – AM Peak ‘Without Development’

Movement	2009 Surveyed Traffic Flows		2014 Baseline Traffic Flows		2019 Baseline Traffic Flows	
	Max. RFC	Max. Q	Max. RFC	Max. Q	Max. RFC	Max. Q
C194 to Western Road (West)	0.097	<1	0.115	<1	0.132	<1
C194 to Western Road (East)	0.280	<1	0.332	<1	0.386	1
Western Road to C194	0.245	1	0.298	1	0.356	1

**Table 6/4
C194 / Western Road – PM Peak ‘Without Development’**

Movement	2009 Surveyed Traffic Flows		2014 Baseline Traffic Flows		2019 Baseline Traffic Flows	
	Max. RFC	Max. Q	Max. RFC	Max. Q	Max. RFC	Max. Q
C194 to Western Road (West)	0.070	<1	0.093	<1	0.117	<1
C194 to Western Road (East)	0.432	1	0.533	1	0.633	2
Western Road to C194	0.251	1	0.329	1	0.401	2

- 6.112 In view of the above results, the indicated operation of the C194/A38 westbound exit slip is calculated to be well within capacity thresholds, with a worst-case RFC of just 0.633 that is calculated to occur within the evening peak of 2019. This suggests that queuing at the junction will be an extremely rare event and the junction will therefore operate within acceptable limits, without the addition of development related traffic

Western Road / Beech Road

- 6.113 The operation of the Western Road / Beech Road priority T-junction has also been considered with the use of the PICADY software. Site observations and the initial PICADY assessments show that the junction currently operates at capacity during peak periods. To reflect this, the PICADY model has been used to determine the theoretical level of impact associated with the addition of development traffic: the model has been calibrated at the existing year scenario to provide an RFC output of 1 and results focus on changes in driver delay as this is the most meaningful output when RFCs exceed 1.
- 6.114 The capacity assessment also uses a flat demand profile to reflect the relatively constant arrival rate of vehicles throughout the peak hours, which was observed by the traffic surveys.
- 6.115 Based on the above, the results of the PICADY assessment for the existing and base year scenarios are provided at Appendix 6/7 and a detailed summary of the results is provided within the tables below.

**Table 6/5
Western Road / Beech Road – AM Peak ‘Without Development’**

Movement	2009 Surveyed Traffic Flows	2014 Baseline Traffic Flows	2019 Baseline Traffic Flows
	Queuing Delay (mins/veh)	Queuing Delay (mins/veh)	Queuing Delay (mins/veh)
Beech Road to A38 Entry Slip	2.51	8.11	11.15
Beech Road to Western Road	2.07	6.21	8.71

**Table 6/6
Western Road / Beech Road – PM Peak ‘Without Development’**

Movement	2009 Surveyed Traffic Flows	2014 Baseline Traffic Flows	2019 Baseline Traffic Flows
	Queuing Delay (mins/veh)	Queuing Delay (mins/veh)	Queuing Delay (mins/veh)
Beech Road to A38 Entry Slip	2.12	4.95	7.48
Beech Road to Western Road	1.33	4.18	6.68

- 6.116 The above output suggests that drivers using the above junction will be delayed by a maximum of around 11 minutes under base flow conditions. This level of delay is anticipated in the morning peak of 2019. The impact of the development traffic on driver delay is considered later in this Chapter, within the section entitled ‘Impact During Operational Phase’.

Baseline Highway Safety

Trunk Road Safety Record

- 6.117 For the purposes of this assessment, the European Road Assessment Programme (EuroRAP) has been reviewed for the A38 trunk road. The purpose of EuroRAP is provide a common indication of the risk of accidents for a road based on the ratio of traffic flow and the number of recorded accidents over a given period. The scheme uses five bands of risk, which are as follows:-
- low;
 - low to medium;
 - medium;
 - medium to high; and
 - high.

- 6.118 In the period between 2004 and 2006, the section of the A38 local to the application site is given as having a low accident risk, which provides a preliminary indication that the addition of development traffic is unlikely to crystallise into any adverse safety risk. On this basis and in consideration of the all-purpose function of the trunk road, the addition of development traffic will not result in any demonstrable harm to the performance of the trunk road network.

Local Road Safety Record

- 6.119 Personal injury accident data has been obtained from Devon County Council for the five year period between January 2003 and December 2007. The accident data provides details of the location, severity and causation of each of the recorded accidents. A copy of the raw accident data is provided at Appendix 6/8 and this information has been overlaid onto Ordnance Survey mapping to allow for closer examination, included at Drawing 6/4.
- 6.120 By way of summary, the data reveals that a total of 15 personal injury accidents were recorded within the agreed study area during the assessment period, and these are summarised as follows:-
- 4 accidents were recorded at the exit slip from the eastbound carriageway of the A38. Three of the accidents were a result of either rear end shunts or vehicles overtaking: resulting injuries were classified as slight. The remaining accident resulted in a fatal injury caused by a vehicle overrunning a body in the carriageway. The cause of the body being in the carriageway is unknown.
 - 1 accident occurred at the Western Road / C194 junction and was a result of a car losing control and colliding with a lamppost. The ensuing injury was classified as slight.
 - 2 recorded accidents took place at the Western Road / Beech Road junction. The first was a result of a car failing to give-way resulting in a slight injury. The second involve a HGV colliding with a wall when its payload came loose and slid onto the cab.
 - 2 accidents were recorded along Beech Road and involved a vehicle losing control and colliding with a lamppost, and a vehicle emerging from the Tesco egress failing to give-way to oncoming traffic.
 - 1 accident occurred on Western Road, just south of the junction with New Park Road. The accident was caused when a pedestrian crossed the carriageway from behind a parked car and was struck by a reversing vehicle. The accident resulted in a slight injury.
 - 1 accident occurred at the eastbound entry slip to the A38 and involved a rear end collision, resulting in slight injury.
 - 1 accident occurred on the C194 at the approximate position of the under pass, in the form of a rear end collision. The injury was classified as slight.
 - 3 accidents were recorded at the junction of the westbound exit slip of the A38 onto the C194. Two were a result of vehicles from the A38 slip failing to give-way to oncoming traffic. The third was related to the poor health of the driver. All resulted in injuries classified as slight.

- 6.121 In view of the above, there have been no accidents within the vicinity of the existing access to the quarry and no accidents involved heavy goods vehicles losing control as a result of highway geometry. Therefore, it is concluded that there is no existing adverse safety risk that could be attributed to the use of the road network by heavy goods vehicles. Furthermore, there are no clusters of accidents that will suggest a deficiency in the design of the local highway network resulting in an adverse safety risk
- 6.122 The salient issue for this assessment, therefore, is whether or not the calculated construction / operational phase traffic will materially and detrimentally alter the safety risk on any part of the agreed study area road network. The safety impacts associated with construction traffic are considered under the subsequent section of this report, whilst operational impacts are considered within the section entitled 'Impacts During Operational Phase'.

IMPACTS DURING CONSTRUCTION PHASE

Introduction

6.123 This section of the Environmental Statement considers the likely impacts during the construction of the proposed 'Resource Recovery Centre'. Where the likely impacts are less than or equal to those likely to arise as a consequence of the operation of the facility, reference is given to the analysis and results given under the section entitled 'Impacts During Operational Phase'.

Context

6.124 Construction of the Facility is anticipated to occur over a 26 month programme commencing in 2011 and ending late in 2013, although it is any site preparation works will be undertaken prior to these dates. The main elements of construction on the site are summarised below:

- earth moving operations and ground works;
- construction of building foundations and below ground elements;
- construction of building steel structure and facades;
- installation of mechanical equipment;
- site ground-works and landscaping; and
- testing and commissioning.

6.125 Construction of the NERRC facility will require the importation of construction materials, machinery and plant to accord with these elements. The following sections assess the likely volumes of traffic associated with these activities and the impact that this will cause on the adjacent transport network.

Construction Phase Trip Attraction

6.126 Based on the construction operations detailed above and an anticipated commencement date of 2011, construction traffic will access the site over a two year period, with peak construction vehicle movements likely to occur in early 2013.

6.127 All access to the construction works will take place from the proposed access junction, which will be included in the preliminary phase of the overall construction contract. All traffic will be routed via the A38.

6.128 In terms of the number of HGV trips associated with the full construction phase, due to start in 2011, this will depend on the successful contractor's preferred construction methods. However, based on previous experience, it is considered that, on average, there will be up to 40 HGV trips (80 movements) per day associated with construction. Nevertheless, the level of trip attraction could reduce depending on certain construction methods such as, for example, the use of a mobile concrete batching facility on site.

- 6.129 It is estimated that there will be up to approximately 250 construction personnel and, given the location of the site, all of these personnel will be expected to arrive by road, either as a car driver or passenger, or the via the contractor's own transport arrangements. Assuming a car occupancy rate of 1.2 persons per vehicle, this equates to 210 light vehicle trips per day (420 movements).
- 6.130 Based on these figures, it is evident that the level of traffic increase during construction will be broadly similar to the operational phase, which has been assessed for impact. Indeed, total vehicle movements during the operational phase equates to 179 trips (358 two-way movements) whereas construction will result in some 250 trips per day. The balance of 71 trips will be accommodated by the contractor's own transport arrangements which will include a staff bus.
- 6.131 It is also noteworthy that the operational phase traffic flows are equivalent to 318 passenger car unit trips (636 two-way movements) per day, whereas during construction this will be 290 trips (580 two-way movements). Consequently, in respect of network capacity, the construction phase traffic movements will be less than the operational phase prior to the implementation of a staff worker's bus.

Construction Phase Travel Plan

- 6.132 In order to mitigate the impact of construction traffic during network peak hours, a Construction Phase Travel Plan will be developed and implemented by the successful contractor. In the absence of an appointed contractor, an indicative travel plan has been prepared in order to provide the framework of a more detailed site plan. This is contained at Appendix 6/9 of the report.
- 6.133 In essence, the appended travel plan focuses on the:
- coordination of car share for construction personnel;
 - implementation of contractor operated mini bus service;
 - restriction of unnecessary vehicle movements during the day; and
 - coordination of deliveries to arrive outside of peak times where appropriate.
- 6.134 With implementation of these measures, it can be expected that the volume of light vehicle trip attraction can be brought down below the levels assessed for the operational phase of the development.

Traffic Impacts

Proposed Site Access Junction

- 6.135 The assessments undertaken in this assessment for operational phase traffic demonstrate that the capacity of the proposed site access junction onto the C194 operates well within the available capacity when taking account of baseline traffic growth and additional development traffic. With this in mind, and considering that baseline traffic growth will be less in the construction

period, it is concluded that the proposed access junction will also operate well within capacity thresholds during the construction phase.

Highway Safety Impacts

- 6.136 The proposed access junction will be constructed as part of the construction phase of the project and implementation of the necessary works within the highway will be undertaken under suitable traffic management schemes. With the presence of a suitable traffic management scheme, it is considered that the works may be accommodated without an adverse impact on road safety.
- 6.137 Delivery of construction materials to the site is a potential hazard to be considered. As Principal Contractor under the CDM Regulations, the contractor will have an obligation to ensure that all works on site are undertaken in a safe manner. This will include deliveries to the site, and the Health and Safety Plan developed by the contractor will include a requirement for all drivers delivering to the site to drive with due care and attention, and with specific regard to the safety of other road users.
- 6.138 Subject to the above consideration, it is envisaged that there will not be an adverse impact on road safety during the construction phase.

Environmental Impacts

Night Time Noise & Vibration

- 6.139 A full assessment of noise and vibration impacts has been undertaken at Chapter 8 of this Environmental Statement.
- 6.140 In respect of noise emitting from traffic movements linked with the construction of the proposed development, it is noted that construction will be limited to daylight hours for reasons of health and safety. Consequently, night time noise impacts resultant from the transportation of construction material will be nil.
- 6.141 In addition, the conclusions arising from Chapter 8 also indicate that vibration impacts resultant from the operational phase of development will be within acceptable thresholds and, given that construction traffic will be less or similar to operational phase traffic levels, vibration impacts resultant from construction phase traffic must also be within acceptable limits.

Severance & Delay

- 6.142 Assuming, as a worst-case, that 75% of all staff arrive or depart within a 60-minute period, with deliveries commencing in the succeeding hour, an increase of 158 additional car trips are assumed to enter onto the study area road network as a result of the construction phase.
- 6.143 A 50:50 distribution from the A38 will suggest that, of these, 79 trips will travel via Lee Mill, where severance is most likely. However, these trips will

occur outside of the times when the majority of pedestrian and cycle movements will occur on the adjoining networks, such that severance is considered to be within acceptable limits.

Accidents & Safety

- 6.144 The section of this report entitled 'Baseline Situation' considered the existing operation of the study area road network in respect of safety. Following a detailed review of the accident data obtained from the County Council, it was concluded that there was no pattern or cluster of accidents suggestive of a deficiency in the geometry of the highway that resulted in an unacceptable safety risk. Of particular importance was the conclusion that no accidents involving heavy goods vehicles occurred as a result of the geometry of the road network.
- 6.145 In view of the existing safety performance of the highway network, and considering the level of traffic increases calculated by this assessment at the section of this report entitled 'Construction Phase Trip Attraction', it is concluded that the development proposals will not cause any demonstrable worsening from baseline conditions.

Hazardous & Dangerous Loads

- 6.146 No hazardous or Dangerous loads are anticipated during the construction of the proposed development. However, it is worthy to note that abnormal loads will be transported outside of the busiest times on the highway network and with police escort if necessary.
- 6.147 Consequently, the impact of hazardous or dangerous loads will be within acceptable limits.

Dust and Dirt

- 6.148 The principal concerns of construction traffic in relation to dust and dirt can be considered to be materials falling off the back of delivery vehicles whilst on the road network, and dirt and detritus migrating onto the public highway from the construction site.
- 6.149 The contractor will deploy the following elements of mitigation to ensure that these effects can be minimised:
- provision of appropriate wheel cleaning facilities at the site exit;
 - a regular programme of road cleaning;
 - a regular programme of cleaning to traffic management cones, lights and signs; and
 - a requirement that all vehicles carrying granular materials to the site are sheeted when on the public highway.

- 6.150 These measures could be secured by an appropriately worded condition and, subject to these measures being implemented it is considered that there will not be an adverse impact on the road network caused by dust and dirt.

OPERATIONAL PHASE TRIP ATTRACTION

Introduction

6.151 This section outlines the methodology and results employed in the assessment of the potential trip attraction associated with the proposed development. It assumes a first-principles approach based on the design anticipated annual delivery of waste to the NERRC, average vehicle payloads and staff work patterns.

Development Trip Attraction

Heavy Goods Vehicle Trips

6.152 The calculation of heavy goods vehicle trip attractions is based on the figures presented earlier in this Chapter, under the section entitled 'Operational Details'. However, by way of summary, the proposed EfW will convert energy from an anticipated input of 303,000 tonnes of non-hazardous residual waste per annum. In addition this will be further inputs which will be required in order to optimise and manage the incineration process, and this equates to a need to delivery a further 20,000 tonnes of material per year.

6.153 Residual material will comprise IBA, APCR's and metals and these are assumed to be exported from the site for the purposes of this assessment. The total tonnage of material exported will be 89,000 tonnes per annum.

6.154 This assessment is based on a 250 day working year, save for deliveries from County Council operated HWRCs, which have been assumed to operate over 356 days a year. Typical vehicle payloads will vary dependant upon the type of waste being transported and its origin. The applicant has provided detailed figures showing the anticipated average payloads and these have incorporated within the first principles calculation of the development trip attraction.

6.155 A breakdown of the anticipated imports, exports and average vehicle loads generated by the proposed development is provided in the table below.

**Table 6/7
Calculated Trip Attraction**

Origin	Annual Tonnage	No of HGV Trips (Total) (one way)	No of HGV Trips (from west) (one way)
<i>Materials Imported</i>			
Plymouth City Council	106,000	64	64
Torbay Council	41,000	8	0
South Hams	44,000	9	4
Teignbridge	52,000	8	0
West Devon	12,000	3	3
Devon CC	18,000	5	0
Commercial / Industrial	78,000	26	18
Other Materials	35,000	10	2
<i>Materials Exported</i>			
IBA	67,000	13	13
APC Residue	10,000	2	0
Metals	12,000	2	0
Total		150	105

- 6.156 Review of the above calculation indicates that the proposed development will attract a total of 139 trips (278 two-way movements) per day, and this includes the foreseeable inputs and outputs associated with the operation of the EfW.
- 6.157 The assessment represents a worst-case scenario on the basis of the following:
- Waste inputs from Plymouth are assumed to be direct delivered, if waste transfer stations were retained in the area then the material will be bulked up prior to delivery, reducing the number of trips; and
 - Some residual waste materials are assumed to be exported from the site, whereas in reality they will be disposed of within the adjacent landfill involving no external road trips.

Timing of Goods Vehicles

- 6.158 The TRICS database has been used to investigate the pattern of RCV deliveries to landfill sites within the UK and the Republic of Ireland to establish the timing of RCV movements on the surrounding local highway network. The TRICS database does not hold any trip data on ERF sites; however, for the purposes of this assessment RCV trips to landfill sites serve an identical purpose. The TRICS output is included together with all traffic calculations within Appendix 6/10.
- 6.159 Bulk deliveries have been assumed to occur uniformly throughout the day and this assessment robustly assumes that 1/10th of all HGV traffic will arrive in each hour. This reflects the fact that some vehicles may arrive or depart the site outside of the average situation, thereby nominally increasing the traffic generation for that given period. However, this will occur exclusively to that hour and will not affect the daily trip attraction of the facility. In making

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an allowance of hourly variations, this assessment is able to assess the worst-case impacts.

6.160 Based upon the above assumptions, a typical daily profile of HGV two-way traffic movements has been generated and is shown below.

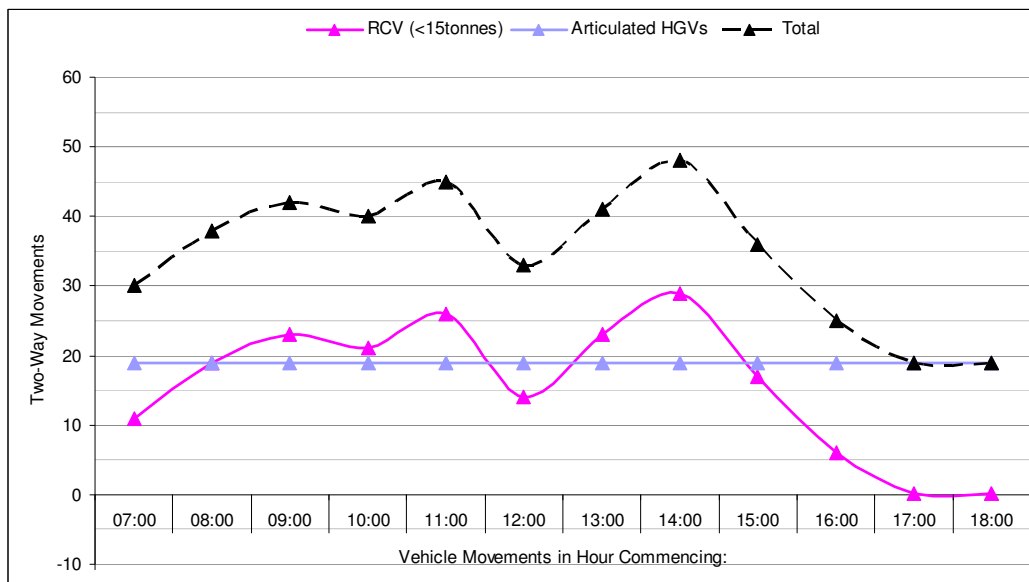
**Table 6/8
Hourly HGV Two-Way Movement Profile**

	Vehicle Movements in Hour Commencing:											
	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00
RCV (<15tonnes)	11	19	23	21	26	14	23	29	17	6	0	0
Articulated HGVs (>15 tonnes)	19	19	19	19	19	19	19	19	19	19	19	19
Total	30	38	42	40	45	33	41	48	36	25	19	19

*maximum likely movements per hour - based on 1/10th of total non-RCV movements

**number subject to statistical rounding

**Figure 6/2
Hourly Two-Way Movement Profile**



6.161 Based on the above hourly demand figures, the development will result in around 19 heavy goods vehicle trips (38 two-way movements) in the morning peak hour and this reduces to just 10 trips (20 two-way movements) in the evening peak period. A maximum of 47 two-way movements per hour is calculated in the intervening period. As a consequence, the majority of trips will occur outside of the busiest times on the road network.

Staff Vehicle Trips

- 6.162 The proposed development will employ, at most, 40 personnel, comprising a mix of day and shift workers. Day workers will begin work at 08:00 hours and leave at 16:00 hours. Shift workers will be split across three shifts commencing 07:00, 14:00 and 22:00 hours. Employees are expected to arrive in the 30 minute periods before and after their respective working hours. On this basis, the majority of staff movements will occur outside of the busiest times on the road network.
- 6.163 Nevertheless, for the purposes of providing an undeniably rigorous assessment, it is assumed that 30 staff will arrive and 10 depart in the morning peak hour. The reverse is assumed for the evening peak hour.

Visitor Centre Trips

- 6.164 For clarity, the proposed visitor centre will receive pre-arranged educational trips only and the facility will not, therefore, be continuously staffed. Visitors will be expected to arrive by coach and trips will therefore be infrequent, unpredictable and the trip attraction will be negligible. For these reasons, the traffic implications associated with the visitor centre are considered immaterial to this assessment and have been ignored for the purpose of simplicity.

Trip Distribution & Assignment

- 6.165 The distribution of heavy goods vehicle trips to the agreed study area road network has been undertaken on the basis of the origin of the trip and assuming that all heavy goods vehicles will travel via the A38 trunk road. Those number of trips predicted to be sourced from the west are shown in Table 6/7 above and based on this logic, the following distribution has been adopted:

Table 6/9
Hourly HGV Two-Way Movement Profile

Origin / Destination	Municipal Waste Distribution*		Commercial & Industrial Waste Distribution*		Other Waste Inputs (HGV)	All Outputs (HGV)	Staff
	Articulated	RCVs	Articulated	RCVs	Articulated	Articulated	Car
A38 East	84%	11%	100%	0%	80%	28%	50%
A38 West	16%	89%	0%	100%	20%	72%	50%

- 6.166 The resultant development trips, having been assigned to the highway network as per the above distribution methodology, are shown for each peak period on the network flow diagrams contained at Appendix 6/11.

Net Development Traffic Flows

- 6.167 The calculated development trips have been combined with the baseline traffic flows for the opening and horizon year scenarios in order to provide an indication of traffic flows with the development in place and these are shown on the network flow diagrams contained at Appendix 6/12.

IMPACTS DURING OPERATIONAL PHASE

Introduction

6.168 This section of the Environmental Statement considers the potential impacts that might arise as a consequence of the trip attractions calculated within the previous section of the report. It considers impacts in respect of the daily traffic flow increase, the change in the capacity performance of the highway network and the need for a full environmental assessment is considered against the thresholds given by the Environmental Assessment of Road Traffic (IEA, 1993).

Traffic Flow Impacts

6.169 The daily trip attraction of the proposed development, as calculated above, has been considered against the baseline traffic flows for the principle links within the agreed study area road network. The results are presented as percentage increases within Table 6/10 below.

Table 6/10
AADT Traffic Flow Impacts

Baseline Flows	2009 (Existing Year)			2014 (Opening Year)			2019 (Horizon Year)		
	Lights	HGVs	Total	Lights	HGVs	Total	Lights	HGVs	Total
A38 Eastbound Off-Slip	4,846	368	4,821	5,467	399	5,866	5,963	425	6,387
Western Road (West)	6,440	611	7,104	7,264	664	7,928	7,923	706	8,630
Western Road (East)	10,818	877	11,758	12,203	953	13,156	13,310	1,014	14,324
Beech Road	12,751	820	13,608	14,383	891	15,274	15,688	948	16,636
A38 Eastbound On-Slip	3,205	236	3,455	3,616	256	3,872	3,944	272	4,216
C194 (Underpass)	5,875	639	6,576	6,627	694	7,321	7,228	739	7,967
A38 Westbound Off-Slip	1,980	248	2,254	2,233	270	2,503	2,436	287	2,723
A38 Westbound On-Slip	4,567	212	4,779	5,152	230	5,382	5,620	245	5,864
Access to Sewage Works	11	33	49	12	35	47	13	38	51
Access to Quarry / Site	41	24	69	46	27	72	50	28	78
Base + Development Flows									
A38 Eastbound Off-Slip				5,487	503	5,990	5,983	529	6,512
Western Road (West)				7,284	768	8,053	7,943	810	8,754
Western Road (East)				12,223	998	13,221	13,330	1,058	14,388
Beech Road				14,383	891	15,274	15,688	948	16,636
A38 Eastbound On-Slip				3,636	301	3,936	3,964	317	4,281
C194 (Underpass)			<i>Not Applicable</i>	6,667	843	7,510	7,268	887	8,156
A38 Westbound Off-Slip				2,253	314	2,568	2,456	331	2,787
A38 Westbound On-Slip				5,172	334	5,507	5,640	349	5,989
Access to Water Works				12	35	47	13	38	51
Access to Quarry / Site				126	324	450	130	326	456

**Table 6/10 (cont.)
AADT Traffic Flow Impacts**

Resultant Traffic Impact	2009 (Existing Year)			2014 (Opening Year)			2019 (Horizon Year)		
	Lights	HGVs	Total	Lights	HGVs	Total	Lights	HGVs	Total
A38 Eastbound Off-Slip				0.37%	26.1%	2.1%	0.3%	24.5%	2.0%
Western Road (West)				0.28%	15.7%	1.6%	0.3%	14.7%	1.4%
Western Road (East)				0.16%	4.7%	0.5%	0.2%	4.3%	0.4%
Beech Road				0.00%	0.0%	0.0%	0.0%	0.0%	0.0%
A38 Eastbound On-Slip				0.55%	17.6%	1.7%	0.5%	16.5%	1.5%
C194 (Underpass)	<i>Not Applicable</i>			0.60%	21.5%	2.6%	0.6%	20.0%	2.4%
A38 Westbound Off-Slip				0.90%	16.3%	2.6%	0.8%	15.3%	2.4%
A38 Westbound On-Slip				0.39%	45.2%	2.3%	0.4%	42.4%	2.1%
Access to Sewage Works				0.00%	0.0%	0.0%	0.0%	0.0%	0.0%
Access to Quarry / Site				173.91%	1100.0%	525.0%	160.0%	1064.3%	484.6%

6.170 The above analysis indicates that, over the course of a typical day, the proposed development will result in a worst-case traffic increase of just 0.9% in light traffic movements and 45.2% in heavy goods vehicle movements. As a total, this equates to a maximum increase of just 2.6% across all vehicle types. Particular noteworthiness is the traffic impact that has been calculated to occur through Lee Mill, of no more than a +1.6% total increase.

6.171 This level of traffic increase will normally be accounted for within day-to-day traffic flow variations and is unlikely to result in any discernable worsening of the operation of the highway network. Nevertheless, for the purposes of providing a rigorous assessment, the impact of the calculated development traffic has also been considered in respect of junction capacity, as detailed below.

Capacity Impacts

C194 / Proposed New Haul Road

6.172 The proposed junction incorporating the proposed haul road and the C194 has been assessed for capacity using PICADY. The important aspect of the junction's capacity is whether traffic travelling from the C194 onto the haul road will block back onto the main carriageway of the C194, which will be unacceptable in safety terms. Consequently, assessment of the southbound give-way of the junction has been assessed. The results are provided at Appendix 6/13. However, a summary of the results are provided within Table 6/11 below.

Table 6/11
Proposed Haul Road / C194 – AM Peak ‘With Development’

Movement	2014 Baseline Traffic Flows		2019 Baseline Traffic Flows	
	Max. RFC	Max. Q	Max. RFC	Max. Q
AM Peak	0.130	<1	0.130	<1
PM Peak	0.067	<1	0.068	<1

6.173 Inspection of the above results indicates that the proposed junction will operate well within capacity thresholds and that queuing will never be so great as to block back onto the carriageway of the C194. Consequently, the above results indicate, with confidence, that the proposed junction will be acceptable in highway capacity terms.

C194 / A38 Westbound Exit Slip

6.174 The baseline junction capacity model for the C194 / A38 westbound exit slip has been adjusted with traffic flows inclusive of development for both the opening year (2014) and horizon year (2019) scenarios. The results are provided at Appendix 6/14. However, a summary of the results are provided within Table 6/12 below.

Table 6/12
C194/A38 Westbound Exit Slip – ‘With Development’

	2014 Baseline Traffic Flows		2019 Baseline Traffic Flows	
	Max. RFC	Max. Q	Max. RFC	Max. Q
AM Peak	0.526	1	0.592	1
PM Peak	0.779	3	0.929	9

6.175 The above results suggest that the junction will broadly operate within capacity for all peak hours, having a worst-case RFC of 0.929. Considering change against the baseline performance of the junction, which was 0.903, the impact of the development traffic is concluded to be indiscernibly small and within acceptable thresholds.

6.176 In respect of queues on the exit slip of the A38, the model calculates a worst case increase of just 2 additional vehicles which is again considered to be acceptable.

C194 / Western Road

- 6.177 The capacity assessment of the C194 / Western Road junction has been updated with traffic flows incorporating development traffic. The results of the PICADY assessment for the existing and base year scenarios are provided at Appendix 6/15. However, a detailed summary of the results are provided within Tables 6/13 and 6/14 below.

**Table 6/13
C194 / Western Road – AM Peak ‘With Development’**

Movement	2014 Baseline Traffic Flows		2019 Baseline Traffic Flows	
	Max. RFC	Max. Q	Max. RFC	Max. Q
C194 to Western Road (West)	0.123	<1	0.142	<1
C194 to Western Road (East)	0.412	<1	0.469	1
Western Road to C194	0.419	1	0.478	2

**Table 6/14
C194 / Western Road – PM Peak ‘With Development’**

Movement	2014 Baseline Traffic Flows		2019 Baseline Traffic Flows	
	Max. RFC	Max. Q	Max. RFC	Max. Q
C194 to Western Road (West)	0.108	<1	0.156	<1
C194 to Western Road (East)	0.630	2	0.738	3
Western Road to C194	0.392	2	0.470	2

- 6.178 Consideration of the above results indicates that the existing junction will operate within acceptable thresholds of capacity in all peak periods, under all scenarios, having a maximum RFC of just 0.738 in the evening peak of 2019. Queues are calculated to comprise just 3 vehicles. Consequently, it is concluded that the proposed development could be accommodated within the existing junction without detriment to its operation.

Western Road / Beech Road

- 6.179 The operation of Western Road / Beech Road junction has been assessed with the addition of development traffic in both the opening year and horizon year and the results are provided at Appendix 6/16. A detailed summary of the results is, however, provided within Tables 6/15 and 6/16 below.

Table 6/15
Western Road / Beech Road – AM Peak ‘With Development’

Movement	2014 Base + Dev't Traffic Flows Queuing Delay (mins/veh)	2019 Base + Dev't Traffic Flows Queuing Delay (mins/veh)
Beech Road to A38 Entry Slip	8.82	11.75
Beech Road to Western Road	6.55	9.00

Table 6/16
Western Road / Beech Road – PM Peak ‘With Development’

Movement	2014 Base + Dev't Traffic Flows Queuing Delay (mins/veh)	2019 Base + Dev't Traffic Flows Queuing Delay (mins/veh)
Beech Road to A38 Entry Slip	5.39	7.92
Beech Road to Western Road	4.44	6.92

6.180 Comparison of the above queuing delays against baseline equivalents indicates that the impact of the proposed development traffic will be just +43 seconds per vehicle which, it is considered, will be indiscernible to existing users of the junction. Consequently, the operation of the junction will not be will be sufficiently accommodated within the existing arrangement.

Environmental Impacts

6.181 The guidelines for the Environmental Assessment of Road Traffic (IEA, 1993) suggest two broad rules to define where there will be a need for an environmental impact analysis. These are as follows:-

- Highway links where traffic flows will increase by more than 30% (or where the number of HGVs will increase by more than 30%); or
- Sensitive areas where traffic flows will increase by 10% or more.

6.182 Based on the traffic flow increases presented within the previous section of this Chapter, traffic impacts will only marginally exceed the 30% threshold on the westbound on slip road, where there are no significant sensitive receptors. The section of Western Road through Lee Mill will experience heavy goods vehicle increases which exceed the 10% threshold and, given the presence of sensitive receptors on this link, an environmental assessment of the predicted impact has been undertaken.

6.183 Guidance on environmental impact assessment is given within the Environmental Assessment of Road Traffic (IEA, 1993) , which recommends that the assessment should identify environmental impacts arising from

changes in traffic levels on affected groups or locations that may be sensitive to changes in traffic conditions. These are outlined in Table 6/17 below.

Table 6/17
Sensitive Receptors from IEA Guidance

Impacts from changes in traffic levels	Affected parties
Night time noise	People at home
Vibration	People in work places
Driver severance & delay	Sensitive groups including children, elderly and disabled
Pedestrian severance and delay	Sensitive locations, e.g. hospitals, churches, schools, historic buildings
Accidents & safety	People walking
Hazardous & dangerous loads	People cycling
Dust and dirt	Open spaces, recreational sites, shopping areas Sites of ecological / nature conservation value Sites of tourist / visitor attraction

Night Time Noise & Vibration

- 6.184 A full assessment of noise and vibration impacts has been undertaken at Section 8 of this Environmental Statement.
- 6.185 In respect of noise emitting from traffic movements linked with the proposed development, it is noted that the Facility will be a continuous operation, although the transportation of material to or from the Facility will be restricted to between 07:00 and 19:00 hours Monday to Friday; and 07:00 to 13:00 hours Saturday. Nominal traffic movements will occur on a Sundays and Bank Holidays.
- 6.186 Consequently, night time noise impacts resultant from the transportation of material will be nil. The conclusions arising from Section 8 also indicate that vibration impacts will be within acceptable thresholds.
- 6.187 It is also noteworthy that the mitigation measures outlined in the subsequent section will serve to control vehicle speeds and, in so doing, help to minimise noise and vibrations arising from all traffic travelling along this section of Western Road.

Severance & Delay

- 6.188 Using the traffic increases and distributions calculated previously within this report, the worst-case increase in traffic travelling through Lee Mill will be around 24 vehicles within the busiest times on the highway network. This equates to an increase of just 1 additional vehicle every 2 minutes, which will be indiscernible and will not materially worsen opportunities to travel between land uses where journeys involve crossing Western Road.

- 6.189 Nevertheless, severance in the baseline scenarios will be less than ideal and any mitigation measures will provide an improvement that goes beyond offsetting the development impacts, to afford a wider community benefit.

Accidents & Safety

- 6.190 The section of this report entitled 'Baseline Situation' considered the existing operation of the study area road network in respect of safety. Following a detailed review of the accident data obtained from the County Council, it was concluded that there was no pattern or cluster of accidents suggestive of a deficiency in the geometry of the highway that resulted in an unacceptable safety risk. Of particular importance was the conclusion that no accidents involving heavy goods vehicles occurred as a result of the geometry of the road network.
- 6.191 An assessment of the development trip attraction potential has been undertaken at the section of this report entitled 'Operational Phase Trip Attraction' and this has been considered at the previous section of this report in the context of baseline traffic flows. This indicated that total traffic increases will be no more than 0.4% for light vehicles (i.e. cars) and 14.6% for heavy goods vehicles. This equates to an increase of just 1.3% across the entire traffic composition.
- 6.192 In view of the existing safety performance of the highway network, and considering the level of traffic increases calculated by this assessment, it is concluded that the development proposals will not cause any demonstrable worsening from baseline conditions.
- 6.193 Nevertheless, the cumulative impact of all heavy goods vehicle movements travelling along Western Road, as it passes through the built up area of Lee Mill, is such that safety improvements will be beneficial. Consequently, the applicant proposes improvements to Western Road

Hazardous & Dangerous Loads

- 6.194 Hazardous loads will arise as a result for the need to export Air Pollution Control Residues from the Facility. These account for just 2 trips (4 two-way movements) per day. Consequently, potential exposure is limited.
- 6.195 All hazardous loads will be transported in accordance with the 'Carriage of Dangerous Goods Regulations 2009', or as updated. Furthermore, the safety risks of the study area road network have been studied as part of this assessment, and the conclusions indicate that the safety performance of the highway network will be within acceptable limits.
- 6.196 Consequently, exposure to hazardous loads will be limited and transportation will be undertaken over a safe road network and in compliance with current regulations. On this basis, the risks involved with the transportation of Hazardous Loads will be within acceptable limits.

Dust & Dirt

- 6.197 Dust and dirt impacts arising from the transportation of material to and from the site are likely to be minimal on this section of Western Road given that the potential for dust and dirt to occur will be from detritus being blown from the vehicle. However, through appropriate management systems, which includes the sheeting of articulated bulkers. Refuse collection vehicles are fully enclosed. Consequently, impacts from dust and dirt will be within acceptable limits.

MITIGATION OF OPERATIONAL PHASE IMPACTS

Off-Site Highway Improvements

Introduction

- 6.198 Vehicular access to the application site from the A38 trunk road has been considered in extensive detail throughout the environmental assessment process and the incorporated highway improvements represent what has been concluded to be both environmentally sensitive and technically deliverable.
- 6.199 This section summarises each of the considered access options and the evaluation processes that followed. The resultant highway improvements that are incorporated within the development proposals are then outlined.

Option Testing Summary

- 6.200 The applicant has been through extensive consideration of options to improve the eastbound exit from the A38, which currently runs through the settlement of Lee Mill, the road known locally as Western Road.
- 6.201 During consultation stages with the Highways Agency and Devon County Council, both parties confirmed that, subject to detailed review, the traffic impacts associated with the development were below the relevant thresholds and thereby by definition the existing road infrastructure is adequate with no need for any off site mitigation.
- 6.202 On this basis, the applicant commenced public consultation, following which it became clear that options to improve the A38 eastbound exit should be considered. The applicant therefore undertook detailed assessment of the following alternatives:
- provision of a new full standard slip road provided to the east of Lee Mill;
 - provision of a new County road to run south of Lee Mill and north of the A38.
- 6.203 The applicant undertook detailed design work on the above options, including detailed consultation with Devon CC and the HA and also approaches were made to the relevant land owners with a view to establishing the appropriate land deals. A copy of the potential alternatives is contained at Appendix 6/17. Following this work, it has become apparent that the affected landowners were not prepared to sell land required for either of these options. Furthermore, it was evaluated that, whilst providing a benefit to some Lee Mill residents, both proposals will have an adverse effect on businesses currently served by established passing trade on Western Road, which could not be fully mitigated by appropriate signage.

- 6.204 The applicant is therefore unable to pursue these proposals as part of the planning application.
- 6.205 As a further possible solution to bypassing Western Road, the applicant considered introducing a routing agreement which will enforce all traffic accessing the proposed development from the west to exit the A38 at the next junction east at Ivybridge, and then come back west on the A38 to exit at the Lee Mill junction. This option was discussed with the HA and Devon CC, who objected to this proposal, as they considered it will be difficult to enforce and will only move traffic to another junction, which itself had capacity and layout issues. This option was therefore discounted.

Proposed Option

- 6.206 Further discussions were held with the HA and Devon CC with regard to other potential off site mitigation measures which could be instigated within the available highway boundary along Western Road, which is the single exit route for eastbound traffic leaving the A38. These proposals have been brought forward as Option 10, and are included as part of the development proposals as off site works. Details for Option 10 are shown at Drawing 6/5.
- 6.207 Both the HA and Devon CC have accepted that the development proposals would not have a material impact on Western Road so as to require more substantial highway improvements. The HA stated that Option 10 was its preferred solution, in comparison to other options which required substantial works to be undertaken on the trunk road.
- 6.208 The principal behind Option 10 is to reinforce the existing traffic calming that is present on Western Road, and to improve, where possible, facilities for pedestrians. Outline proposals have been presented to the local residents of Lee Mill and the applicant has committed to being flexible over the proposed solutions so as to take on board constructive local requirements.
- 6.209 Under the current proposal, Western Road will be marginally narrowed where it passes Western Cottages and the Post Office, to provide a carriageway width of minimum 6m, thus enabling a 1.8m wide footway to be established on the southern side of the road. It is envisaged that existing roadside parking in this location will be maintained, which would leave the remainder of the road width as a single lane section, thus maintaining the existing situation.
- 6.210 Existing vehicle activated speed limit signage will be enhanced with larger signs, located on both sides of the road and set at a lower speed than existing.
- 6.211 In addition to these elements, the existing road surface will be planed off where required and overlaid with a thin wearing course material (stone mastic asphalt or similar) to improve the running surface, and existing road markings associated with the traffic calming will be replaced and reinforced where required.

Staff Travel Plan

- 6.212 In order to further mitigate the already negligible traffic impact of the proposed development during the operational phase, a travel plan will be prepared which will be aimed at encouraging staff to travel to and from the development using sustainable non-car travel modes. In advance of a full travel plan being prepared, an outline plan has been prepared as part of the planning submission and this is contained at Appendix 6/18.

RESIDUAL IMPACT

6.213 Taking into account all the factors assessed in this report and the mitigation measures outlined above, a final analysis of the impacts resulting from the development proposals has been undertaken and is summarised in the table below.

Table 6/18
Summary of Environmental Impact

Potential Impact	Impact Duration	Significance	Mitigation	Residual Impact
Highway and Junction Capacity	Permanent	Minor Adverse	New access	Minor Beneficial
Driver Delay	Permanent	Minor Adverse	N/A	Minor Adverse
Road Safety	Permanent	Minor Adverse	Environmental enhancements to reduce speeds along New Park Road, through Lee Mill	Minor Beneficial
Pedestrian / Cyclist Amenity	Permanent	No Impact	N/A	No Impact
Detritus on Highway Network	Permanent	Moderate	Good management practice	Insignificant
Construction Impacts	Temporary	Moderate Adverse	Vehicle routing & travel plan arrangements	Minor Adverse
Public Rights of Way	Permanent	No Impact	N/A	No Impact

6.214 Overall, it is considered that the development proposals will have an insignificant impact in traffic and transport terms.

SUMMARY & CONCLUSIONS

Summary

6.215 This Chapter has been prepared to assess the traffic and transport impacts of the proposed development at New England Quarry, near Ivybridge, Devon. The assessment is summarised as follows.

- The proposed development comprises a 'Resource Recovery Centre' (NERRC) comprising an 'Energy from Waste facility', recycling centre and landfill site.
- The NERRC will attract approximately 303,000 tonnes of waste per annum, with 28,000 tonnes being unsuitable for incineration within the EfW. For the purposes of this assessment, it has been assumed 89,000 tonnes of material will be exported from the facility via the public highway network in heavy goods vehicles.
- Following extensive review of the public road network, and in consideration of the Waste Local Plan allocation of the site, the existing means of access to the application site has been determined as inappropriate. Consequently, the proposals include for access to be taken via a new haul road which will connect with the C194 south of Lee Mill. The arrangement onto the C194 was originally suggested by the Highways Agency and has undergone independent road safety audit, demonstrating that it will accord with current safety standards.
- The construction of the facility is anticipated to occur over a 2 year period commencing in late 2011. This assessment has considered the likely environmental impacts that might arise as a result of the movement of construction personnel and materials, and it has been confirmed that these temporary environmental impacts will be within acceptable limits, subject to a construction phase travel plan, a framework for which accompanies this assessment.
- The trip attraction of the proposed facility has been undertaken on a first principles basis and trips have been distributed as per the applicant's model of waste arisings. The figures have been augmented to allow for potential hourly variations and staff trips have been assumed within the assessed peak hour periods, although this will not be case in reality.
- Cumulative impacts have been considered in the context of making allowance for background traffic growth using TEMPRO analysis, and consideration has been given to the implications of the new community at Sherford as well as a recently permitted development of an Anaerobic Digestion Plant northwest of Lee Mill.
- Based on the calculated trip attraction, the capacity of the proposed access arrangements onto the C194 has been assessed using industry standard modelling tools and the results indicate that the junction will be well within thresholds of capacity, in all scenarios.

- The capacity of other junctions within the study area road network have also been assessed and it has been concluded that the junctions either operate under capacity with the addition of development traffic or, where the junction already operates beyond capacity, that development impacts are well within the realms of being immaterial and mitigation will not therefore be justified.
- Environmental impacts associated with the operational phase of development have been assessed and it was concluded that the proposed development will be acceptable.
- Extensive consideration of potential mitigation measures has been undertaken throughout the ES process. However, having determined that larger mitigation schemes were unfeasible, for reasons of land availability, a scheme has been devised to mitigate the impact of all traffic travelling along Western Road, through Lee Mill. This comprises a scheme to reinforce the existing traffic calming provided, incorporating carriageway narrowing and resurfacing, footpath widening and variable message signs.
- As part of the mitigation, a staff Travel Plan is also proposed in order to reduce the already negligible traffic impacts associated with the operational phase of development.

Conclusions

- 6.216 On balance, and in view of the above, it is considered that the development proposals will be acceptable in traffic and transport terms.