

# Tornagrain

A Planned Town for the Highlands

Environmental Statement

Technical Annex 12

**Waste**

## **Contents**

1.	Introduction	1
2.	Methodology	3
3.	Policy Context	5
4.	Calculation	6
5.	Potential Effects and Proposed Mitigation	7
6.	Cumulative Effects	8

## 1. Introduction

1.1 The A96 Growth Corridor Development Framework identifies an opportunity for development of a new community near Inverness Airport, as part of the wider strategy for balanced development between Inverness and Nairn. Moray Estates Development Company (MEDCO) are now seeking outline planning permission for this new community.

1.2 An environmental impact assessment (EIA) has been carried out in accordance with the Environmental Impact Assessment (Scotland) Regulations, 1999, the findings of which are presented in the form of an Environmental Statement (ES). The ES comprises the following documents:

- a Non-Technical Summary;
- a Main Report;
- 12 Technical Annexes; and
- a Construction Environmental Management Plan (CEMP).

1.3 The technical annexes are as follows:

1. Agricultural Land
2. Air Quality
3. Cultural Heritage
4. Ecology
5. Geo-Environment
6. Landscape and Visual Amenity
7. Noise and Vibration
8. Socio-Economics
9. Surfacewater Drainage and Flood Risk
10. Sustainability
11. Transport
12. Waste

1.4 This report comprises Technical Annexe 12: Waste. It identifies the main solid waste streams likely to arise from the development, and assesses their significance in the context of the local waste management regime. Consideration is given to both operational and construction wastes.

1.5 In view of the outline nature of the application, the assessment is based on generic calculations. In addition, since the development is to take place over a 35 year period, the future status of the policy framework and the waste management regime cannot be predicted with certainty. The assessment has therefore assumed the forward projection of existing policies and targets.

1.6 This report does not set out a waste management strategy for the development, beyond making commitments to best practice in the context of the likely policy expectations. It is anticipated that matters of detail in relation to waste management would be addressed by condition or design changes at the reserved matters stage. These include:

- development of a construction waste management plan as part of the CEMP; and

- incorporation of waste management facilities such as neighbourhood recycling or composting centres.

## **2. Methodology**

### *Operational Wastes*

- 2.1 For operational wastes, a distinction has been made between household and non-household wastes. The latter comprise wastes from commercial premises (retail, business etc) and from facilities such as schools.
- 2.2 The calculation of household waste has been based on the average arising per household (1.2 tonnes per annum) given in the Highland Council Waste Strategy Summary 2006-7. In order to keep the calculations as simple as possible, anticipated increases in waste arisings per household have not been taken into account; whilst actual volumes may therefore differ from those presented here, their proportional relationship remains valid.
- 2.3 The calculation of non-household wastes has been based on the Environment Agency Waste Benchmarking Tool. This provides figures for waste arisings from a range of business sectors per annum per employee, derived from the National Waste Production Survey, 1999.
- 2.4 The business sectors are highly specific and do not correspond to the Use Classes. An average figure (of 5 tonnes per annum per employee) has therefore been adopted to reflect the variation in waste generation from the anticipated range of uses.
- 2.5 Employment projections have been taken from Tables 5.11 and 5.12 in Technical Annex 8: Socio-Economics.

### *Construction Wastes*

- 2.6 The calculation of construction waste has been derived from the SMARTwaste programme, developed by the Building Research Establishment, which includes performance indicators for arisings of construction waste from different types of project. These indicators are based on 100m<sup>2</sup> of floor area and £100K of project value.
- 2.7 For the purposes of this exercise, the project types have been simplified into residential and non-residential. The indicators for residential projects are 15.2m<sup>3</sup> and 18.3m<sup>3</sup> respectively. Average indicators have been calculated for non-residential projects (reflecting variations in waste generation between different types) of 17.4m<sup>3</sup> and 15.7m<sup>3</sup> respectively. Cubic metres have been converted to tonnes using representative indicators.
- 2.8 Floorspace has been taken from Table 5.1 in the Main Report. Project value has been taken from Table 5.10 in Technical Annex 8.

### *Future Baseline and Cumulative Effects*

- 2.9 Reference has been made to the waste implications of the overall A96 Growth Corridor Development Framework, of which Tornagrain forms part. In addition, specific consideration has been given to the potential for cumulative effects to arise in association with the proposed Inverness Airport Business Park (IABP).

### *Significance Criteria*

2.10 The following factors have been taken into account in assessing the potential significance of effects:

- the volume of arisings as a proportion of existing and future totals within the region;
- constraints on the waste management regime; and
- any risk that the development may affect THC's ability to meet their policy targets (e.g. for diversion of waste away from landfill).

### 3. Policy Context

- 3.1 The main framework for waste management in the region is provided by the Highland Area Waste Plan, 2003 (the HAWP). The HAWP sets out the basis for waste management in the medium- and long-term, so as to meet current and future legislative requirements and - specifically - the objectives of the National Waste Plan (SEPA/Scottish Executive, 2003).
- 3.2 Waste management is to be developed on the basis of the best practicable environmental option (BPEO) and to comply with the principles of sustainable development and integrated waste management.
- 3.3 The HAWP identifies a series of targets for waste disposal modes over the plan period to 2020, reflecting those in the National Waste Plan. The targets for the remaining plan period are as follows:

<b>Disposal Mode</b>	<b>2008</b>	<b>By 2010</b>	<b>By 2013</b>	<b>By 2020</b>
Landfill	69%	33%	32%	29%
Recycling	18%	27%	28%	31%
Energy from Waste	0%	27%	27%	27%
Composting	13%	13%	13%	13%

- 3.4 The Highland Council Waste Strategy Summary 2006-7 indicates that, out of a total volume of municipal waste of about 164,000 tonnes, 74% was landfilled and 26% was composted or recycled.

## 4. Calculation

### *Operational Wastes*

- 4.1 On the basis of an average arising of 1.2 tonnes per household per annum, the completed development (of 4,960 dwellings) would produce a total of 5,962 tonnes of household waste. The rate of generation would reflect the anticipated phasing as follows:

Phase	End Year	No. of Units	Waste Arising (rounded tonnes)	
			Phase	Cumulative
1	2016	344	413	413
2	2021	+ 507	608	1,021
3	2026	+ 780	936	1,957
4	2031	+ 885	1,062	3,019
5	2036	+ 960	1,152	4,171
6	2041	+ 1,100	1,320	5,491
7	2046	+ 384	461	5,952

- 4.2 The completed development is anticipated to directly provide 1,682 jobs, plus an estimated 175 FTE jobs in schools (ideal scenario; see Technical Annex 8). This amounts to a rounded total of 1,860 jobs. On the basis of 5 tonnes of waste per employee, the total arising from non-household sources would be 9,300 tonnes per annum.
- 4.3 There is currently no breakdown of employment provision by phase. However, the arisings averaged over the seven development phases equate to about 1,330 tonnes per phase. The total volume of operational waste arising from the completed development could therefore amount to more than 15,000 tonnes per annum.

### *Construction Waste*

- 4.4 Waste arisings during construction of the dwellings, based on a floor area of 578,088 m<sup>2</sup> and a rate of 15.2m<sup>3</sup> per 100m<sup>2</sup>, could amount to about 88,000 m<sup>3</sup>. On the basis of a projected value of £622million for the residential component, and a rate of 18.3m<sup>3</sup> of waste per £100K of value, the total arisings could amount to about 114,000m<sup>3</sup>. The average of these two totals is about 100,000m<sup>3</sup>.
- 4.5 Waste arisings during construction of the non-residential floorspace, using an area of 60,722m<sup>2</sup> and a rate of 17.4m<sup>3</sup> per 100m<sup>2</sup>, could amount to about 10,500m<sup>3</sup>. On the basis of a projected value of £85million and a rate of 15.7m<sup>3</sup> per £100K, the total could be about 13,000m<sup>3</sup>. The average of these two totals is about 12,000m<sup>3</sup>.
- 4.6 The total volume of waste arising during construction could therefore amount to around 112,000m<sup>3</sup>. This will be generated in line with the anticipated phasing; however, precise totals per phase for floorspace and project value are not currently known. Averaging the arisings over the total development period of 35 years produces a figure of around 3,200m<sup>3</sup> per annum.
- 4.7 Construction waste varies in composition from lightweight materials such as packaging and timber to heavier materials such as spoil and cement. Reflecting these differences, it has been assumed that 1m<sup>3</sup> equates to about one tonne.

## **5. Potential Effects and Proposed Mitigation**

### *Operational Waste*

- 5.1 The potential annual total of waste arising (15,000 tonnes) represents about 9.2% of the total volume of municipal waste generated within the Highland Council area in 2006/7. This is a substantial figure, especially when seen in the context of the step-change in disposal modes anticipated by the HAWP by 2010.
- 5.2 The key initiative required to meet the 2010 targets is the introduction of an energy-from-waste facility. In the event that this does not eventuate or is delayed, a substantial increase in recycling and composting would be required to achieve the necessary diversion from landfill.
- 5.3 It is by no means certain that this can be achieved, even with current volumes. The level of increase represented by Tornagrain would place further pressure on the system, and would be regarded as a significant effect if the targets were not met as a result.
- 5.4 There are limitations at outline planning stage to the degree to which the design or management of a development can influence its impact on the waste management system, especially since the latter is beyond the applicant's control. However, the inherent flexibility of the masterplan will allow the necessary facilities (recycling or composting centres) to be incorporated at the reserved matters stage.
- 5.5 With appropriate management, on-site composting could support a relatively closed-loop system, whereby compost is returned to residents for garden use. Such measures could reduce the net output of waste requiring disposal off-site; for example, if Tornagrain achieves the Highland target of 13% for composting, the net volume of waste would be reduced by about 2,000 tonnes per annum.

### *Construction Waste*

- 5.6 The average arising of 3,200 tonnes per annum amounts to about 2% of the total output of municipal waste in Highland for 2006/7.
- 5.7 It is intended that a waste management plan will be adopted as part of the CEMP. The precise content of this plan will be agreed with THC, and will comply with best waste management practice at the time.
- 5.8 The central objective of the plan will be to minimise waste generation through measures such as appropriate procurement, and to optimise the re-use and recycling of wastes wherever possible; for example, by ensuring that cut and fill are balanced within the site.
- 5.9 With such measures in place, it is considered that construction wastes would not place additional pressure on the management system and that their effect would not be significant.

## 6. Cumulative Effects

- 6.1 The cumulative effects of the development on waste management are considered below in relation to the Inverness Airport Business Park (IABP) and the overall A96 Corridor Development Framework.

### *IABP*

- 6.2 Construction of Tornagrain is assumed to start once Phase 1 of IABP is occupied, and to be completed 15 years before the business park. Arisings of both construction and operational wastes from the two developments will therefore overlap.
- 6.3 The implications in relation to operational waste are set out below:

By Year	Cumulative Waste Arisings per annum (rounded tonnes)			
	Tornagrain		IABP	Combined
	Household	Other Waste		
2016	413	1,330	4,360	6,103
2021	1,021	2,660	8,725	12,406
2026	1,957	3,990	12,505	18,452
2031	3,019	5,320	16,285	24,624
2036	4,171	6,650	20,065	30,886
2041	5,491	7,980	23,840	37,311
2046	5,952	9,300	27,620	42,872
2061	5,952	9,300	35,355	50,607

- 6.4 The combined annual arising of operational waste is predicted to increase from around 6,000 tonnes to around 43,000 tonnes on completion of Tornagrain, and over 50,000 tonnes on completion of IABP.
- 6.5 The combined annual output of waste would amount to about 28% of the total municipal waste arisings in Highland for 2006/7. In the absence of the infrastructure required to meet the HAWP targets, this would represent a significant adverse effect on the waste management regime.
- 6.6 In combination, construction of Tornagrain and IABP has the potential to generate around 195,000 tonnes of waste. Spread over the construction periods for each project, this would average about 6,500 tonnes per annum, or about 4% of the total municipal arisings for Highland in 2006/7.
- 6.7 If individual waste streams coincide (e.g. disposal to landfill from both projects), this could exert greater pressure on the waste management regime. However, both developments will be subject to waste management plans as part of CEMPs, and it is anticipated that co-ordinated planning would ensure that significant effects could be avoided.

### *A96 Corridor*

- 6.8 Both Tornagrain and IABP form part of the development strategy for the A96 Corridor, as adopted by THC. The waste implications of this strategy were not addressed explicitly in the supporting SEA, and only a brief comment can be made here.
- 6.9 The A96 Growth Corridor Development Framework envisages an additional 20,000-30,000 people over the next 30-50 years. This population could

equate to between 10,000-15,000 households (using an average household size of 2.0; see Technical Annex 8).

- 6.10 On the basis of an output of 1.2 tonnes per annum, the arising of household waste alone could amount to 12,000-18,000 tonnes per annum. Household waste from Tornagrain would represent between one third and half of this total.
- 6.11 Since the A96 Development Framework has been adopted by THC, it seems reasonable to assume that an appropriate mechanism will be in place to accommodate the additional waste arisings without compromising the HAWP targets.