

**Imagine**

**Stonehaven**

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**Stonehaven  
Capacity Study  
Draft**

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# STONEHAVEN CAPACITY STUDY

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## EXECUTIVE SUMMARY

### *Review of Current Situation*

#### **Background and Purpose**

- Stonehaven is one of the key settlements recognised in the structure plan, NEST, as having potential to contribute to a “sustainable” future for Aberdeenshire as a whole.
- The purpose of the study is to establish a long-term framework for the town, in the light of a review of its potential for long-term growth.

#### **Key Assumptions**

- The study considers the implications of allowing for expansion by about 50% of Stonehaven’s housing stock, from about 4100 (in 2001) to about 6100 (however long that takes). This is *not* a prediction of fact or timescale; and the study is not itself a plan that dictates how to deliver the prediction. The 50% merely provides a starting point from which it is possible to explore the potential implications. It will be for subsequent structure and local plans to make actual predictions and to use this study as background information, on the basis of which it is then possible to make informed decisions.
- In developing the implications, priority is given to the “green” solution (i.e. one that is most likely to lead towards “sustainable development”), wherever possible.
- The population growth as a result of the housing growth assumed would be about 4,300, following after 5 years of static population numbers due to no houses being allocated in the Structure Plan from 2006-2010.
- The predicted household occupancy rate for each dwelling may be only 2.14 by 2011, which on average could mean smaller dwellings would be required, thus reducing the level of land up-take, and allowing for more compact terrace-type dwellings.
- The age-distribution of Stonehaven will change unless new dwellings are built in the town. Otherwise, if the trend in Stonehaven reflects that for Aberdeenshire, the proportion in the younger age group and adults aged 30-44 years is expected to decline, while those aged over 60 will increase by almost 50% by 2016.

#### **Key Land Requirements**

- The net housing land requirement would be 65ha, with 90% of the houses constructed at a density of 40dpha and 10% at 10dpha, all set out in residential neighbourhoods each with a maximum of about 700 houses.
- 50ha employment land should be identified, sufficient to fulfil the requirement for the complete balance of employment with housing land, i.e. land would potentially be available for employment of the same numbers of economically active people that live in Stonehaven, with at least some in reasonable proximity to each new significant area of housing.
- The industrial estate at Spurryhillock should be considered for higher density commercial uses (should such a demand emerge), for which there is insufficient space in the town centre.
- A total of 2ha (1ha each of comparison and convenience goods) could be required for retail use. The sequential test would be applied in each case, other than for a local convenience goods shop. Location beside a major bus route would be essential.
- In addition to space for the cemetery to expand and potential for further community woodland, a total of 16ha of open space could be required, using the natural potential of

the landscape wherever possible. It would need to be concentrated around the areas where most development will be proposed, but in a way that integrates the new development into the existing open space framework.

- The estimate of need for primary schooling could lead to the replacement of Dunnottar at a relatively early stage on a new site associated as appropriate with new development; the construction of a fourth primary school on a greenfield site associated with new development in due course; and possibly ultimately the replacement of Arduthie with a new school. When built, each new school site would need to extend to about 4 ha.
- If the required development led to a significant site or sites being developed that are relatively remote from the town centre, a small new medical facility may be justified. This could be built within one of the new primary school complexes, or abutting it, as the Health Board wished, and such a facility would, of course, require additional land and/or building space over and above the 4 hectares for the school.

### **Key Network Requirements**

- The transport priorities should be for:
  - accessibility of the most intensive land-uses (e.g. retail and offices) to the main rail and bus routes;
  - accessibility of the main areas that generate service vehicle traffic (e.g. industry) to the northern or southern trunk road junctions, without the need to traverse residential areas, along with improvement of the northern junction by the provision of a new access/exit for the south-bound carriageway in close proximity to the access/exit for the north-bound carriageway;
  - accessibility to be provided for individual travel within Stonehaven with priority given, in order, to walking, cycling, public transport, and private transport, in particular including:
    - the creation of a framework of pedestrian and cycle routes for the whole town in association with the “green fingers” that radiate from the town centre;
    - the development, if possible, of a circular route for buses around the town.
- Expansion of Stonehaven to accommodate 2000 additional houses would require significant upgrading of the existing fresh and waste water systems, particularly the provision of a new water distribution main, associated pumping stations and a service reservoir.
- Provision of such infrastructure would be feasible, but probably only on the back of the value created by a considerable scale of development in any particular case.
- The introduction of Sustainable Drainage Systems (SuDS) will strengthen the case for increased open space surrounding development.
- The size of district heating scheme to serve up to 250 houses at a time only requires a building the size of a small barn, which could be accommodated into the overall development scheme. A larger electricity generating plant serving up to 5000 houses would require a building the size of a medium-sized barn on a 1ha site, which would be suitable for a standard employment area with good road access.

### **Opportunities and Constraints**

- On balance Stonehaven is rich in potential and has several opportunities for development, although most would involve crossing significant development thresholds.
- In general the key elements of its “sense of place”, which could provide the foundation for its future prosperity, are its historic core, its sea frontage, its setting on the coast and within its “bowl” of hills, and its green corridors radiating from the central core.

- Taken together these could form the basis of an entire open space framework for Stonehaven, consisting of the existing parks and some significant new areas of open space along with the most significant centres of social importance, all connected by green corridors in a continuous chain of linked loops.
- It is essential to identify new opportunities in appropriate locations for each type of business and industrial opportunity that complement Stonehaven's sense of place.
- A number of constraints fall into an "absolute" category, in which to all intents and purposes development will be impossible during the timescale of this study: these include the current alignments of the railway, A90(TR), and the major gas and oil pipeline safeguarded areas west of Stonehaven; the difficulty of increasing the presently substandard capacity of the western access from Stonehaven onto the A90(TR); areas with potential to flood; and the need to conserve features which create its "sense of place": its historic core, sea frontage, setting on the coast and within its "bowl" of hills, and its green corridors radiating from the central core.
- All the remaining constraints are "relative" and will be addressed by comparative analysis of the relevant areas affected by them in Part 2 of this study.

### *Assessment of Options*

- A sieve technique was used to identify an area to the north and a larger area to the south of the town that are not affected by the absolute constraints identified in Part 1 of the study. A "Goal Achievement Matrix" (GAM) was then constructed on the principles of sustainability to assess the relative merits of the remaining parcels of land.
- In general terms the GAM indicated higher scores for sites nearer the existing urban fabric, and the lowest scores for the most remote sites.
- On this basis the sites that are most suitable to new development are: Mains of Cowie (on the plateau that lies opposite the caravan park to the north of the town centre), and the northernmost parts of East Newtonleys (to the south of the town centre). Although both will have road access and water and drainage constraints to overcome, both scored well because they are relatively close to the town centre, the main services, and bus routes.
- The sites at Toucks and Mains of Ury did not score as well as Mains of Cowie, East Newtonleys, or Dunnottar, but were not far behind. Toucks is the only area capable of providing the possibility of major expansion of the town.

### *Recommendations*

- The framework for the potential pattern of growth for Stonehaven is set out in a series of steps, starting with identification of the general locations to be considered. This was followed in order by setting the framework of open space, transport system and local service centres needed; then identifying sites for employment and housing; and finally recommendations for potential phasing.
- The order of phasing was based initially on the scores established by the Goal Achievement Matrix. However, the possible need to give priority to the early replacement of Dunnottar School and establishment of the employment site (Site EmpB in the Aberdeenshire Local Plan) would give rise to a slight adjustment. Other permutations might also arise in the future on the basis of the particular circumstances, as and when other plans need to be formalised, provided they do not prejudice the total framework.

- In the meantime, the phasing recommended is
  1. East Newtonleys/Dunnottar;
  2. Mains of Cowie/Mains of Ury;
  3. Toucks.
- In conclusion, the development set out in this study will benefit the town economically and socially. It will complement the town's setting and is fully consistent with the Council's position on sustainability.

## Part 1: Review of Current Situation

### *A. BACKGROUND AND PURPOSE*

#### INTRODUCTION

##### **Purpose**

1. The purpose of the study is to establish for Stonehaven, in the light of a long-term review of its potential for growth:
  - a long-term framework for the critical land uses and distribution systems;
  - an outline of the most sustainable framework for the critical land uses;
  - an outline of the most sustainable framework for the critical distribution networks (transport, water, waste etc);
  - recommended thresholds or stages of development (including alternatives, if appropriate) leading towards the long-term framework; and
  - an action plan, as necessary, to achieve the above.
2. The reason for carrying out the study now is that there is a current difficulty in identifying locations for further development in Stonehaven, because a development threshold has been reached and the next choices have not been clear. This applies particularly to the period identified in the structure and local plans, NEST and ALP, beyond 2010.
3. Longer-term considerations present a further issue. Incremental land allocations are usually made at the best locations when viewed on a one-off basis, but they do not necessarily turn out to be the best locations in the longer term (when new allocations have to be added). There is thus a need to take a view of the capacities, potential and thresholds for development in Stonehaven and similar towns over the much longer term. These requirements were identified in a report to the Infrastructure Services Committee on 3 October 2002: Stonehaven is the first town to be considered in this way.
4. For the avoidance of doubt, this study will not itself become part of the development plan, but should become part of the body of knowledge from which any future development plans and planning applications will be informed. Effectively, its purpose is to illustrate capacity rather than to indicate commitment. Accordingly, even when the finalised report is presented, it will be for noting and not for “approval” in its own right.

##### **Background Issues**

5. Stonehaven is one of the key settlements recognised in the structure plan, NEST, as having potential to contribute to a sustainable future for Aberdeenshire as a whole. In this strategic context, the importance of Stonehaven is primarily because of its location on major road and rail links. From this it derives its function as a key service centre for the North East as a whole, and its contribution would have to be achieved by the balanced development of housing and employment land.

6. The notion of “sustainability” is fundamental to the structure plan, and the term is used throughout this study to mean the same as in NEST, based as it is on the Brundtland definition: “development that meets the needs of the present, without compromising the ability of future generations to meet their own needs”. In simpler terms, this means that priority should be given to the “green” solution (i.e. one that is most likely to lead towards “sustainable development” in the long run), wherever possible. In the case of the current study, the implications of this are primarily concerned with energy conservation and resource efficiency, in particular:
- the efficient use of land;
  - reduction as much as possible of the need to burn fuel, in particular hydrocarbons, whether in vehicles or in buildings, e.g.:
    - by reducing the need to travel to work, shops or other services;
    - by increasing the density of occupation close to shops, services and public transport routes;
    - by promoting the generation of “green” forms of energy;
  - making the most of the town’s natural assets; and
  - the need for Stonehaven to make its contribution to the sustainability of the North East as a whole.
7. In terms of detailed location, Stonehaven is hemmed in by the sea to the east, the A90(TR) and various pipelines to the west and north, and the River Carron and Bervie Braes to the south. Its setting is in a series of concentric semi-circles, with the high ground creating a basin around the A90(TR) which in turn encircles the existing town, which in its own turn surrounds the central basin below the raised beach around Market Square. Roads radiate from Market Square at the hub of the town, while the Cowie and Carron watercourses emptying into the sea to the north and south of the Square augment a spoked half-wheel effect.
8. Development over the past century has followed the exponential curve most settlements have shown. An instinctive response to this might be that a moratorium should be declared on development other than infill proposals. However, this would conflict with the current structure plan’s strategy, based as it is on a more global understanding of sustainability, that identifies Stonehaven as one of Aberdeenshire’s key strategic settlements with potential for growth, although within its ability to accommodate it without loss of amenity or identity. This is not least because pressure to develop is not limited to Stonehaven, and refusal to countenance additional development here would result in a pressure that is less appropriate and even harder to accommodate elsewhere.

### **General Assumptions**

9. In order to achieve the study’s purpose, a primary assumption is made that at some stage in the future (be it the 20 years advocated by the latest Scottish Planning Policy statement or even longer) the housing stock will expand by 50%: this would take the housing stock from about 4100 (in 2001) to about 6100. It is important to remember that this is *not* a prediction of fact or timescale; and that the study is not itself a plan that dictates how to deliver the prediction. In fact, the percentage could have been any other large number, and 50% merely provides a starting point from which it is possible to explore the potential implications. It will be for subsequent structure and local plans to make actual predictions and allocations, and to use this study as

background information, on the basis of which it is then possible to make informed decisions.

### **Conclusions**

10. The conclusions can be summarised as follows.
- Stonehaven is one of the key settlements recognised in the structure plan, NEST, as having potential to contribute to a “sustainable” future for Aberdeenshire as a whole.
  - The purpose of the study is to establish a long-term framework for Stonehaven, in the light of a review of its potential for long-term growth.
  - The study considers the implications of allowing for expansion by about 50% of Stonehaven’s housing stock, from about 4100 (in 2001) to about 6100 (however long that takes).
  - In developing the implications, priority is given to the “green” solution (i.e. one that is most likely to lead towards “sustainable development”), wherever possible.

## **POPULATION**

### **Context**

11. The current structure plan, NEST, does not allocate any housing growth after 2005. The purpose of this was to allow Stonehaven to adapt to the 600 plus houses that had been granted planning permission in the previous few years. However, the current exercise is to explore the implications of continuing growth after this moratorium, by considering how to accommodate an additional 2000 houses and associated employment land in Stonehaven from 2011 onwards (however long it takes this growth to occur).

### **Background Issues and Assumptions**

12. The background assumptions can be summarised as follows.
- The total resident population in Stonehaven in 2001 was 9,580, compared with Aberdeenshire’s resident population of 226,940.
  - Current and forecast household figures are: for 2001: 4,110; for 2006: 4,611; for 2011: 4,631. There is little change between 2006 and 2011 because of the lack of new housing allocations during this period. The 2000 houses assumed in this study would result in 2000 households over and above the 2011 figure.
  - The household occupancy rate is expected to decline from 2.29 to 2.19 in 2006 and 2.14 in 2011. In order to provide a figure for the occupancy rate for subsequent years, the 2011 figures will be used, as no other forecast is available.
  - With the number of households levelling off and household occupancy rate falling, the current trend in the population is also expected to level off. Current figures using the 2003 Small Areas Population Estimates and Forecasts show that in 2001 there were 9,580 people; in 2006 there would be 10,247 people, and in 2011 there would be 10,060 people. Thus without the additional growth considered by the current study, the *current* trend of the population in existing houses is eventually for decline. On the other hand the population growth expected as a result of 2000 extra houses could be calculated by multiplying 2000 (houses) by 2.14. This rounds up to about 4300 additional people.

- The following table shows the age distribution for both Stonehaven and Aberdeenshire. The two are very similar, although there is a slightly higher proportion of the older age-groups in Stonehaven.

**Table 1: Age Distribution**

Age	% in Stonehaven	% in Aberdeenshire
<b>0-4</b>	5.13	5.74
<b>5-15</b>	14.89	14.83
<b>16-29</b>	14.77	16.58
<b>30-44</b>	22.96	23.03
<b>45-59</b>	21.78	23.51 <sup>1</sup>
<b>60-74</b>	12.98	10.01 <sup>2</sup>
<b>75 and over</b>	9.49	6.30
<b>under 16 yrs old</b>	20.02	20.57
<b>16-pensionable age</b>	61.93	63.12
<b>Pensionable age and over</b>	18.05	16.31

Source: 2001 Census and 2001 Strategic Forecasts for Aberdeenshire

<sup>1</sup> age 45 - pensionable age (60/65) <sup>2</sup> pensionable age (60/65) - age 74

- The 2001 Strategic Forecasts for Aberdeenshire also show the changes in age structure expected from existing trends. Although no comparable forecasts are available for Stonehaven on its own, given the levelling off of house-building (i.e. not allowing for any additional growth such as is considered in this study), the trend towards an ageing population may reasonably be expected to be similar if not even sharper.

**Table 2: Forecast Change in Age Distribution**

	Strategic forecast - Aberdeenshire			
	2000	2011	2016	% change 2000/16
<b>0-4</b>	13,225	13,076	13,407	+ 1.4%
<b>5-11</b>	21,531	18,219	18,410	- 14.5%
<b>12-15</b>	21,552	10,758	10,329	- 18.4%
<b>16-29</b>	37,465	40,514	37,794	+ 0.9%
<b>30-44</b>	53,170	45,297	44,153	- 17.0%
<b>45-Ret</b>	52,590	59,920	58,863	+ 11.9%
<b>60/65-74</b>	22,530	28,865	33,252	+ 47.6%
<b>75+</b>	14,025	17,108	19,019	+ 35.6%

Source: 2001 Strategic Forecasts for Aberdeenshire

## Findings

13. If no new allocations were made, the population of Stonehaven would gradually start to decline after 2006, when the last housing allocations are built. This would almost certainly affect the number of school age children – which would also decline as no new housing is built. During the same period, the number of elderly people living in the town would increase. However, the national demographic pattern is for the occupancy rate to decrease. Thus, as children leave the home, and the number of

single people or couples with no children increases, if not enough houses are available, more people would have to leave the area, leaving an ageing as well as decreasing population.

14. In 2001, there were 9,580 people living in Stonehaven. If land were allocated for 2000 houses as is assumed, the population would be expected to rise by 4,300 people. However, the fall in occupancy rates would also mean that house design must change to accommodate single and small family units. Nonetheless, any substantial rise in the population would mean that new facilities such as schools, community, leisure, medical facilities and elderly care centres would have to be provided.

### **Conclusions**

15. The assumed population growth as a result of 2000 new dwellings would be about 4,300, following after 5 years of static population numbers due to no houses being allocated in the Structure Plan from 2006-2010. The predicted occupancy rate for each dwelling may be only 2.14 by 2011, which on average could mean smaller dwellings would be required, thus reducing the level of land up-take, and allowing for more compact terrace-type dwellings. The age-distribution of Stonehaven will change, unless new dwellings are built in the town. Otherwise, if the trend in Stonehaven reflects that for Aberdeenshire, the proportion in the younger age group and adults aged 30-44 years is expected to decline, while those aged over 60 will increase by almost 50% by 2016.

## ***B. KEY LAND REQUIREMENTS***

### **HOUSING**

#### **Context**

16. The older core of Stonehaven consists mostly of 2 storey stone-built vernacular terraces set out in classical “new town” form. This is largely contained within the area below the raised beach at the centre of the town. However, the more recent form of housing that has developed everywhere else, and has come to predominate in Stonehaven is typical of the ‘suburban ideal’ of a detached house on its own plot at an average density of about 19 dwellings to the hectare (dpha) – in fact, what is now commonplace from John o’Groats to Land’s End. Apart from within the inner core of the town, pursuit of this apparent ideal has led to a vaguely unsettling uniformity, although other densities and housing forms are possible, and properly managed, highly desirable.

#### **Background Issues and Assumptions**

17. The background assumptions can be summarised as follows.
- The underlying assumption of the study (see paragraph 9 above) is that at some stage in the future the housing stock will expand by 50%, taking the housing stock from about 4100 (in 2001) to about 6100.
  - The characterisation of sustainability as it applies to housing is a subject capable of generating its own study. However, all sustainable options require relatively high densities. This is no new concept. C18th and C19th examples provide some of the most desirable property in the country, and it is also noteworthy that the Garden City Movement was promoting layouts with densities of 30dpha over a century ago.
  - For the purposes of the current exercise, in order to determine a specific density, it is adequate to use estimates based on an “off the-shelf” approach, such as is provided by the Essex Design Guide. This requires densities of something like double the current 19dpha suburban ideal, for sustainable development to work.
  - In order to create balanced communities (i.e. with reasonable access to community services, jobs and main transport routes without the main routes needing to traverse the community), the Essex Design Guide also recommends that all new residential areas should be divided up into elements not exceeding 700 dwellings.

#### **Findings**

18. In order to achieve the qualities of development required for sustainability, one of the key elements for the purpose of this exercise will be to assume a much higher average density of development for Stonehaven than has occurred in the recent past. Such an increase in housing density would also follow from the expectation of a falling household size (see paragraphs 12-15 above). Nevertheless some provision will also always be needed for at least some “executive” or other housing with large gardens.
19. The following design requirements are therefore proposed:
- 90% of the housing requirement (or 45ha) would be needed at an average of 40dpha.
  - 10% of the housing requirement (or 20ha) would be needed at an average of 10dpha.

- The higher density areas should be as close as possible to local services, employment and public transport routes, to encourage non-car based travel as much as possible
- Ideally no part of a residential neighbourhood should be further than:
  - 400m from a regular bus route;
  - 600m from a primary school/corner shop;
  - 1500m from a secondary school/employment node (existing or potential).

### **Conclusions**

20. The conclusions can be summarised as follows.

- A housing density double that of the current average (40 dwellings per hectare as opposed to 20dpha) is assumed to achieve the density necessary for green options to function effectively.
- The net housing land requirement will be 65ha with 90% of the houses constructed at a density of 40dpha and 10% at 10dpha. An additional 10ha has been incorporated into the designation to allow for public open space/amenity areas, in addition to the 6ha of playing fields which will be provided for mutual primary school/general public use.
- By and large housing should be set out in residential neighbourhoods with a maximum of 700 houses, each with local services, employment and public transport routes in close proximity.

## **EMPLOYMENT**

### **Context**

21. Stonehaven has approximately 4500 economically active residents. As with other city satellites, a large percentage of this workforce (63%) currently works outwith the settlement – mostly in Aberdeen (45%). The figure would be higher still, were it not for the high percentage of residents in local government employment within the town, and the Badentoy industrial estate at Portlethen.

### **Background Issues and Assumptions**

22. The background assumptions can be summarised as follows.

- Stonehaven based employment breaks down into traditional employment land-use (offices, shops and small businesses) in the central area, and 9.3ha employment land at Spurryhillock.
- Although Spurryhillock is not located within the town centre, it is immediately adjacent to the railway station, as a result of which it also has potential for higher density land-uses in the long run. In the meantime ALP has already designated a further 16ha employment land at the ALP EmpB site at East Newtonleys.
- The existing demographic trend is towards a gentle decline in population. However, this should be seen in the context of the 2000 additional houses the study postulates generating a requirement for about 900 jobs.
- In addition to maximising opportunities for existing “green” journeys to work, the study aims for an idealised complete balance in housing and employment land provision. This would be achieved by allowing sufficient employment land to provide employment opportunities for all those who might otherwise be expected to work outside the locality (if the existing travel to work pattern were to be maintained).

- A key element in the Council's strategy for promoting sustainability is the reduction of motorised journeys. The most significant of these is the journey to work, and if this can be effected by foot or bicycle (or public as opposed to private motorised transport), the sustainable dividend would be significant.
- The main criteria for the selection of locations for employment land should include:
  - ease of access for service vehicles to the trunk road;
  - proximity to public transport routes;
  - proximity to residential areas, although without the need for service vehicle access through them.
- However, the location would depend in part on the particular use proposed. For high density operations, such as offices, the priority is for a location as close as possible to the railway station or main bus routes, while for lower density blue-collar employment the more important requirement is for ease of access for service vehicles to the trunk road.

### **Findings**

23. The findings can be summarised as follows.

- The existing East Newtonleys ALP EmpB designation is for 16ha. The complete balance of employment with housing land could require a further 24ha. There is thus an overall requirement for 40ha employment land.
- A further 10ha should be added to this number to account for the possibility that the redevelopment of the industrial estate at Spurryhillock for more intensive commercial use ever needs to be considered. This might also be necessary for operations for which there is insufficient space in the town centre.
- The scale of any individual area may vary. A land unit of at least 5ha might be appropriate to go alongside each housing neighbourhood of 700 houses (for which see paragraph 17 above). This would help to distribute employment to provide proximity to any new residential areas. However, considerations of service accessibility and the costs of provision may dictate that some sites may need to be considerably larger.

### **Conclusions**

24. The conclusions can be summarised as follows.

- Sufficient employment land should be identified to fulfil the requirement for the complete balance of employment with housing land, i.e. land would potentially be available for employment of the same numbers of economically active people that live in Stonehaven.
- The net employment land requirement would be 50ha, with at least some in reasonable proximity to each new significant area of housing.
- The industrial estate at Spurryhillock should be considered for higher density commercial uses (should such a demand emerge), for which there is insufficient space in the town centre.

## **RETAIL AND OTHER SERVICES**

### **Context**

25. Stonehaven is the main established service centre for the Mearns and one of the key settlements recognised in the structure plan as having potential to contribute to a sustainable future for Aberdeenshire as a whole. However, it currently only has one

main supermarket, at the northern edge of the town centre. The Aberdeenshire Towns Shopping Study 1999 (ATSS99) identified a need for more retail outlets in the town, and there is the possibility of a planning application being submitted in the near future for a site at the edge of the town. At present, the lack of retail outlets, especially a large supermarket, means that Stonehaven is suffering from leakage to other towns, notably Aberdeen and Portlethen, which has an ASDA hypermarket. With the assumed further population growth of 4300 as a result of 2000 new houses being built, it is essential that opportunities are identified for potential new retail outlets within the town.

### **Background Issues and Assumptions**

26. For comparison (non-food) shopping the background assumptions can be summarised as follows.
- Existing comparison floor space in Stonehaven is about 4800m<sup>2</sup>. Taking account of the 8% increase in population from 2001-2006, and allowing for leakage to other centres, the general growth of available expenditure is already forecast to produce 30-45% increase in comparison/bulky goods shopping in Stonehaven. This equates to a need for about 1700m<sup>2</sup> extra floor space.
  - For additional population (such as is assumed in this study), again allowing for leakage and possible further growth in available expenditure, there would be a demand for about 700m<sup>2</sup> floor space per 1000 population. Thus for 4300 additional population, another 3000m<sup>2</sup> would be required.
27. For convenience (food) shopping the background assumptions can be summarised as follows.
- 8% increase in population 2001-2006 is forecast to produce 2% increase in convenience expenditure, giving a *currently* identified need for increased convenience floor space of 3000m<sup>2</sup>.
  - Extra convenience floor space would be needed at approximately 1000m<sup>2</sup> per 4000 population. Thus for 4300 additional population, 1100m<sup>2</sup> could be required in addition to the 3000m<sup>2</sup> currently identified.
28. In terms of location the background assumptions can be summarised as follows.
- Whichever services are concerned, comparison or convenience goods, current strategy at national and regional level applies the sequential test, with alternatives only considered for lack of something better. Thus a town centre location would always be preferred. Only if one is not available would an edge-of-centre site be considered; and only if neither of these is available would an edge-of-town location be considered. An exception to this general rule would be for a convenience retail shop serving a local part of Stonehaven. However, in any of these cases a location beside a major bus route would be essential. There is no reason to expect a change in this strategy.

### **Findings**

29. In terms of comparison shopping the findings can be summarised as follows.
- Extra comparison floor space would be 4700m<sup>2</sup> (0.47ha). The required car park and servicing provision could double the land-take required to 1ha. More car-parking provision could be given if it were to be part of the town centre parking provision.

- Any increase in comparison shopping in the town centre could require re-definition of the town centre, most likely to the north and west (Robert Street and Barclay Street).
30. In terms of convenience shopping the background assumptions can be summarised as follows.
- Extra convenience floor space would be 4100m<sup>2</sup> (0.41ha). The required car park and servicing provision could also double this land-take required, again to nearly 1ha.
  - Ideally this addition would take the form of additional sites to promote competition and choice rather than just increase the floor space of one store. For example, it could be in the form of neighbourhood centres or a third small supermarket (2500m<sup>2</sup> max) for the town.

### **Conclusions**

31. There is an identified need for both comparison and convenience shopping within Stonehaven, and a total of 2ha (1ha each of comparison and convenience goods) would be required for retail use, if and when the total growth assumed were actually to occur. The sequential test would be applied in each of these cases, other than for a local convenience goods shop. In every case a location beside a major bus route would be essential.

## **PUBLIC OPEN SPACE AND RECREATION**

### **Context**

32. Open space comes in many forms and serves a variety of functions: providing formal and informal recreation, shelter and natural habitat. In Stonehaven it goes further. The large woodland at Dunnottar along with Mineralwell Park, several smaller parks and playing fields, the beach, coastal strip and the routes of the Carron and Cowie all help to create a framework of open space which establishes the essential character of the town.

### **Background Issues and Assumptions**

33. The background assumptions can be summarised as follows.
- Significant existing areas of open space include: Dunnottar Woods; Mineralwell Park; areas of land adjacent to Mill of Forest Primary School, Mackie Academy, Kincardine Community Hospital (where the Burn of Farrochie runs), and the local rivers; off Thomson Terrace; and the beach and coastal strip.
  - These create a series of “green corridors” that radiate in spokes from the hub of Stonehaven’s central core.
  - The current standards for the provision of open space are set out in the Aberdeenshire Local Plan (ALP). However, with the higher densities of development envisaged in this study and the new need to accommodate SuDS (see paragraph 48 below), it would be appropriate to allow for double the public open space (ALP requirement x 2).
  - The total provision for open space will include school sports pitches (around 2 ha per school), on the basis that these should be shared public facilities.
  - Community woodlands are not mentioned at all in the finalised ALP (Appendix 6), and thus will be identified where appropriate in ADDITION to the “ALP x 2” requirement.

## Findings

34. The findings can be summarised as follows.
- It is essential that any enlargement of Stonehaven will have enough open space not just to serve the growing population, but also to complement and develop the existing framework, which provides the backbone to the town's character.
  - This will involve developing the spokes of the existing "green corridors", using the natural potential of the landscape, and joining them wherever possible to complete a full framework.
  - For 2000 houses, the total space required @ ALP requirement x 2 (i.e. number of houses multiplied by 80m<sup>2</sup>) = 16ha. This would be subdivided otherwise into a mixture of civic or town parks, organised sports grounds, community play areas, and other informal amenity spaces as appropriate, although this level of detail will not be shown in the diagrams.
  - Open space will range in size, from large areas, such as a Public Park, to small spaces within a development.
  - There is likely to be considerable overlap between the 16ha required for open space, and the provision of sports pitches in each new school.
  - There will be a requirement over the period of expansion envisaged for an extension of Stonehaven's cemetery (0.75ha minimum).
  - At present there is only limited provision of Community Woodland in the area around Stonehaven, but considerable opportunity for addition.

## Conclusions

35. In addition to space for the cemetery to expand and potential for further community woodland, a total of 16ha of open space could be required, using the natural potential of the landscape wherever possible. It would need to be concentrated around the areas where most development will be proposed, but it could also be used to integrate any new development into the existing open space framework in a way that would serve the whole community.

## SCHOOLS AND MEDICAL FACILITIES

### Context

36. There are currently a secondary school and 3 primary schools in Stonehaven, along with a medical practice and new Community Hospital. The addition of 2000 new dwellings over a 20+ year period would place pressure on these existing public services. It is, therefore, important to assess the capacity of the existing schools in the next 10 years and to identify what new health care facilities would be required as a result of substantial new housing developments.

### Background Issues and Assumptions

37. In the case of schools the background assumptions can be summarised as follows.
- It is expected (as with all new housing developments) that there would be a high level of demand for school places in the years immediately after houses are first occupied. However, this level of demand would normally decline in the medium to long term.
  - The current School Roll Forecasts go up to 2011, and the figures in Table 3 show the 'forecast remaining capacity' at that date.

**Table 3: School Roll Capacity Forecast to Remain at 2011**

Mackie Academy	+ 83
Arduthie Primary School	+ 236
Dunottar Primary School	- 88 (i.e. it is already over capacity)
Mill of Forest Primary School	+ 102

- The pupils per household ratio normally expected for Mackie Academy would be 0.2, and for primary schools would be 0.4. On this basis, the total number of additional pupils generated is illustrated in Table 4.

**Table 4: Additional Pupils Expected from 2000 houses**

Secondary pupils	$0.2 \times 2000 = 400$
Primary pupils	$0.4 \times 2000 = 800$
Total	1200

- The extent to which the new pupils could be accommodated in existing schools would depend on where the new houses are built i.e. which school catchment they fell into; and the ability to extend existing schools.
38. In the case of medical facilities the background assumptions can be summarised as follows.
- The medical facilities in Stonehaven are adequate at present, as no new housing developments are currently proposed after 2005. A new Community Hospital was opened in the town in 1998. However, it is expected that a growth in population by more than 4000 people would result in extensions to existing medical facilities, or the need to identify a new site.
  - Furthermore, there is likely to be a change in the age profile of the population, which would require an increase in the hospital bed complement, and health needs of the population as a whole.

### Findings

39. In the case of schools the findings can be summarised as follows.
- Mackie Academy occupies a site, the suitability of whose location would not be adversely affected by further housing development, and which enjoys generous playing field provision. Consequently:
    - the Academy could remain on its present site, with any necessary extension or refurbishment undertaken there;
    - the Council is unlikely to contemplate building an additional secondary school in the town; and
    - if the Council wished to limit the size of the Academy, it could consider rezoning between Mackie and Mearns Academies (the issue of extension/redevelopment of Mearns Academy is under consideration as a possible future development: if this were to proceed, zone changes could be made as part of the project).
  - The existing primary schools at Arduthie and Dunnottar are both situated on restricted sites close to the town centre. Neither school has playing fields. To

provide facilities which are fully fit for the purposes of delivering modern primary education, a major housing development could provide a suitable opportunity for either or both of these schools to be replaced. Dunnottar would need to be considered first, since it is already expected to be over capacity by 2011.

- Any substantial housing development (which would generate most of the demand for new school places) would of necessity be some distance from the existing Arduthie and Dunnottar Schools. Thus, there could be an additional case on geographical grounds for replacing these schools with primary schools more suitably located for the new housing.
- If and when all the development envisaged in this study occurs, there would be a need for a fourth primary school in addition to the existing three, whether any of them had already been replaced or not.
- Education Service standards suggest any proposed new site should be capable of taking a school of up to 2 streams/14 classes/400 pupils plus all associated facilities, even if a school is not initially built of that size. Preferably, therefore, it should extend to 4ha, or more, if the site was not approximately square and level, as the slope and shape of the site can make it more difficult to erect a school.
- If and when any new school is built, consideration should be given to the inclusion of the following community facilities within the school grounds to meet identified need at the time:
  - accommodation for Community Education;
  - school PE and sports facilities suitable for community use outwith school hours;
  - Social Work family centres;
  - joint school/community library;
  - health facilities: large scale housing developments would almost certainly require a GP practice and a dentist – these facilities could, in principle, be part of a community primary school development.

40. In the case of medical facilities the findings can be summarised as follows.

- In the case of medical facilities, an increase in the population of 4300 people equates to an additional 3 GPs plus support staff.
- An existing medical centre would require an additional 210m<sup>2</sup> of floor space plus car parking. If a new 3 GP Practice were needed, then a new building of approximately 555m<sup>2</sup> might be required, plus a car park, say 0.1ha in all.
- Due to the fact that the population growth would be expected to stretch over 20 years, it is unlikely that a new medical facility would be justifiable on a small site. However, if the assumed development of 2000 houses led to a significant site or sites being developed that are relatively remote from the town centre, a small new medical facility may be justified, to provide more convenient access especially for the young and old. Such a medical centre could be built within one of the new primary school complexes, which would have other facilities to serve the locality.
- An increase in the population of 4300 people and the likely changing age-profile of the area would also require an increase to the hospital bed complement. There are 49 existing hospital beds at Kincardine Community Hospital (opened in 1998), to serve a population of 9580. With a 50% increase in the population and taking into account the changing age-profile, an additional 30 bed ward (900m<sup>2</sup>) plus car parking could be required to meet this increase. However, the existing hospital site does have limited open space on one side.

## Conclusions

41. The conclusions can be summarised as follows.

- Mackie Academy would probably be slightly over capacity, but it is expected that no new academy would have to be built, as there is enough land to expand the school if necessary.
- Dunnottar Primary School is already expected to be over capacity by 2011. Both Mill of Forest and Arduthie are expected to be under capacity, but with an assumed 800 potential new pupils to accommodate, the estimate of need for primary schooling is summarised as follows:
  - to retain Mill of Forest;
  - to replace Dunnottar at a relatively early stage on a new site associated as appropriate with new development;
  - to build a third new school on a greenfield site associated with new development in due course;
  - possibly ultimately to replace Arduthie with a new school.
- The timing of each of the above steps would have to be determined in accordance with availability of funding and the pace of housing development.
- Each new school would require 4ha, on an approximately square and reasonably level site.
- It is unlikely that a new medical facility would be justifiable, unless a significant number of new houses were to be developed relatively remotely from the town centre. In this case a new medical centre could be built within a new primary school complex.
- Kincardine Community Hospital does have limited room for expansion to accommodate extra hospital needs, which would have to be considered as the population of Stonehaven reaches the 12,000 mark.

## ***C. KEY NETWORK REQUIREMENTS***

### **TRANSPORT**

#### **Context**

42. Stonehaven lies on the main east coast route for both rail and trunk road within easy commuting distance of Aberdeen. Its railway station is not central, but well within the town, and it has one good access junction onto the A90(TR) to the south (which also links to the A92). A second junction to the north of the town has limitations, but could be improved, while a third point of access onto and off the trunk road to the west is substandard, with limited capacity. Within the town, roads radiate like spokes from the hub of Market Square, and it is difficult to transfer from any one of them to another without going through the town centre. Although Stonehaven has a small harbour it is of no transport significance. The town has potential as a transport interchange with car/bus transfer in the vicinity of the bus station in the town centre, and car/rail transfer at Spurryhillock should land become available.
43. The town has excellent public transport connections to north and south, and some local bus services around the town and into its hinterland. However, no specific pedestrian or cycle routes exist, let alone a coherent framework of routes.

#### **Background Issues and Assumptions**

44. The background assumptions can be summarised as follows.
- NPPG 17: Transport and Planning notes that land use planning can contribute to sustainability by:
    - reducing the need to travel by regulating the pattern of land uses in relation to each other and to transport facilities;
    - enabling people to access local facilities over local networks by short walking or cycling trips, in turn contributing to social inclusion;
    - supporting provision of high quality public transport access to development, in order to persuade motorists that public transport is more attractive to them than car use; and
    - supporting the management of motorised travel to enable it to undertake its essential role effectively, but in all other respects to contribute to sustainable transport objectives.
  - The generality of the guidance in the NPPG is confirmed by both the structure plan, NEST, and the Local Transport Strategy.

#### **Findings**

45. The findings can be summarised as follows.
- The approach of both governmental and local transport strategies requires that any new development should promote an integrated transport system that prioritises accessibility.
  - On the broad level, therefore, the priorities will be for:
    - accessibility of the most intensive land-uses (eg retail and offices) to the main rail and bus routes;
    - accessibility of the main areas that generate service vehicle traffic (eg industry) to a good junction onto the trunk road, without the need to traverse residential areas;

- accessibility to be provided for individual travel within Stonehaven with priority given, in order, to walking, cycling, public transport, and private transport.
- Accordingly, any opportunities that arise in or close to the town centre, the main north-south bus route or the railway station should be considered for high intensity land-uses, such as retail or offices. These are most likely to arise through brownfield redevelopment.
- The main industrial areas will need to be located as close as possible either to the northern or to the southern major access onto the A90(TR). For this to happen, on the northern side of the town, the opportunity should be taken to improve the northern junction by the provision of a new access/exit for the south-bound carriageway in close proximity to the access/exit for the north-bound carriageway. In turn this would allow closure of the existing sub-standard slip-road near the coast.
- The western access onto the A90(TR) is substandard and could not be improved sufficiently within reasonable cost limits or without having an unreasonable impact on sustainability. Access across the A90 to the west of Stonehaven is also limited by the “pinch-points” created by the bridges across the A90 and tunnels under the railway, although in this case some improvement may be possible, at a cost.
- The opportunity should be taken where possible to provide links onto the A90(TR) from each of the non-trunk main roads radiating out of Stonehaven, without the need to traverse the town centre or residential areas.
- A framework of pedestrian and cycle routes should be developed and complemented by all new development, preferably in association with the “green finger” spokes of open space that radiate from the town centre, wherever possible.
- Development generally should be associated preferentially with the north-south public transport through routes, or a local distributor bus network. In pursuance of the latter the opportunity should be taken, if available, to allow for a circular bus route around the town.
- Each new residential neighbourhood ideally would be close to but should not be traversed by any major through route. Instead, access within the neighbourhood should be provided by a local distributor road, on which all associated non-residential uses should be located, such as schools, churches, community halls, and small shops and businesses.

## Conclusions

46. On the broad level the transport priorities will be for:
- accessibility of the most intensive land-uses (eg retail and offices) to the main rail and bus routes;
  - accessibility of the main areas that generate service vehicle traffic (eg industry) to the northern or southern trunk road junctions, without the need to traverse residential areas; with improvement of the northern junction by the provision of a new access/exit for the south-bound carriageway in close proximity to the access/exit for the north-bound carriageway;
  - accessibility to be provided for individual travel within Stonehaven with priority given, in order, to walking, cycling, public transport, and private transport, in particular including:
    - the creation of a framework of pedestrian and cycle routes for the whole town in association with the “green fingers” that radiate from the town centre;
    - the development, if possible, of a circular route for buses around the town.

## **WATER WASTE AND DRAINAGE**

### **Context**

47. The water supply and drainage systems in Stonehaven are both currently close to capacity, although adequate to handle existing land allocations. Otherwise the major current concern is to meet new European standards by providing initial treatment for one of the existing local sea outfalls and by redirecting the outflow from both of them northwards to the Aberdeen Waste Water Treatment Works at Nigg,

### **Background Issues and Assumptions**

48. The background assumptions can be summarised as follows
- Almost any new development in Stonehaven would require the water mains distribution system to be upgraded with a new water distribution main, associated pumping stations and a service reservoir.
  - The wastewater treatment system already requires upgrading by improvement of the two existing direct sea outfalls. In most cases new sites will need their own extensive off-site sewerage.
  - All new sites would also require Sustainable Drainage Systems (SuDS), to prevent new development causing additional drainage flow downstream. In general terms the impact of SuDS at the level of local plans is that they will tend to require more rather than less extensive allocations of land for any given development. This is partly the reason for increasing the allowance for open space to double the existing standard (see paragraph 33 above).
  - An additional requirement of SPP7 Planning and Flooding is that development, including any drainage arrangements, should not create a flood risk either on-site or elsewhere.
  - Disposal of waste other than wastewater, eg provision of recycling centres and adequate routes for rubbish collection vehicles, is important at other levels of planning, but is unlikely to raise issues that are relevant at the scale of this particular study.

### **Findings**

49. The development of almost any new site in or around Stonehaven is likely to involve major water and drainage infrastructure costs. In most cases provision of such infrastructure would be feasible, but probably only on the back of the value created by a considerable scale of development. The particular requirements for water and wastewater upgrading of each site would have to be tailored to the particular site in due course as part of the development costs.

### **Conclusions**

50. The conclusions can be summarised as follows
- Expansion of Stonehaven to accommodate 2000 additional houses over the next 20+ years would require significant upgrading of the existing water and waste water systems, particularly the provision of a new water distribution main, associated pumping stations and a service reservoir.
  - Provision of such infrastructure would be feasible, but probably only on the back of the value created by a considerable scale of development in any particular case.
  - The introduction of SuDS will strengthen the case for increased open space surrounding development.

## HEATING AND POWER

### Context

51. With the increase in use of renewable energy to provide heat, electricity and other products, such as bio-oil, it is anticipated that by 2011, when the development assumed in this study might be starting, they will be able to use biomass as well as other forms of renewable energy to provide combined heat and electricity.

### Background Issues and Assumptions

52. The background assumptions can be summarised as follows.
- Using good practice guidelines from British Biogen (1999), a wood-fired electricity generation plant or combined heat and power plant, would require a gasifier or pyrolyser and an engine or turbine.
  - District heating schemes can serve multiple end-users, and underground piping that is installed while the buildings are being constructed can provide hot water and heat. Two examples, which are appropriate for this scale of development, would be:
    - a small scale plant of 250kWe (kilowatt of electrical power) for 250 houses, about the size of a small barn, and requiring 6 x 20 tonnes medium-sized lorry loads each week (1,500odt of fuel each year);
    - a medium scale plant of 5MWe for up to 5,000 houses, about the size of a medium-sized barn, and requiring 50 x 38 tonnes articulated lorry loads each week (25,000odt of fuel each year).
  - A chimney/flue to vent steam would be required for any biomass plant, which may have some visual impact, although appropriate screening with trees or careful siting should minimise any visual impact. Space would also be required for lorries to dump their load, and the turning circle required for a lorry.
  - A domestic biomass plant can be accommodated within any house or other development due to their small size.
  - The main planning consideration would be for safety, particularly of children near any school, when determining the vehicle route for trucks into and out of the biomass plant.

### Findings

53. The findings can be summarised as follows.
- The type of heating and power system likely to be needed would be a gasifier (well known technology) or pyrolysis (still being developed) engine or turbine.
  - The scale of plant most favourable to serve several different land uses would be for a medium-sized 5MWe plant with a district heating system. The total hectareage would be around 1ha, including the technology used to provide heat and electricity e.g. gasification or pyrolysis, the turning area for trucks, and the parking provision for employees, trucks and the storage area for the feedstock/fuel.
  - A single end-user, not connected to a district heating scheme, such as a school or retail use, would only require a building the size of a garage to house the hopper and boiler, although in some instances, the boiler could be housed within the main structure, with the hopper connected to it outside.
  - Good vehicle access would be necessary, and the A90(TR) would provide good access from the Deeside Woodlands and other local forest areas. The location of any biomass plant should be sited with good vehicle access, as there will be many

daily vehicle movements for an electricity-generating biomass plant, thus preferably within an industrial or other employment area.

### **Conclusions**

54. The conclusions can be summarised as follows.

- The size of district heating scheme to serve up to 250 houses at a time only requires a building the size of a small barn, which could easily be accommodated into the overall development scheme. Any larger electricity generating plants would require a building the size of a medium-sized barn on a 1ha site within a designated employment area.
- There are few limitations to the use of biomass, although a chimney/flue would be required, but with careful screening, the overall visual effect could be minimised.
- Good road access and road safety are very important, and should be considered during the design and proposed vehicle access routes to the plant.

## ***D. OPPORTUNITIES AND CONSTRAINTS***

### **OPPORTUNITIES**

#### **Context**

55. Stonehaven was historically a fishing port, holiday resort and market town. Although these roles have declined, it remains the main service centre for the Mearns in terms of shopping, local government and schooling. There is also a 10 hectare industrial estate at Spurryhillock, with an additional 16 hectares designated as employment land at East Newtonleys. However, over recent years its principal function has also been growing as a dormitory suburb for Aberdeen, although, certainly, it is one of the more sought after settlements of this kind.

#### **Background Issues and Assumptions**

56. The background assumptions can be summarised as follows.

- Stonehaven is one of the key settlements recognised in the structure plan, NEST, as having potential to contribute to a sustainable future for Aberdeenshire as a whole. This is primarily because of its location on major road and rail links, and its contribution would have to be achieved by the balanced development of housing and employment land.
- It is an attractive place to live in, and its location on a scenic coastline 2 miles north of the spectacular ruin of Dunnottar Castle, at the southern gateway to Royal Deeside gives it considerable tourist potential, as well as attraction as a dormitory suburb of Aberdeen.
- There is potential for large-scale development to have a significant effect on the town's market town ambience, although perhaps some change is inevitable, and this can be turned to advantage. In fact the ambience of an area can have as much influence as standard operational factors on attracting employment (for general purposes as well as the tourist industry).
- Existing high-profile assets and resources, which could be exploited to enhance Stonehaven's ambience, include:
  - "Old" Stonehaven comprising the harbour and Backies, the High Street and Market Square;
  - the beach and promenade from the harbour to the heated open-air swimming pool and Cowie village;
  - the setting of the town on the coast and within its "bowl" of hills;
  - the series of "green corridors" that radiate in spokes from the hub of Stonehaven's central core, including Dunnottar Woods, and the valley of the Carron, which are ripe for nature trails etc.; and Mineralwell Park which offers c10ha playing fields to balance Dunnottar Woods, plus the valley of the Cowie and Ury estate, which are already utilised for walks on an informal basis.
  - the Fireball Ceremony and the Feein' Fair: two events unique to Stonehaven, folksong festivals etc. (it is noteworthy that Which? magazine identified Stonehaven as one of the 12 world-wide locations to bring in the Millennium because of the Fireball Ceremony);
  - the Cheyne Hill airstrip;
  - the emergent Ury golf-course;
  - Dunnottar Castle (2 miles down the coast);
  - the Fowlsheugh Nature Reserve (4 miles down the coast).

- There is currently only a very limited range of opportunities for development of any kind on “greenfield” sites, without crossing significant development thresholds.
- There are a number of sites within the town, which either already have potential for redevelopment as existing “brownfield” sites or conceivably could provide opportunities for higher density redevelopment in the future. Because of the potential that publicising a list can have to cause unnecessary planning blight, only the relatively small number of *existing* brownfield sites are included here.

**Table 5: Established Brownfield Sites**

Name	Area (in ha)
Commodore Hotel	0.46
Former GWS Compound	0.42
Gasworks site	0.25
Total	1.13

## Findings

57. The findings can be summarised as follows.

- Sustainable economics depend on the optimisation of the appropriate resources. Stonehaven’s strong point is its “sense of place”, and it is crucial that this resource should not be compromised.
- In general the key elements of its sense of place are its historic core, its sea frontage, its setting on the coast and within its “bowl” of hills, and its green corridors radiating from the central core. Taken together these could form the basis of an entire open space framework for Stonehaven, consisting of the existing parks and some significant new areas of open space along with the most significant centres of social importance, all connected by green corridors in a continuous chain of linked loops.
- A particular enterprise that appears to continue to prosper is the Marine Rescue Centre at the harbour. Given Stonehaven’s coastal location and the excellent harbour facilities sea-related ventures could be encouraged. The old gasworks site at the Backies is currently vacant, and could provide an ideal location for some such facility.
- It is essential to identify new opportunities in appropriate locations for each type of business and industrial opportunity that complements Stonehaven’s sense of place.

## Conclusions

58. The conclusions can be summarised as follows.

- On balance Stonehaven is rich in potential and has several opportunities for development, although most would involve crossing significant development thresholds.
- In general the key elements of its “sense of place”, which could provide the foundation for its future prosperity, are its historic core, its sea frontage, its setting on the coast and within its “bowl” of hills, and its green corridors radiating from the central core.
- Taken together these could form the basis of an entire open space framework for Stonehaven, consisting of the existing parks and some significant new areas of

open space along with the most significant centres of social importance, all connected by green corridors in a continuous chain of linked loops.

- It is essential to identify new opportunities in appropriate locations for each type of business and industrial opportunity that complements Stonehaven's sense of place.

## KEY THRESHOLDS AND CONSTRAINTS

### Context

59. Stonehaven has currently reached a key threshold, hemmed in as it is by the sea to the east, the A90(TR) and various pipelines to the west and north, and the River Carron and Bervie Braes to the south. If it is to break free of these restraints, it must also take account of the thresholds set by the need to overcome a series of other constraints.

### Background Issues and Assumptions

60. The background assumptions can be summarised as follows.
- In theory development can take place anywhere provided the developer is prepared to pay enough to finance it. However, for practical purposes constraints fall into two significantly different categories:-
    1. "Absolute" constraints, which are so difficult to overcome that it is not worth considering development affected by them at all during the timescale under consideration. In other words, they are so serious that even if the financial cost could be raised, the resource and energy cost in terms of sustainable development would render the effort non-viable. This type of constraint itself comes in two forms:
      - those created by the cost (whether in terms of finance or sustainability) of overcoming technical or infrastructural limitations; and
      - those resulting from community perception (usually based on self-identification with some element of the unique identity of the community's environment – what gives it a recognised "sense of place").
    2. "Relative" constraints, which either can be overcome (at a cost) or need to be balanced against each other to achieve the least loss for the greatest gain.
  - In the case of "absolutes" it is always possible in the *very* long term that one of these constraints could become obsolete or that public perception could change. However, for the purposes of the current study, further consideration is unnecessary.
  - In the case of the gas and oil pipeline corridor to the west of Stonehaven, it is also true that HSE guidelines allow at least of the possibility of very limited one-off low-intensity forms of development. However, by its nature this would lead to an unsightly dispersed form of overall development that would be unlikely to cover its own infrastructure costs, and under no circumstances should be encouraged at the scale of this study.
  - All the remaining constraints (i.e. other than those listed as "absolute") are "relative". In other words they raise problems which can either be tolerated or resolved within reasonable limits of cost. The critical question then becomes which potential development sites raise the least problems of this kind. This question will be addressed by comparative analysis of the relevant sites affected by them in Part 2 of this study.

## Findings

61. The findings can be summarised as follows.

- For the purpose of the present study the following technical constraints fall into the “absolute” category. Although in any particular case a technical fix may theoretically be possible, the advice currently given by the relevant authorities in all these cases is that the costs (and/or the broader implications for sustainable development) are not likely to be worth while within the timescale of this study.
  - current alignment of the railway;
  - current alignment of the A90(TR);
  - difficulty of increasing the presently substandard capacity of the western access from Stonehaven onto the A90(TR), other than by relatively minor safety improvements;
  - safeguarded areas for the major gas and oil pipelines on the western side of Stonehaven, other than for *very* low intensity land-uses, such as farming or informal recreation; and
  - areas with potential to flood.
- The following constraints relating to community perception also fall into the “absolute” category:
  - the character of “Old” Stonehaven contained within its conservation area;
  - its associated historic and archaeological sites and their settings, such as Ury House and Dunnottar Castle;
  - Stonehaven’s sea frontage, from the harbour to the beach, promenade, heated open-air swimming pool and Cowie village;
  - the town’s coastal setting within its “bowl” of hills;
  - the town’s green; and
  - the town’s back-bone of existing parkland/public open space and “green corridors” radiating from the central core.
- These constraints are illustrated in Diagrams 1 and 2, which are used effectively as “sieve-maps” to generate a map of the key constraints in Diagram 3 (see end of Study).

## Conclusions

62. The conclusions can be summarised as follows.

- A number of constraints fall into an “absolute” category, in which to all intents and purposes development will be impossible during the timescale of this study: these include the current alignments of the railway, A90(TR), and the major gas and oil pipeline safeguarded areas west of Stonehaven; difficulty of increasing the presently substandard capacity of the western access from Stonehaven onto the A90(TR); areas with potential to flood; and the need to conserve features which create its “sense of place”: its historic core, sea frontage, setting on the coast and within its “bowl” of hills, and its green corridors radiating from the central core.
- All the remaining constraints are “relative” and will be addressed by comparative analysis of the relevant sites affected by them in Part 2 of this study.

## Part 2: Assessment of Options

### Context

63. Part 1 of this study identified a number of natural and technical constraints on development in Stonehaven. The sieve-maps (Diagrams 1 & 2) were then used to produce a Key Constraints map (Diagram 3), which effectively identifies the “absolute” constraints. In turn this yielded two general areas of search for land that is free from them: one in the north, and one to the south (Diagram 4 – see end of study).
64. In theory all locations free of absolute constraints *could* be developed at some stage. In these cases what is important is the *relative* strength of constraints and thus the *relative* priority or order in which development might be appropriate.
65. In Part 2 of this study these remaining areas have been sub-divided into 24 individual sites, defined by woodland, watercourses, roads etc. Each of these has then been assessed separately to give it a relative “score”, and the information arising from the resulting scores is then used to make the recommendations in Part 3 of the study.

### Background Issues and Assumptions

66. The criteria used in the assessment to provide the score are set out in a Goal Achievement Matrix (GAM). A GAM identifies different factors and awards them values. When summed, the overall value determines the viability of one site against another. It would be a mistake to award too much significance to the difference in overall rating of say, a single point, because, while some factors (such as line-of-sight distance) are strictly quantifiable, others (such as general amenity) are less so. Nonetheless general patterns can be established.
67. The GAM itself uses the following five criteria, which are based on the principles of sustainability: climate, energy, resources, social and bio-diversity. The principles and criteria are themselves based on the work developed for Index 21 (a joint research project by Aberdeenshire Council and Robert Gordon University – for further information see the internet site at <[www.index21.org.uk](http://www.index21.org.uk)>).
68. Each criterion in the GAM has a list of sub-criteria, numbered from 1-38, and each sub-criterion was assessed against three ratings, where a score of 1 is poor, 2 is average, and 3 is good – see Table 6 (after paragraph 72). A score of zero (completely unacceptable) is not awarded under any of the criteria, as such sites have effectively already been identified and removed in Part 1 of the study (see Key Constraints map, Diagram 3).
69. After each site has been assessed using the GAM, the score is converted to a percentage. The resulting percentages are then rated as follows:
  - 91-100% (excellent)
  - 81-90% (good)
  - 71-80% (average)
  - 61-70% (limited)
  - <60% (poor)

70. Sites that score ‘good’ or ‘excellent’ (above 81%) will be considered as the most likely areas for the expansion of Stonehaven in the first instance. Sites with an ‘average’ or ‘limited’ score will be recommended for expansion in later phases. However, sites with a score of less than 60% will not be considered for new development in the meantime. The scores themselves are detailed in Appendix 1.

### **Findings**

71. The findings can be summarised as follows:
- The two general areas of search produced 24 sites grouped in 5 localities:
    - Sites 1-3: Mains of Ury
    - Sites 4-6: Mains of Cowie
    - Sites 7-18: Toucks
    - Sites 19-22: East Newtonleys
    - Sites 23-24: Dunnottar
  - Given the parameters set, there is 75% more developable land than required to fulfil the growth assumed by the study.
  - The majority of sites will require water and drainage works, and improved road access to/from the A90 or Stonehaven. However, the GAM illustrates which sites require the least amount of work and create the most sustainable development.
  - Diagram 5 shows the results of the GAM. Half of the sites that were assessed by the GAM received an average score, from 71 to 80%. Only two sites received a ‘good’ or ‘excellent’ score, which are close to the town centre and existing services. Ten sites received a ‘limited’ score, and the majority of these sites were either on the periphery of the assessment area or adjacent to the A90(TR).
  - The top scoring sites were numbers 5 and 6 at Mains of Cowie (the north plateau opposite the caravan site), adjacent to the existing settlement, close to the town centre and bus routes. These sites were followed closely by site 24 (in East Newtonleys), as it is relatively close to existing services (e.g. Market Square), public open space, and the grade separated junction, and it is on an existing bus route.
  - Given how close the scoring is between these two areas(Mains of Cowie and East Newtonleys), the GAM score will not necessarily be the key determining factor, when it comes to their relative place in the phasing of development.
  - The sites that received a ‘limited’ or ‘poor’ score rating (under 70%) are located on the periphery of the assessment area, do not integrate well with Stonehaven, are not close to existing services or public transport, have poor road and/or pedestrian links into Stonehaven, or are likely to be affected by road traffic noise.

### **Conclusions**

72. The conclusions can be summarised as follows:
- In general terms, the GAM indicated higher scores for sites nearer the existing urban fabric. Therefore, development should commence with those sites within or nearest to Stonehaven.
  - The sites that are most acceptable to new development are: Mains of Cowie and the northernmost sites in Newtonleys, as they are in close proximity to existing services and public transport.
  - The sites in the Toucks and Mains of Ury areas did not score as well as Mains of Cowie, East Newtonleys or Dunnottar, but were not far behind. Toucks is the only area to provide the possibility of major expansion of the town.

- The sites that are considered inappropriate for new development are either located on the edge of the assessment area, as they are not in close proximity to existing services or on a bus route, or where road and/or pedestrian access to/from Stonehaven's town centre is limited.

**Table 6: Goal Achievement Matrix – Method of Scoring (see Diagram 5)**

Criteria	Sub-criteria	Scores		
		1 (Poor)	2 (Average)	3 (Good)
<b>Climate</b>				
● Shelter from cold winds	1. Planting or landform	The site is exposed.	The site is sheltered by either a tree plantation or by the form of the land.	The site sheltered by the topography of the land and by a tree plantation.
● Potential for passive solar gain	2. Direction of slope	A north or north-west facing slope, or overshadowed site.	East, south- east, or west facing slope.	South or south west facing slope.
<b>Energy</b>				
● Proximity to services – where there are multiple primary schools, choose one location (triangulation of all the schools) to create a school node.	3. Distance to Market Square via an access node	In excess of 3000 metres.	Between 1500 and 3000 metres.	1500 metres or less.
	4. Distance to employment node via an access node	In excess of 3000 metres.	Between 1500 and 3000 metres.	1500 metres or less.
	5. Distance to school node via an access node	In excess of 1200 metres.	Between 600 and 12 metres.	600 metres or less.
	6. Distance to public open space	In excess of 800 metres.	Between 400 and 800 metres.	400 metres or less.
	7. Opportunity to contribute new public open space (e.g. parks, sports areas, green corridors/links (including river corridors), or natural/semi-natural greenspaces (woodland or wetland areas) within or adjacent (within 400m) to the site – see PAN 65: <i>Planning and open space</i>	There is no potential for new areas of public open space within or adjacent to the site.	There is potential for one type of public open space within or adjacent to the site.	There is potential for two or more types of public open space within or adjacent to the site.
● Ease of providing public transport	8. Distance from railway station	In excess of 3000 metres.	Between 1500 and 3000 metres.	1500 metres or less.
	9. Distance to existing bus routes via an access node	In excess of 800 metres.	Between 400 and 800 metres.	400 metres or less.
	10. Suitability of the site for potential new bus routes to pass through	Does not allow through movement, eg a bus would have to double-back on itself.	Limited potential for through movement (e.g. an open but small site; and/or the nearest road is not suitable for buses without an upgrade).	High potential for through movement (e.g. an open and wide site; and/or the nearest road or any new road will be suitable for buses).
● Ease of pedestrian/cycle routes	11. Shortness of routes (average of the above scores for 3, 4, 5, 6, 8, and 9)	Total points scored = 7 or less.	Total points scored = from 8 to 12.	Total points scored = from 13 to 18
	12. Ease of slopes	Steep.	Gentle.	Flat.
● Ease of pedestrian/cycle routes continued	13. Avoidance of nasty crossing points	Access from the Town Centre to the site uses nasty crossing points.	Access to the town centre is across (over) the A90(T).	Access from the Town Centre to the site avoids nasty crossing points.
● Accessibility of business land	14. Proximity to railway via an access node	In excess of 3000 metres.	Between 1500 and 3000 metres.	1500 metres or less.
	15. Proximity to GSJ on a trunk road.	In excess of 1200 metres.	Between 600 and 1200 metres.	600 metres or less.

Table 6 (continued)

Criteria	Sub-criteria	Scores		
		1 (Poor)	2 (Average)	3 (Good)
<b>Resources</b>				
● Availability of water supply	16. Ease of providing water (Scottish Water information)	Land not very suitable for reservoir and/or water distribution upgrade.	Reservoir and/or upgrade of water distribution required.	Connection to existing water distribution required.
● Availability of drainage	17. Ease of providing drainage (Scottish Water information and whether Sustainable or Drainage Systems (SUDS) can be provided on the site)	Limited potential.	Few constraints.	No constraints.
● Avoidance of flooding	18. Flooding potential (information from our Flood Protection Team)	In a flood plain.	Adjacent to a flood plain.	Away from a flood plain.
	19. Likely spill-over downstream	Likely spill over downstream.	Possible spill over downstream.	Unlikely spill over downstream.
● Loss of natural and built resources	20. Quality of agricultural land lost (using Macaulay Land Institute land use maps)	Prime agricultural land (class 1 to 3.1).	Class 3.2 land.	Class 4 or above.
	21. Quality of biodiversity lost (data provided by North East Scotland Biological Records Centre)	Sites contains species and/or habitats of international importance.	Site contains species and/or habitats of national importance.	Site contains species and/or habitats of not protected or of local importance.
	22. Minerals sterilised	Site is within a quarry and/or the site may sterilise workable mineral reserves.	Site is adjacent to a quarry.	No quarry nearby.
	23. Historic buildings / designed landscapes and gardens / archaeological sites affected	Historic Building(s), Designed Landscapes and Gardens, and/or archaeological site(s) are destroyed.	Historic Building(s), Designed Landscapes and Gardens, and/or archaeological site(s) will be effected, altered, or partially removed (less than 10%).	No impact to Historic Building(s), Designed Landscapes and Gardens, and/or archaeological site(s).
● Limited waste of resources	24. Cost of overcoming constraints (what you have to do to the land for the whole 'area' to be developed (except water and drainage constraints))	A new grade-separated junction and/or a new bridge, or other major infrastructure.	Recontouring the land, road widening (of an existing road), and/or a new pedestrian bridge.	No work required.
	25. Provision of new services required (based on the amount of work required, e.g. a school or reservoir)	All new build. For example a school, water distribution upgrade, and a local service centre (retail).	Some work required (e.g. one or two new services).	No work required (except water connection and drainage).
● Likely resolution of existing problems	26. Enhancement of built or cultural heritage	The built and/or cultural heritage will be destroyed or detracted from.	No work will be done to the built and/or cultural heritage.	Potential for built and/or cultural heritage to be rebuilt, repaired or enhanced.

Table 6 (continued)

Criteria	Sub-criteria	Scores		
		1 (Poor)	2 (Average)	3 (Good)
<b>Social</b>				
● Accessibility of services.	27. Distance to Market Square via an access node (see Diagram 4)	In excess of 3000 metres.	Between 1500 and 3000 metres.	1500 metres or less.
	28. Distance to employment node via an access node (see Diagram 4)	In excess of 3000 metres.	Between 1500 and 3000 metres.	1500 metres or less.
	29. Distance to primary schooling via an access node (see Diagram 4)	In excess of 1200 metres	Between 600 and 1200 metres	600 metres or less
	30. Distance to OS	In excess of 800 metres	Between 400 and 800 metres	400 metres or less
	31. Provision of new services within the area (e.g. school, significant areas of open space, or other infrastructure of value to the town as a whole).	Development of the site would generate no significant new services.	Development of the site could help to generate some new services.	Development of the site could help to generate significant new services.
● Balance of community	32. Balance of land uses provided – its potential to provide different types and character of land use (such as high and low density employment, housing or retail land), as a result of sensitivity to scale, slope, distance, or noise considerations.	The site is only suitable for one land use.	The site is suitable for no more than two land uses.	The site is suitable for three or more land uses.
	33. Integration of new build with original town	Existing barriers such as the railway line or a trunk road.	Requires using bridge(s) and/or tunnel(s) or a new road/access.	No constraints (use existing or proposed open space)
● Sense of place	34. Response to genius loci “ <i>how do you feel</i> ”	No interesting features in the landscape, bare.	At least one interesting feature in the landscape.	Pleasant and interesting features in the landscape.
	35. Visual considerations, obscuration of view from key viewpoints, dwelling houses within the site	The settlement is not visible.	Less than half of the settlement is visible.	More than half of the settlement is visible.
	36. Disturbance from traffic	Adjacent to a trunk road, OR bounded on two sides by a trunk road or an A road.	Adjacent to an A road.	Not adjacent to an A road.
	37. Response to urban grain – will the site feel part of Stonehaven?	The site is separate from the town by distance or a barrier (e.g. A90).	The site is adjacent to the town, but it will feel detached (as a result of e.g. slope or other separation).	The site is within the town and is integral to it.
<b>Biodiversity</b>				
● Response to nature	38. Likely contribution to OS strategy	Small and/or linear site with no opportunity for public open space.	Linear or small area of existing open space adjacent to the site.	Plenty of open space in or adjacent, which can be incorporated in the site
<b>Totals</b>		<b>Score out of a possible 114</b>		

## Part 3: Recommendations

### Context

73. The recommendations in Part 3 of this study are based on:
- the key requirements and opportunities for development in Stonehaven set out in Part 1 of the study;
  - the “ absolute” constraints on development in Stonehaven also set out in Part 1 of the study;
  - the relative assessment of the merits of the remaining sites in Stonehaven set out in Part 2 of the study.

### Background Issues and Assumptions

74. The framework for the potential pattern of growth for Stonehaven is set out in a series of steps, as follows:
- a) Establish and characterise the *general locations* in which development is possible.
  - b) Establish the initial framework of *strategic open space* required for each of these locations in a way that contributes to the framework of Stonehaven as a whole.
  - c) Establish the framework for the *transport system* (and other distribution systems, as necessary), also in a way that contributes to the framework of Stonehaven as a whole.
  - d) Establish the framework of *local service centres* and their relation to Stonehaven’s town centre.
  - e) Identify sites for *employment*.
  - f) Identify sites for *housing* (ideally in groups of approximately 700 units each).
  - g) Identify thresholds and potential (or alternative) *phasing*.

### Findings

75. General Locations (see Diagram 5)
- Five localities are identified:
    - Mains of Cowie
    - Mains of Ury
    - Braehead/East Newtonleys
    - Dunnottar
    - Toucks
  - Of these localities, Dunnottar and East Newtonleys should be considered jointly; likewise Mains of Ury and the ‘Viaduct Site’ immediately across the A90(TR), notwithstanding the fact that the latter pair are on either side of the dual-carriageway.
  - While there is enough developable land to the south to accommodate the entire area hypothesised by the study remit, development to the north as well as the south would provide more alternatives and better satisfy sustainable, social, economic and amenity considerations.
76. Strategic Open Space (see Diagram 6)
- In so far as possible the framework has used and augmented the existing landscape structure of woodland and watercourses to reflect and reinforce the essential character of Stonehaven identified in Part 1.
  - Belts of shelter planting etc and significant surface watercourses have been utilised in formulating a system of green corridors, footpaths and cycleways,

which will connect the new development with the existing urban fabric all the way from the coast to the woodland defining the settlement's rim, in a continuous chain of linked loops, some of which could be Community Woodland, while other parts are public or privately maintained open space.

- 4 of the 16 hectares open space requirement have been incorporated in the overall housing land provision with another 6 hectares reckoned under the primary school playing field requirement, which will double for community provision in the service centres.
- A public park up to 6ha is proposed next to the service centre in Toucks, which otherwise would have no large area of accessible public open space, such as Mineralwell Park or Dunnottar Woods.
- A 0.75ha extension is proposed to the north-east of the existing cemetery.

77. Transport System (see Diagram 7)

- The prime consideration has been to maximise opportunity for public/green transport, in particular taking advantage of the green corridors in the open space framework (see paragraph 76 above) to provide pedestrian and cycle routes.
- Development to the north is in part dependent on provision of a new access onto and off the A90 in a southbound direction, to complement the existing northbound access. In turn this would allow closure to through traffic of the old A90 route by the coast.
- Development to the south is in part dependent on a new main through route up the slope of East Newtonleys, which would define the development area and allow the very winding existing route to revert to service access only.
- Development of the Toucks area is dependent on:
  - primary access from the existing grade-separated junction at Glasslaw;
  - the main service road providing a convenient public transport loop from the Glasslaw junction to the Broomhill Road bridge;
  - secondary access being provided to the existing western access onto the north bound carriageway of the A90 (the slip road onto which could be improved); while right turns across the existing bridge to loop around to the southbound carriageway would have to be prevented (other than for public transport going back into town), since the junction onto the southbound carriageway is substandard and cannot easily be improved.

78. Service Centres (see Diagram 7)

- Land has been designated for service centres in each of the three development areas, consonant with that area's size. It is located as far as possible at focal points of the green corridors and main public transport routes, as much as possible including the opportunity for subsequent expansion of the centre.
- The service centre in the northern area of development could also provide for town centre retail expansion, if the town centre itself is unable to accommodate it in the future.
- Primary schools would form part of the service provision:-
  - a) in either the East Newtonleys or Mains of Cowie locality (or possibly both, if Arduthie School ever needs to be replaced);
  - b) in the Toucks locality.
- In the first case, the choice would depend partly on the speed with which a replacement would need to be found for the existing Dunnottar School and which

of those two localities is likely to be developed in a phase to match. In the Toucks locality, the scale of development involved in this case would necessitate a new primary school in its own right.

79. Sites for Employment (see Diagram 8)
- Sites for employment are suggested for each of the general locations for development, both to ensure that some employment land will always be available, and to provide for some employment within walking distance of each new area of housing.
  - The specific locations have been suggested on the basis of:
    - proximity to a main junction off the A90;
    - accessibility to one of the main distributor roads and public transport routes.
80. Sites for Housing (see Diagram 8)
- Sites for housing are effectively suggested for all the remaining developable areas. However, the precise distribution has also been adjusted to allow for some housing land to be available at the start of each potential phase of development. The reason for this is that in most cases it is the high development value of housing that will provide the up-front costs of infrastructure needed for the development of the locality as a whole.
  - In general, higher densities of housing would be appropriate in close proximity to the service centres, green corridor pedestrian/cycle routes, and public transport routes, while lower densities and “executive housing” would be more appropriate further away.
  - In accord with the recommendation in paragraph 17 above, housing areas are divided into elements (by a change in land-use or other distinct boundaries), none of which exceeds 700 dwellings. The areas proposed for more dense development also meet the standards set in paragraph 19 above.
81. Potential Phasing (see Diagram 9)
- The order of phasing is based initially on the scores established by the Goal Achievement Matrix in Part 2 of this study. In strict order this would suggest Mains of Cowie/Mains of Ury, followed closely by East Newtonleys/ Dunnottar, with the development of Toucks following only when a major expansion of the town is required.
  - However, development of the northern locality may only be appropriate if accompanied by the provision of a new south-bound access off and onto the A90: this should be feasible, but may take a considerable time to set up. On the other hand development up the slope of East Newtonleys has already started. Moreover, if any priority is to be given to the replacement of Dunnottar School or to the provision of new employment land for the town (ie by enabling development of the employment site already identified as EmpB in the Aberdeenshire Local Plan), then the first phase would have to be at East Newtonleys/Dunnottar.
  - This illustrates the fact that the phasing suggested in this study should not be accepted as immutable. Alternative phasing from the preferred sequence may well be necessary in due course, depending on the precise requirements of the Development Plan and the situation on the ground at the time. This study aims to do no more than identify the options for development.
  - Apart from consideration of enabling the school and employment land, development of East Newtonleys/Dunnottar would also be dependent on re-

routing the main distributor road along the eastern side of the development, and on provision of improved road access into the Dunnottar sites. Moreover, if this area were to be developed first, it might also provide the best alternative to the town centre (i.e. if there are no viable alternatives in or by the town centre itself) for retail expansion.

- If more time is available until the school, employment land and any major retail facilities are required, the service centre at Mains of Cowie could be an even better location for both the school and an extension of the town centre (again, if there are no viable alternatives in the town centre itself). The site is prominent, but its development for public buildings of this kind could provide a landmark to balance the War Memorial on Black Hill.
- Introduction of southbound on/off access to the A90(TR) will provide the second grade-separated junction the town needs, and the knock-on effect will benefit the whole town. For this reason it may be appropriate to require developer contributions towards its construction from all sites considered in this study.
- Development of the Toucks area would only be appropriate after the East Newtonleys area, and if a large extension of Stonehaven is envisaged; but it is also the *only* area that could provide for a large extension of the town. In turn its own development could proceed in phases, moving out from the Glasslaw junction. Development of the framework of green corridors could actually begin with preparatory projects before any other work on site. Otherwise the “employment zone” should be enabled at the start, with the local service centre and the public transport loop back across the Broomhill Road bridge following as soon as practical thereafter.
- The study envisages development over the plan period requiring c.150ha in all. An additional 110-115ha could also be developed (mostly at Toucks), if required in the longer term without seriously prejudicing the town’s setting (Diagram 7).

## Conclusions

82. On balance the phasing recommended would be:
1. East Newtonleys/Dunnottar
  2. Mains of Cowie/Mains of Ury
  3. Toucks
83. A certain amount of infrastructure will be required for the development of any of these localities. In each case, for instance, this will include adequate water supply and drainage capacity, and the normal roads and open space provision. Table 7 below also gives an indication of additional infrastructure requirements that would be specific to each locality.
84. In conclusion, the development as set out in this study will benefit the town economically and socially. It will complement the town’s setting, and is fully consistent with the Council’s position on sustainability.

**Table 7: Infrastructure Required at Each Locality**

<b>Locality</b>	<b>Infrastructure Required</b>	
East Newtonleys/ Dunnottar	Open Space and Greenways:  Transport:  Education:  Water Supply: Drainage:	Acquire as necessary and develop management of Woods of Dunnottar, the watersides of the Carron and Toucks Burn, the plantation by E Newtonleys, and all associated green corridors.  New main distributor road east of Newtonleys. Improved access into Dunnottar.  Replacement of existing Dunnottar School at E Newtonleys.  Water mains distribution system needs up-grading. Extensive off-site sewerage, waste water treatment plant up-grade and appropriate SuDS all required.
Mains of Cowie/ Mains of Ury	Open Space and Greenways: Transport:  Education:  Water Supply:  Drainage:	Acquire as necessary and develop management of the Cowie valley to Glen Ury and associated green corridors.  New access onto/off A90 south-bound carriageway. Close off existing south-bound slip-road from A90.  Replacement of existing Arduthie School, if necessary at Mains of Cowie.  Water mains distribution system needs up-grading for Mains of Cowie.  Extensive off-site sewerage, waste water treatment plant up-grade and appropriate SuDS all required.
Toucks	Open Space and Greenways:   Transport:   Education:  Water Supply: Drainage:	Acquire as necessary and develop management of woods at Glasslaw, Hill of Seabeg, Greenhill, Touck's Belt, Berry Brae and associated green corridors. Develop 6ha public park, and extend existing cemetery.  New main distributor road from Glasslaw junction to the unclassified 70C Bardspark road, with a slip road completing the public transport loop back across Broomhill Road bridge.  New school, service and possible medical centre at Toucks.  Water mains distribution system needs up-grading. Extensive off-site sewerage, waste water treatment plant up-grade and appropriate SuDS all required.