

NEED & ALTERNATIVES 4

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Appendix 4-1 Alternative Site Assessment



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INTRODUCTION

- 4.1 It is customary in undertaking an Environmental Impact Assessment (EIA), and in preparing an Environmental Statement (ES) in support of a planning application, to consider the need for the development and to include a review of the alternatives that have been considered. It is not considered to be the role of the ES to demonstrate that the best site has been selected, rather it is to consider whether the proposed development can take place without any significant environmental effects or that if there are any significant effects, that cannot be mitigated, then to consider whether there are any more suitable alternatives for the proposed development.
- 4.2 This section considers the proposed Resource Recovery Centre (RRC) within the context of the need for the development and the alternative sites that have been considered. A review of the iterative design measures is also included.

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- 4.3 PPS 10 – Planning for Sustainable Waste Management confirms at paragraph 22 that Development Plans form the framework within which decisions for development are taken. When proposals are consistent with an up to date Development Plan, applicants should not be required to demonstrate a quantitative or market need for their proposals.
- 4.4 The Devon Waste Local Plan (DWLP) was adopted in 2006 and is regarded as an up to date Development Plan. The New England site benefits from an allocation within this Plan as a site for strategic waste management facilities. The relevant discussion (including an extract from the plan) is set out in section 5 and concludes that the principle of the scheme accords fully with the prevailing development plan.
- 4.5 Since the adoption of the DWLP the Draft Revised Regional Spatial Strategy for the South West (RSS) has been published and Policy W1 requires waste planning authorities to make provision for a network of strategic and local waste management facilities to provide the capacity to meet the indicative allocations for their area. The indicative allocations for Devon (including Plymouth and Torbay) are set out in Table 4.1 below. Although the RSS is not an Adopted Plan, it gives a strong indication of the direction of future policy.

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Table 4.1 – Waste Management Capacities for Devon in 2020 (000s tpa)

	Municipal	Industrial and Commercial
Minimum source separated	410	480-520
Secondary Treatment	500	240-260
Minimum Landfill	150	190-200

Municipal

- 4.6 In respect of municipal waste arisings the South West Devon Waste Partnership has undertaken extensive modelling work as the basis for the procurement process. The Partnership has established that at the end of the contract period (i.e. 2039) there will be a requirement to manage some 203,000 tonnes of residual waste per annum to serve the partnership area (SW Devon (South Hams, Teignbridge and West Devon), Plymouth and Torbay)¹.
- 4.7 The proposed procurement exercise is being advanced on the basis that the EfW solution will provide the single location for treating municipal residual waste. It is acknowledged that all treatment technologies still require an element of landfill to deal with wastes that are inappropriate for combustion. The advantage of the New England site in this respect is that the application proposes an on-site non-hazardous landfill facility to ensure that sustainable waste management objectives can be achieved on a single site.
- 4.8 The differential between the anticipated municipal arisings (up to 203,000 tpa) and the capacity of the facility (275,000 tpa) will ensure that the facility will be able to accommodate a proportion of South West Devon's Commercial and Industrial wastes. The capacity of the EfW is based on predicted recycling rates for the South West Devon area over a 25 year period. In the event that recycling rates increase, any capacity will be made up of additional residual Commercial and Industrial Waste.

Commercial & Industrial

- 4.9 The DWLP makes no specific provision for recovery facilities for the commercial and industrial waste stream as it assumes that technologies such as EfW will not play a significant role in the management of this waste stream due to the short term nature of the contracts and the diffuse nature of arisings. However, with the proposed increase in landfill tax and targets for diverting C&I waste it is now apparent that EfW has a role to play in diverting

¹ SWDWP ISDS Documents Appendix 10: 6th November 2009
New England RRC

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the C&I waste stream from landfill and that the waste management industry are developing recovery facilities to manage this waste stream. Based on figures provided in the Devon Annual Monitoring Report 2007/8 it is established that Devon (including Plymouth and Torbay) generates 1,132,000 tonnes of industrial and commercial waste a year.

- 4.10 Of this 457,000 tonnes was recycled and 434,000 tonnes was landfilled, leaving a balance of 241,000 tonnes which will have been managed by other means such as biological and thermal treatment and transfer, which is classed as recovery in the RSS. However given the current low level of thermal and biological treatment capacity it is likely that the majority of this other waste was managed by waste transfer and as a result could still be landfilled outside of Devon. A comparison of the existing situation and the 2020 regional apportionments is provided in Table 4-2 below, which identifies a capacity gap for the provision of recovery facilities for the management of industrial and commercial waste.

Table 4.2 – Comparison of Existing Commercial and Industrial Waste Arisings with the Regional Apportionments for 2020 (tonnes)

		Recycled	Recovery	Landfill
2007/8	C&I	457,000	241,000	434,000
2020 Regional Apportionment		480-520,000	430-460,000	190-200,000
Capacity Gap		23-63,000 (+)	189 – 219,000 (+)	234-244,000 (-)

- 4.11 The capacity gap for C&I waste recovery capacity of up to 219,000 tpa is based on the existing 241,000 tonnes being totally diverted from landfill, which as discussed above, is unlikely to be the case. Based on a conservative estimate that 50% of this figure is currently being exported from Devon for treatment or disposal would indicate that there is a further 120,000 tpa of C&I waste that could be managed within Devon if an appropriate facility were to be provided. This gives an estimated total C&I recovery capacity gap of between 309,000 and 339,000 tpa.
- 4.12 This indicates that even if a facility is provided to meet the municipal recovery needs of the South West Devon Waste Partnership there will still remain a need for Devon, Torbay and Plymouth to provide substantial additional recovery capacity to meet their regional apportionments for C&I waste in the emerging RSS. A significant proportion of this can be provided by the Centre proposed at New England.

ALTERNATIVE SITES

- 4.13 The Devon Waste Local Plan (DWLP) provides a comprehensive strategy for the provision of waste management facilities to meet their needs up to the period 2015/16 and allocates a number of sites to meet that need. Plymouth has also been through a similar, more recent, exercise in respect of their Waste development plan document. The result of which is that there are two

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up to date Development Plans for waste management development with site allocations for strategic waste management facilities.

- 4.14 PPS 10 – Planning for Sustainable Waste Management confirms at paragraph 22 that Development Plans form the framework within which decisions for development are taken and they are there to provide certainty to the waste management industry and the local community on where waste developments are likely to take place. The Devon allocations are based on a comprehensive site selection exercise which has been tested at inquiry and a summary of which is provided in Appendix 2 of the DWLP. This confirms that a number of sites have already been considered through the development plan process and not allocated for waste development.
- 4.15 The DWLP makes clear that its allocations are to meet the needs of Devon and that waste arisings within Plymouth should be dealt with within Plymouth unless a suitable site is not forthcoming. However the proximity of the two authorities and the current joint working arrangements for municipal waste indicate that the principle of waste movements between the authorities is an accepted one and likely to continue. Indeed based upon the needs assessment it is clear that even if a recovery facility to deal with municipal waste is provided within Plymouth, there will remain a need for a similar facility to deal with commercial and industrial arisings.
- 4.16 There are no sites allocated for waste management development in the Torbay area, however, consideration has been given to sites within the Authority that are currently proposed for B2 use.
- 4.17 Another key element of PPS10 and the development plan system is deliverability. PPS10 advises that unrealistic assumptions on the prospects for the development of sites having regard to ownership constraints should be avoided and PPS12, paragraphs 4.28 and 4.29, confirm that there is no point in proceeding with strategies which cannot be delivered as a result of failure to obtain the agreement of key delivery agencies. The waste management industry is identified as one such delivery agency. Sites must be deliverable within the timescales required for the proposed development. Having regard to the timescales required to meet landfill diversion targets it is considered that only sites already under the control of the waste management industry or local authorities and that had already demonstrated their acceptability for waste management development through the development plan process are deliverable within the timescales required.
- 4.18 Using the requirements of PPS10 as a basis, a site assessment study has been undertaken to identify the potential locations for a sub-regional Energy from Waste Facility capable of accommodating a throughput of some 275,000 tonnes per annum. In accordance with the prevailing South West Devon Partnership Procurement process, the site search has been undertaken within the administrative boundaries of Plymouth, Torbay and the local authorities that make up South West Devon. The full Alternative Site Assessment report is included as Appendix 4-1.

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- 4.19 A search of the authorities identified eleven sites that met the basic threshold criteria of being in excess of 5ha. in size, relatively well-located to major transport routes, and seemingly available for waste and/or B2-type development.
- 4.20 The matrix scoring system applied to the sites was based on specific distances from the site boundary to opportunities (e.g. major road network) and constraints (e.g. nature conservation designations). In addition, a heavy weighting was placed on sites identified as being brownfield land, in accordance with prevailing national policy, and those with the potential to realise Combined Heat and Power usage.
- 4.21 The overview of the sites that came through the initial site selection process has considered their suitability in more specific environmental, locational and efficiency terms. These four sites are those that are being taken forward for further consideration by the Partnership: Ernesettle, New England, and the two sites in Devonport: North Yard and South Yard.
- 4.22 In broad terms, the Devonport sites were considered highly on the basis that they are brownfield sites, but their absence from an Adopted Development Plan, and their proximity to nationally designated sites of nature conservation interest detracted from their suitability. By contrast, the Ernesettle site is a greenfield site with a number of constraints in respect of amenity and the built and natural environment. All three sites are located at the extreme western end of the study area.
- 4.23 The land at New England Quarry scored highly on the basis that it is located on previously disturbed land, is central within South West Devon, and adjacent to the A38. It is recognised that there are a number of environmental issues and considerations that need to be taken into account, but on the basis of the exercise undertaken, the New England site has been adjudged to be most favourable for the location of an integrated waste management facility.

SITE LAYOUT AND DESIGN ALTERNATIVES

- 4.24 The issue of the design of the building, and the associated layout issues, were identified at an early stage by Viridor as being fundamental to the EIA process. The Design Statement, included at Volume 1 of the application, considers many of the issues associated with this part of the process. This approach has been based on a three-staged process of design and amelioration:.

Key operational requirements including:

- movement requirements of large 16.5m long articulated lorries including analysis of gradients and turning circles and the provision of a peripheral emergency route;
- access road arrangements;

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- the location of the offices and visitor's centre;
- potential flexibility in the context of future waste management aspirations and obligations;
- location of the air cooled condensers;
- incorporation of surface water attenuation measures;
- the relationship between the chimney and the building;
- concern from the adjoining oxygen plant operators regarding proximity to their plant; and
- the significance of landscaping proposals at this location.
- discrete staff and visitor parking close to the entry point to the offices and visitor centre;
- gatehouse and weighbridge and queuing availability off the public highway; and
- the provision of a secure site.

Amelioration of potential environmental impacts at the site, including:

- minimisation of land take, excavation and fill requirements of the EfW facility and associated Infrastructure; and
- sustainable construction techniques

Amelioration of potential impacts on the landscape and visual amenity of the site and area, including:

- placement of all EfW plant components inside the building's shell achieving a simpler, unified design;
- the design of the building in keeping with the form and landscape of the local area;
- the use of high quality construction and materials for a less industrial appearance;
- the minimisation of the stack diameter to reduce their impact on the area; and
- where practicable, the incorporation of ground profiling using materials arising from excavations at the site to enclose the EfW and site circulation routes.

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- 4.25 The resulting layout has been heavily influenced, at a local level, by the current restriction on public access to the site itself. The nature of the proposed development is such that, notwithstanding the Visitor Centre, the site is not intended to be welcoming to, or to encourage casual visitors. The operations, the high number of waste vehicle movements, and the type of plant enclosed within the building means that high levels of security must be maintained at the expense of uninvited public access.
- 4.26 The resultant design was presented to the South West Design Review Panel in July 2009. The Panel welcomed the opportunity to review this scheme and recognised the environmental benefits of the proposal and considered the presentation to be an acceptable response to the site and the brief, with minor revisions necessary.
- 4.27 In response to the issues raised, the design team has undertaken further study of the design (reviewed in the Design and Access Statement) and amended the façade treatment.
- 4.28 Further amendments to the design and layout have been incorporated as a result of the public consultation exercise undertaken during the second half of 2009 and described in the Statement of Community Involvement included at Appendix One of the planning application. Revisions have included the lowering of the roof height of the facility by 5m, additional consideration of the aircraft warning lights to avoid unnecessary visual impact, and consideration of the use of site lighting. In addition, extensive reviews of access options at the A38 junction have been undertaken as described below.

ACCESS ALTERNATIVES

- 4.29 The design of the facility, the layout of the site, and all scoping issues have been considered in the context of road-only transportation of waste to the site. It is considered that the location of the site in the context of the road network, and the geographical nature of South-West Devon, is such that road transport is the only viable option for delivering waste to the site.
- 4.30 The most extensive consideration of alternatives has been in respect of the use of the A38 and the potential to secure access to the site in the context of technical solutions and deliverability in terms of ownership. This process is reviewed in greater detail in Section 6 of the ES: the table below outlines the Options 1 to 10 that have been considered and discounted for a number of reasons.

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Option	Details	Consideration	Conclusion
1	<p>Full standard slip road at Lee Mill.</p> <p>New slip road immediately east of the existing diverge taper, forming a new slip road to the south of the properties fronting the existing slip road.</p>	<p>Meets technical requirements</p> <p>Requires extensive land take to the rear of a number of properties.</p> <p>Impact on amenity of properties within Lee Mill.</p>	<p>Extensive land take required and unavailable.</p>
2	<p>Compact design slip road to east of Lee Mill (roundabout solution).</p> <p>Slip road exit to an adjacent roundabout, thus permitting full movements.</p> <p>Roundabout junction could be replaced by free flow arrangement</p>	<p>Improvement to the amenity of properties which currently front the existing slip road.</p> <p>Improved access to the Tesco supermarket</p> <p>Does meet technical requirements</p> <p>Negotiations with a single landowner.</p>	<p>Solution acceptable to Highways Agency (HA).</p>
3	<p>Variation on Option 2.</p> <p>Places the roundabout further from the A38 thus providing safer working layout</p>	<p>improvement to the amenity of properties which currently front the existing slip road.</p> <p>Improved access to the Tesco supermarket</p> <p>Does not meet technical requirements</p> <p>Negotiations with landowners</p>	<p>Solution acceptable to Highways Agency (HA).</p>
4	<p>Compact signals solution at Lee Mill.</p> <p>Signalise the junctions at the end of the slip road, as supposed to roundabout solution in Options 2 & 3</p>	<p>Improvement to the amenity of properties which front the existing slip road.</p> <p>Improved access to the Tesco supermarket</p> <p>Does not meet technical requirements</p> <p>Negotiations with a landowner..</p>	<p>Solution acceptable to Highways Agency (HA).</p>

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5	<p>Signals Solution at Ivybridge</p> <p>Will be undertaken as part of a development condition which required EfW traffic from the west to leave the A38 at Ivybridge and turn back</p> <p>Solution will effectively signalise the current arrangement</p>	<p>Will improve the operation of the existing junction, however preliminary assessments show that the layout will still operate above capacity.</p>	<p>Principle of intensifying use at Ivybridge junction not accepted by HA</p>
6	<p>Improved roundabout solution at Ivybridge</p> <p>Use of Ivybridge Junction</p> <p>Solution will bring the design of the current 6 arm roundabout up to current standards</p>	<p>Improved operation of the existing junction.</p> <p>Requires negotiations with three or more landowners and significant infrastructure works</p>	<p>Principle of intensifying use at Ivybridge junction not accepted by HA</p>
7	<p>County link / connector road to be provided at Lee Mill</p> <p>Solution suggested by the HA, the slip road will not be part of the trunk road and therefore lower standard may be accepted</p> <p>The road would run behind the properties which front the current slip road, north of the A38 highway boundary and at the bottom of the A38 embankment.</p>	<p>Acceptable in principle to HA and DCC assumed to be supportive.</p> <p>Would require extensive land take to the rear of a number of properties.</p> <p>Potential impact on amenity of properties within the Lee Mill, albeit to a lesser extent.</p> <p>Requires likely landscaping buffer, thus incurring further land take</p> <p>Potentially located in a flood plain, requires further consideration</p>	<p>Solution has merit subject to land negotiations being acceptable</p> <p>Requires CPO powers unavailable to applicant</p>

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8/9	<p>New full standard slip road provided to east of Lee Mill</p> <p>Would provides a slip road to standard with a roundabout junction to accommodate turning movements.</p> <p>Roundabout solution the preference as it provides a passive junction at the end of the slip road and can be built to accommodate standards.</p> <p>Gyratory solution may also be incorporated to this layout</p>	<p>Would greatly improve the amenity of properties which currently front the existing slip road.</p> <p>Would improve access to the Tesco supermarket</p> <p>Would comply with technical requirements</p> <p>Requires land take from landowner, plus also a small area of additional land plus potential negotiations with Tesco</p>	<p>Would provide an acceptable HA solution for a new slip road</p> <p>Land unavailable and no CPO powers available to Applicant</p>
10	<p>Enhancement of existing traffic management measures on Western Road and improvement of pedestrian facilities</p> <p>Maintains the existing situation in terms of slip roads to the trunk roads.</p> <p>Provides a widened footway on the southern side of Western Road.</p> <p>Introduces improved vehicle activated speed signage</p>	<p>Maintains the existing situation.</p> <p>Preferred option of HA as it does not involve material change to the A38 trunk road.</p> <p>Highway authority / HA do not in principle have a problem with the existing situation</p>	<p>Is acceptable in principle to highway authority / HA</p> <p>Preferred option if bypass options could not be procured.</p>

1. Following consideration of the above process, Option 10 has been selected as the solution that is deliverable in terms of technical design and ownership. Given that it is established that the proposed development will have no adverse affect on the road network through Lee Mill, and that the increase in traffic is below the threshold whereby it will be deemed to create an adverse environmental impact (which has been accepted by the HA and DCC), the proposal therefore is to undertake limited works as a means of mitigation on Western Road. These proposals have been brought forward as Option 10, and are included as part of the development proposals as off-site highway works. Full details are included at Section 6 of the ES