



Ashford's Footprint: Now and in the Future

SETTING THE SCENE

In 2007, Ashford's Future together with Ashford Borough Council, WWF-UK and English Partnerships commissioned SEI to quantify the environmental consequences of Ashford's growth using Footprint Analysis. The aspiration is that this project will set the foundations for delivering a programme that will see Ashford achieve a one planet future.

Ashford is one of the government's 'key growth areas', the scale of house building planned for the area means that it is set to almost double in size. Ashford's development frameworks recognise that this provides a real opportunity to contribute to the UK's sustainable development agenda. This footprint report supports Ashford's plans by recommending use of the full range of planning and development mechanisms to encourage more sustainable lifestyles. These mechanisms must be used in an innovative way to tackle a wide range of consumption behaviours; including reducing energy use in the home, encouraging sustainable travel and supporting healthy, low carbon diets.

ASHFORD'S FOOTPRINT

The ecological footprint is an indicator of resource use; it measures our demand on the earth's resources and expresses this as an area of land. The world average ecological footprint is 2.2 global hectares per person (gha per capita). The amount of land available per person globally is 1.8 global hectares¹. This means that humanity's demand for resources is greater than the biologically productive land available to supply it.

In this study, Footprint Analysis is used to measure the direct and indirect environmental consequences of the way residents of Ashford live. Today, Ashford's ecological footprint is 5.99 gha per capita. This is smaller than the average footprint of the South East of England but higher than that for the UK. It also means that the average Ashford resident lives a three planet lifestyle; that is the number of planet earths that would be needed if everyone in the world lived the same way. Clearly we do not have three planets to support us and this is why we need to aim for a one planet future.

¹ Global Footprint Network have calculated the amount of biologically productive area on earth, and divided it equally amongst the world population.

The ecological footprint demonstrates the global impacts associated with our consumption activities. But these impacts are no longer distant, constrained to rainforests or rivers on the other side of the world. They are now truly global and no issue demonstrates this more than climate change. To reflect this, the study also looks at Ashford's carbon footprint, which is a measure of carbon dioxide emissions (both direct and indirect). The current carbon footprint of Ashford is 13.15 tonnes per person, mirroring the ecological footprint in being higher than average for the UK but lower than average for the SE region. The UK Climate Change Bill sets targets for a 60% reduction in carbon dioxide emissions by 2050 but many scientists and organisations argue the target should be an 80% reduction².

Footprint analysis should not be used as a sustainable development indicator alone and waste and water issues need to be considered separately. In this report waste and water do not contribute to the any of the scenarios.

² This is an ongoing debate and the government is currently reviewing the 60% target.

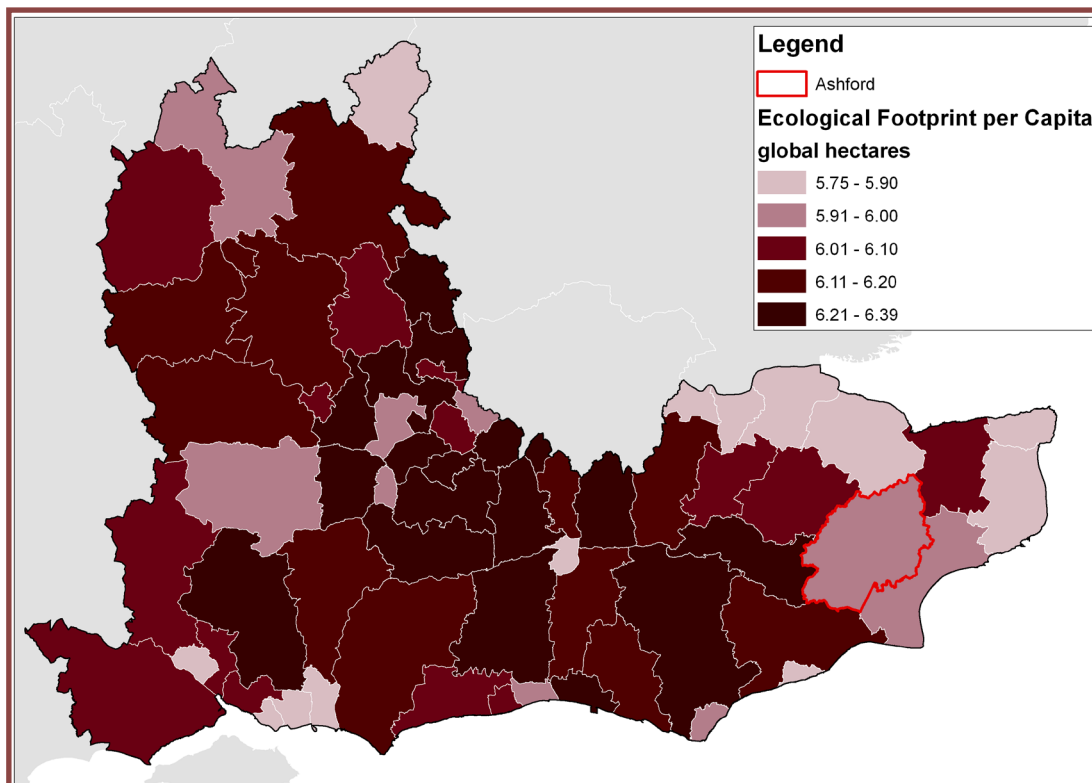


Figure 1: The South East's ecological footprint

CREATING SCENARIOS

To explore how Ashford's Footprint may change this report sets out four footprint scenarios. Each scenario has a 30 year time frame from 2001 to 2031 and each is applied to the housing, transport, food and consumables components of the Carbon Footprint

Modelled Scenarios

Two scenarios are modelled, using trend based data and assumptions about the impact of Ashford's policies.

- The Continuing Trends scenario shows what may happen to Ashford's footprint if the planned expansion of the town goes ahead without any policy intervention. In this scenario the Local Transport Plan would not be implemented and the new Code for Sustainable Homes would not come into force. At the same time historical trends in consumption behaviour are assumed to continue
- The Policy Intervention scenario demonstrates the potential impact of selected local and national policies. In this scenario the New Code for Sustainable Homes is implemented, Local Transport Plan targets are met and the Local Development Framework is implemented. This scenario measures the impacts of specific policies or targets. Aspirations for a sustainable future are not measured unless they are specifically supported by steps designed to achieve this.

For the modelled scenarios it is important to take into account that technological improvements in the supply chain will play a role in reducing Ashford's footprint over time. The modelled scenarios have been created with upper bound (worst case) and lower bound (best case) assumptions on the impact of improved production efficiencies. This indicates the extent to which a 'technical fix' may make a difference to Ashford's footprint by 2031 but the further we project trends into the future the more difficult it is to account for future innovations.

Target based scenarios

The final two scenarios are modelled to show the change in consumption behaviour required to meet the following targets:

- A 60% reduction in carbon dioxide emissions by 2050. This is described as the Government Target scenario and is based on the Energy White Paper's 60% reduction target.
- An environmentally sustainable Ashford by 2050 where each person in Ashford requires just 1.8 global hectares to sustain their lifestyle for one year. This is described as the One Planet Ashford scenario.

Reducing the ecological footprint to 1.8 gha is almost exactly equivalent to reducing carbon footprint by 80%. Recent scientific opinion states that in order to ensure that temperatures do not increase by more than 2 degrees Celsius, we need to see an 80% reduction in carbon dioxide emissions. 1.8 gha is the planet's land area divided by the

global population. In reality, this figure is likely to reduce by 2050 due to population rise. This would make the challenge of a one planet future even greater.

Because these are target based scenarios, the changes modelled may be based on policy interventions that are yet to be considered in Ashford or expand on existing ones. For the food and consumables chapters there is limited evidence available on practical measures that can bring

about such large reductions in the footprint. For these scenarios the changes in consumption patterns shown are illustrative of what is required.

Best case technological improvements are assumed in both target based scenarios. As they are target based they are not presented with upper and lower bound variations.

Table 1: Calculating 2031 scenario targets

Scenario	Starting point (2001)	Reduction target	2031 target	2031 footprint target
Government Target	13.15 tonnes carbon dioxide per capita	60 percent reduction in CO2 by 2050	40 percent reduction in CO2 by 2031	7.88 tonnes per capita
One Planet Ashford	5.99 gha per capita	Reduce ecological footprint to 1.8 gha by 2050 (1 planet)	47 percent reduction in gha by 2031	2.80 gha per capita (1.6 planets)
	13.15 tonnes carbon dioxide per capita	80 percent reduction by 2050	54 percent reduction by 2031	6.04 tonnes per capita

THE SCALE OF THE CHALLENGE

There is clearly a lot to be done to bridge the gap between the current size of Ashford’s footprint and the future aspirations. The scale of growth planned for Ashford provides an opportunity to encourage lower footprint living. To illustrate the scale of the challenge ahead a number of ‘target based’ scenarios have been created. The scenarios illustrate the scale of change needed in Ashford to meet ‘one planet’ and climate change targets by 2050. The scenarios run to 2031, the period covered by the Greater Ashford Development Framework, and show that:

- Ashford’s baseline ecological footprint today is 5.99 gha per capita, it needs to decrease by 47% by 2031 to meet ‘One Planet’ targets by 2050.
- Ashford’s carbon footprint is 13.15 tonnes per capita, it needs to have decreased by 54% in 2031 to be in line with an 80% reduction in carbon dioxide emissions by 2050.



POLICY SCENARIO RESULTS

To illustrate the potential for existing actions to reduce Ashford's footprint this report documents the results of policy scenarios for housing, personal travel, food and consumables.

Ashford has already introduced measures that will go some way towards stabilising its footprint and moving it in the right direction. High profile national policies, for example the new Code for Sustainable Homes, are being introduced early. Ashford also has clear policies to improve public transport supported by modal shift targets.

Housing results

The sheer number of houses built by 2031 will have completely transformed the nature of Ashford's housing stock. The planned introduction of the new Code for Sustainable Homes increases the impact of this transformation:

- A 39% reduction in the carbon footprint of housing is possible by 2031 based on existing housing policy. This is just short of being on course to meet government targets by 2050
- Ashford would be on the right path to meet the 2050 government targets if it increased the number of houses with a condensing boiler by a further 5% by 2031.

Personal travel results

In spite of national policy aimed at encouraging sustainable travel behaviour and modal shift, personal travel is regularly described as the worst performing sector in the UK from a carbon dioxide emissions perspective. Bucking the national trend, Ashford has a number of positive initiatives

to encourage sustainable travel including the public transport scheme SMARTLINK. These should bring about a reduction in the footprint of personal travel (not including air travel).

- The best case scenario for existing policy interventions is a reduction in the carbon footprint of 22% by 2031
- To be on the right path to meet the 2050 government targets a further 18% reduction is needed by 2031

Food and consumables results

Housing and personal travel are areas that traditionally fall under a local authority's remit but there are other areas where action is required. The food chain contributes 18% of the UK's greenhouse gas emissions and makes up the largest component of Ashford's ecological footprint. Spending on consumables accounts for 15% of Ashford's carbon footprint whilst the UK is experiencing record levels of personal debt. Because there is limited scope in local policy to influence these areas, this report provides 'continuing trends' scenarios. These scenarios show a potential reduction in footprint based on supply chain efficiency improvements. To meet the target based scenarios:

- A further 11% reduction in the food footprint is needed by 2031 to be on the right path to meet the 2050 Government carbon emissions targets. A 25% reduction is needed for one planet Ashford targets
- Supply chain improvements are much the same for consumables. A further 10% reduction in the footprint of consumables is needed by 2031 to be on the right path to meet 2050 government carbon emissions targets

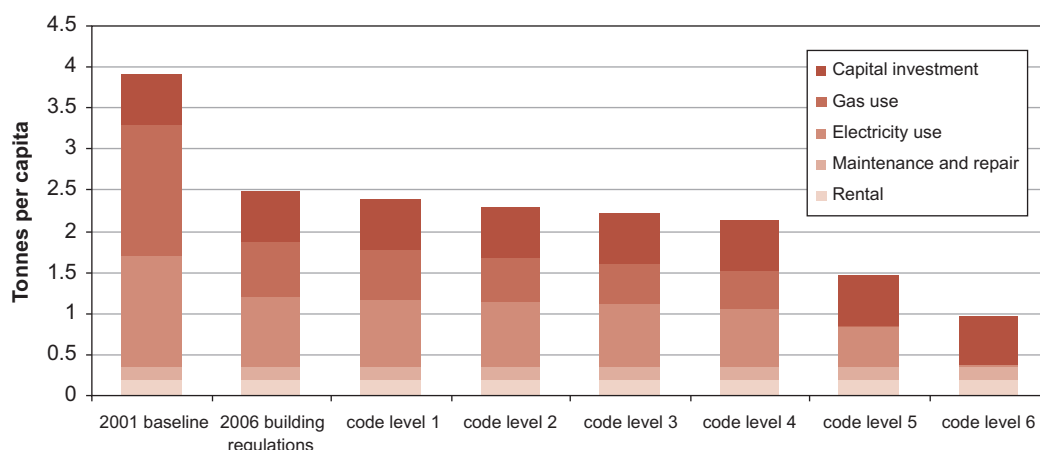


Figure 2: Carbon footprint of housing by type

OVERALL SCENARIO RESULTS

In a best case scenario Ashford's footprint will have reduced by 17% to 4.96 gha per capita by 2031. This puts Ashford in a position to meet and build on regional targets for stabilisation by 2016.

Scenarios are not predictive; they only show what may happen given changes to a limited number of known variables. The results show that Ashford is moving in the right direction but there is a risk that the ecological footprint could increase by as much as 6% by 2031 to 6.34 gha per capita. This could happen if existing policies are not implemented successfully or if there are minimal improvements in the efficiency of the supply chain. Alternatively other factors and the introduction of further policies may decrease Ashford's footprint further.

Although existing policies appear to fall short of the reductions required in the target based scenarios there is more that Ashford can and will do before 2031. The scale of change required is challenging, but Ashford has one clear factor in its favour; it is 'best placed' to embrace large scale change because it is a growth area.

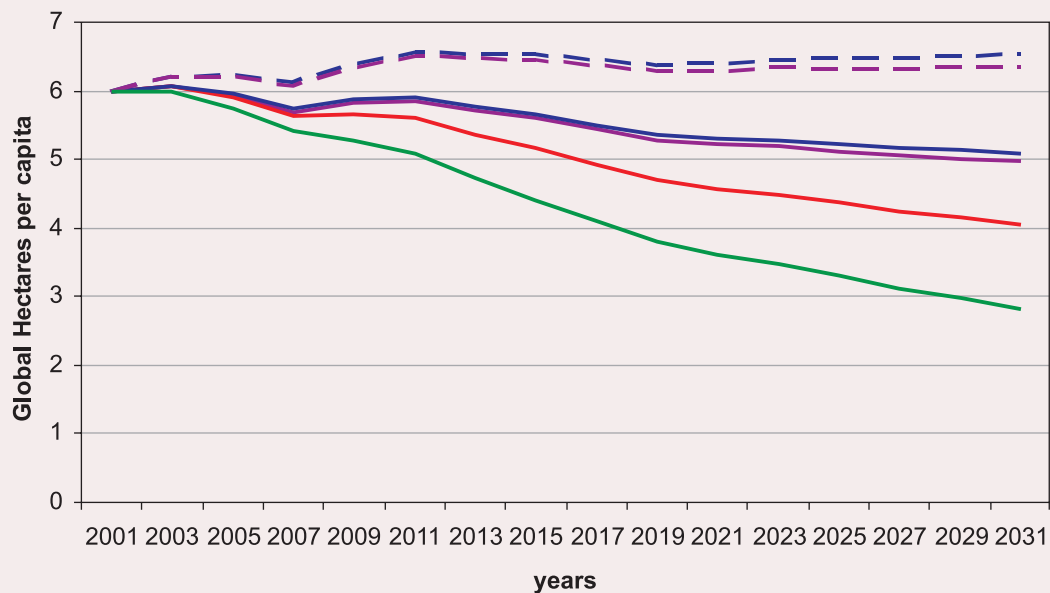


Figure 3: Change in ecological footprint under 4 scenarios

Key	Scenario	2031 Footprint per capita	Percentage change	How many planets?
— — .	Continuing trends (upper bound)	6.52 gha	+9%	3.6
- - - .	Policy intervention (upper bound)	6.34 gha	+6%	3.5
— — —	Continuing trends (lower bound)	5.09 gha	-15%	2.8
— — — —	Policy intervention (lower bound)	4.96 gha	-17%	2.8
— — — — —	Government target	4.05 gha	-32%	2.2
— — — — — —	One planet Ashford	2.82 gha	-53%	1.6

Meeting the challenge

RECOMMENDATIONS FOR THE SHORT TERM

To set Ashford on the path towards low footprint living it is important that existing initiatives are expanded or supported by complimentary activities. The existing planning framework includes policies which should increase the scale of footprint reduction. The following recommendations provide examples of what more Ashford could be doing now, in the short term. They reinforce the importance of planned schemes such as the Carbon Community Fund which will allocate funding and developer contributions to local carbon offset projects. Schemes such as this need to be introduced on a large enough scale to make a difference to the footprint of the area as a whole. By doing so Ashford will set an example for other local authorities in the South East and beyond:

Recommendation 1: Continue to utilise and expand the application of all planning mechanisms to encourage sustainable lifestyles. For example:

- Review the policy timetable for implementing code level 6 and consider the potential for introducing it early. The Welsh Assembly Government aspires to introduce code level 6 by 2011. The South East Diamonds (growth points) plan introduction by 2014.
- Introduce 'energy offset zones' in Ashford by linking areas of new development to areas of existing housing. For every new house built below Code for Sustainable homes level six, funding or support in kind should be provided to improve the energy efficiency of an existing home in the energy offset zone.
- Use planning guidelines to further restrict individual car use and provide infrastructure for alternatives. Namely require that car club facilities are designed into all new developments of over 250 units and reduce parking ratios to 1 parking place per house or

less where good public transport alternatives can be provided.

- Promote and support initiatives that enable people to adopt a low footprint diet and reduce food waste.
- Provide community garden space in medium and large sized new developments. Encourage vegetable growing schemes in schools and link community allotments to health and community support schemes.
- Create and support high profile community reuse partnerships for reusable goods such as household appliances, computers, furniture and clothes

Recommendation 2: Adopt regional targets for footprint stabilisation and reduction. Consider the opportunities for making this a high profile campaign which involves public and private sector partners as well as Ashford residents. Explore opportunities for:

- Branding the campaign and linking all existing footprint reducing activities to it in a consistent fashion.
- Encouraging community involvement in the form of pledges, idea boxes or community events. Use local media to promote existing schemes and success stories related to the full range of footprint reducing activities.
- Securing footprint reduction as part of the Ashford story - something that Ashford can shout about.
- Engaging with footprint activities throughout the South East including those being taken by the Diamond Growth Points, Kent County Council and the South East Regional Assembly (SEERA) and South East Regional Development Agency (SEEDA).
- Measuring the consumption impacts of households so that footprint policies can be targeted effectively.



Meeting the challenge

RECOMMENDATIONS FOR THE LONG TERM

The report recommendations demonstrate what can be done now. Ashford will be on track to meet one planet standards if it can implement the recommendations and create the following conditions:

Housing conditions

- All new homes built from 2011 onwards are built to code level 6 energy performance standards
- All existing homes have double glazing, condensing boilers and loft and cavity wall insulation by 2016
- The introduction of smart energy measures and targeted campaigns reduces average energy consumption in the home by 15% due to behaviour change

Personal travel

- Effective mechanisms to reduce the need to travel have been introduced. The average distance people have to travel is 2kms for shops and 1km for school by 2031. 12% of the population work from home and 70% travel 0 to 5km to work.
- Modal shifts exceed present Ashford targets. The car is used by a minority of users for journeys under 2kms for all purposes.
- Policy and behaviour change mean two person car occupancy is the norm and over a whole day buses and trains are on average 50% full (rather than current levels which are nearer 25% over a whole day)
- The train is promoted as the mode of choice for long distance and foreign travel rather than air travel.
- Increased internet access means that more residents use internet delivery for their shopping.



Food

- High carbon food products take up a smaller proportion of resident's diets. Fruit and vegetables make up 40% of the diet, in part supported by community health and allotment schemes
- Food waste is minimised, reducing the amount of food purchased by up to 25%.

Consumables

- Expenditure on large purchases (computers, household appliances, furniture), reduces in some areas by up to a third. This is supported by re-use and rental schemes which are cheap, convenient and popular to use.

These conditions are based on the report's One Planet Scenarios. They are illustrative and only take into account the size of Ashford's ecological and carbon footprint. Wider economic and social issues also need to be considered, as well as other environmental aspects, such as water and waste.

The scenarios also presume that reductions in the footprint of Ashford need to be equal across all policy areas. This is not necessarily the optimum approach to reducing Ashford's footprint: it may be more cost effective to focus on some areas of the footprint more than others.

The conditions described here are intended to start off the debate. Ashford and its partners have the opportunity and the means to bring about large scale footprint reductions.



The Footprint data and projections used in this report have been calculated using the REAP software tool licensed by SEI. Ashford have a two year REAP licence to update and build on this analysis. To read more about Footprint Analysis, and the data and methodologies behind REAP visit the dedicated website and user forum at: www.sei.se/reap.

www.sei.se/reap

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WWF

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Many people associate WWF with wildlife and wild spaces, but there's a lot more behind the Panda. Conserving species and protecting habitats are still on the agenda, but if we are to achieve our mission - a future with which people live in harmony with nature - we also need to address global threats, such as unsustainable consumption and pollution. In the UK, WWF works with government, business and civil society to find long-term solutions to the environmental challenges we face. We are pleased to support Ashford in their developing work on ecological footprint.

THE STOCKHOLM ENVIRONMENT INSTITUTE (SEI)

SEI is an independent, international research institute specializing in sustainable development and environment issues. It works at local, national, regional and global policy levels. The SEI research programmes aim to clarify the requirements, strategies and policies for a transition to sustainability. These goals are linked to the principles advocated in Agenda 21 and the Conventions such as Climate Change, Ozone Layer Protection and Biological Diversity. SEI along with its predecessor, the Beijer Institute, has been engaged in major environment and development issues for a quarter of a century.

MISSION

SEI's mission is to support decision making and induce change towards sustainable development around the world by providing integrative knowledge that bridges science and policy in the field of environment and development.

The SEI mission developed from the insights gained at the 1972 UN Conference on the Human Environment in Stockholm (after which the Institute derives its name), the work of the (Brundtland) World Commission for Environment and Development and the 1992 UN Conference on Environment and Development. The Institute was established in 1989 following an initiative by the Swedish Government to develop an international environment/development research organisation.

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