

Waltham Forest LSP

# climate change

Strategy

September 2008



## Abbreviations/Terms of Reference

AD	Anaerobic Digestion
BAT	Best Available Technology
BERR	Department for Business, Enterprise & Regulatory Reform
BREEAM	Building Research Establishment Environmental Assessment Method
BSF	Buildings Schools for the Future
CCS	Climate Change Strategy
CfSH	Code for Sustainable Homes
CHP	Combined Heat and Power
CPZ	Controlled Parking Zone
DEFRA	Department for Environment, Food and Rural Affairs
EqIA	Equalities Impact Assessment
ESCo	Energy Services Company
EST	Energy Saving Trust
GLA	Greater London Authority
GoL	Government Office for London
GSHP	Ground Source Heat Pump
HECA	Home Energy Conservation Act
IGCC	Integrated Gasification Combined Cycle
IPCC	Intergovernmental Panel on Climate Change
IPPC	Integrated Pollution Prevention and Control
ktpa	Kilotonnes per annum
LAA	Local Area Agreement
LBWF	London Borough of Waltham Forest
LCBP	Low Carbon Buildings Programme
LDA	London Development Agency
LDF	Local Development Framework
LECI	London Energy and Carbon dioxide emissions Inventory
LIP	Local Implementation Plan
LSP	Local Strategic Partnership
NAEI	National Atmospheric Emissions Inventory
NLWA	North London Waste Authority

NO <sub>x</sub>	(Mono-)Nitrogen Oxide(s)
PPS	Planning Policy Statement
ROC	Renewables Obligation Certificate
SUDS	Sustainable Drainage Systems
SCR	Selective Catalytic Reduction
SCS	Sustainable Communities Strategy
SPD	Supplementary Planning Document
TfL	Transport for London
UCO	Used Cooking Oil
UKCIP	UK Climate Impacts Programme
UDP	Unitary Development Plan

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## 1 Introduction

### 1.1 Introduction

Upon winning the Nobel Peace Prize, Al Gore described climate change as a threat which is “real, rising, imminent, and universal”. In the same speech, he also said “we have the ability to solve this crisis and avoid the worst – though not all – of its consequences, if we act boldly, decisively and quickly”<sup>1</sup>. Climate change has been recognised as one of the gravest threats ever faced by mankind. It can be, and needs to be addressed in an urgent manner.

Action on climate change is both possible and necessary at all scales of human activity, from international agreements to individual actions. Local Strategic Partnerships, Local Authorities, businesses and communities are a key link in this chain between individual and national responsibility.

Waltham Forest’s Climate Change Strategy (CCS) defines what needs to be done in the local area to contribute to the battle against climate change through resource efficiency, emissions reductions and behavioural change to help reduce future climate change and to adapt to the climate change impacts which are already inevitable.

This Climate Change Strategy (CCS) is a Local Strategic Partnership (LSP) initiative, overseen by an external Task Force, and led by the Council who have already adopted a motion on climate change for its own operations. All LSP partners need to show community leadership in tackling climate change by reducing CO<sub>2</sub> emissions and adapting to the increased risk of climate impacts resulting from historic and future carbon emissions.

The Climate Change Strategy forms part of the Waltham Forest Sustainable Communities Strategy (SCS) and seeks to deliver the three climate change actions contained within it. The primary aims of the SCS are to create wealth, retain wealth and manage population change. The actions on climate change within the SCS are:

- To involve residents and businesses and the public sector in reducing landfill waste, energy use and carbon emissions.
- To promote sustainable forms of private and public transport.
- To ensure new developments and existing public sector buildings are environmentally sustainable.

It complements the Mayor of London’s Climate Change Action Plan showing how Waltham Forest will contribute, as part of the world city of London, to reducing carbon emissions and bringing about the cultural and infrastructure changes which are necessary to ensure Waltham Forest, and London more widely, are configured to cope with future conditions.

<sup>1</sup> Nobel Peace Lecture 2007, Al Gore. [nobelprize.org/nobel\\_prizes/peace/laureates/2007/gore-lecture\\_en.html](http://nobelprize.org/nobel_prizes/peace/laureates/2007/gore-lecture_en.html)

Implementation of the Waltham Forest LSP Climate Change Strategy will be reviewed on a three-year cycle to accord with the Local Area Agreement (LAA) timescales and action to meet the National Indicator 186 (reduction in per capita carbon emissions) targets contained within it.

Action is also to be taken on the other three climate change national indicators, including NI 188 on adaptation. The Council intend to have produced a baseline (level zero of the NI) by March 2009, and are seeking to achieve ongoing progress from this point forward.

The Council is already taking action on climate change within its own operations as evidenced by the December 2007 Council motion “Tackling Climate Change in Waltham Forest” which covers such areas as increased insulation and energy efficiency in buildings, staff awareness raising campaigns, actions on bio-diversity and introduction of a WF ‘bag for life’ scheme.

## 1.2 Summary of footprint report

In 2007, SEA Renue produced a carbon footprint study for the London Borough of Waltham Forest<sup>2</sup> to establish baseline CO<sub>2</sub> emissions. This included emissions from council activities and also the overall emissions from the borough as a whole based on Defra and LECI datasets.

The results of this study showed that the emissions from all activity in Waltham Forest produced 1,089 kilotonnes of CO<sub>2</sub> in 2005<sup>3</sup>, of this 479 kt (44%) are domestic emissions, 295 kt (27.1%) are from the industrial and commercial sector and the other 313 kt (28.7%) are from road transport.

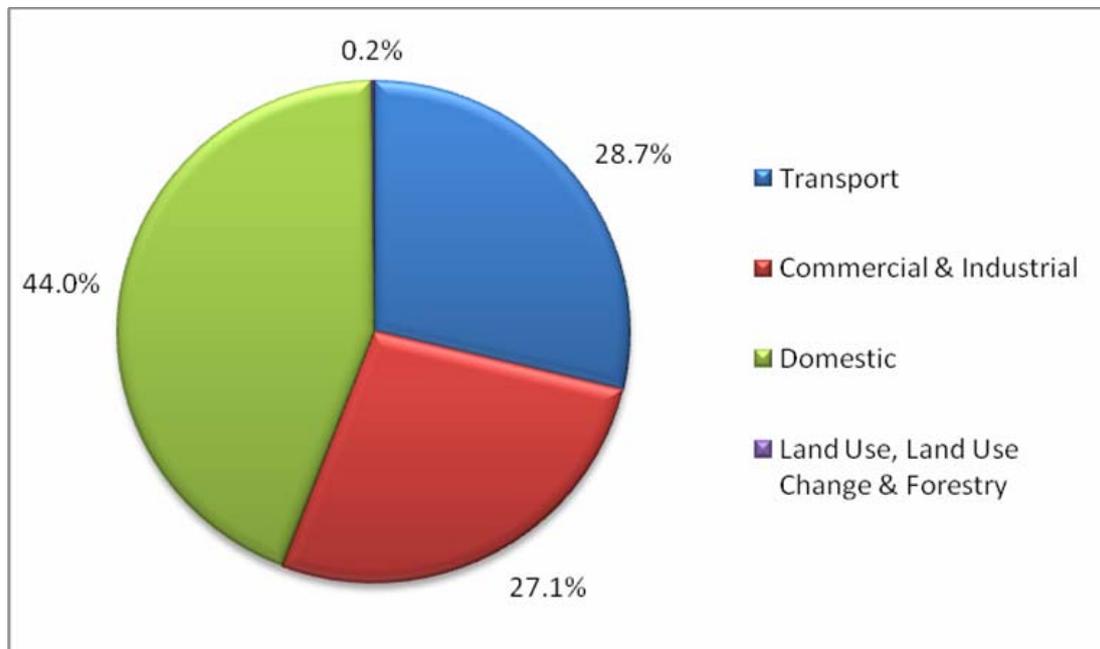
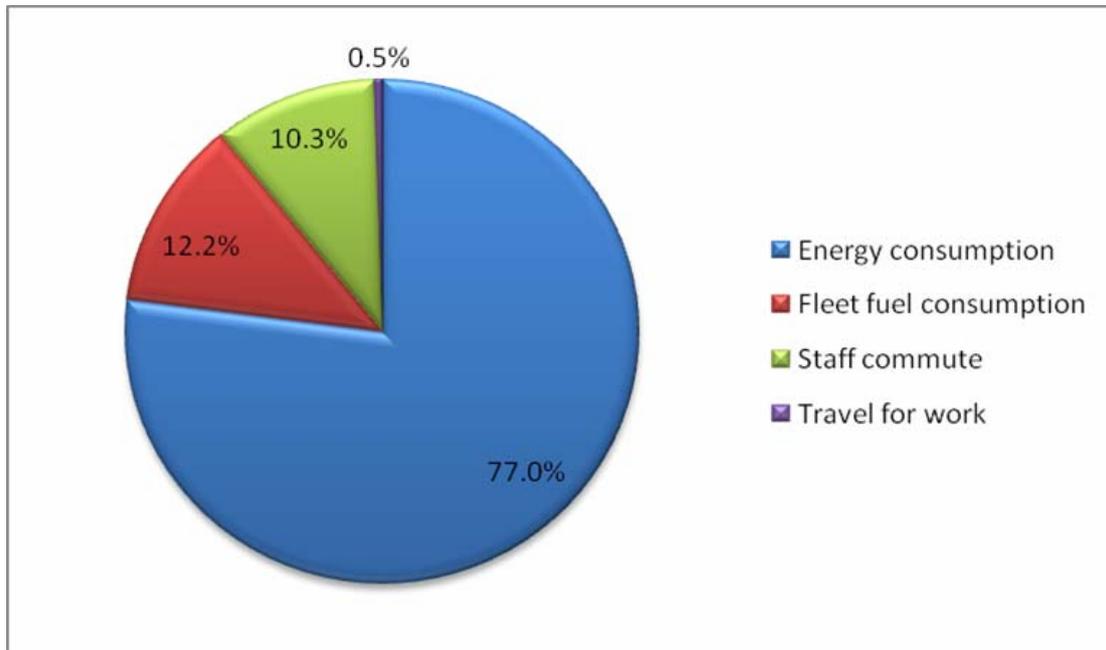


Figure 1 Proportion of total emissions for Waltham Forest by sector (Defra, 2005)

<sup>2</sup> Waltham Forest Carbon Footprint, SEA Renue, 2007. [www.walthamforest.gov.uk/lbwf-carbon-footprint-jan08.pdf](http://www.walthamforest.gov.uk/lbwf-carbon-footprint-jan08.pdf)

<sup>3</sup> Emissions of carbon dioxide for local authority areas, Defra. [www.defra.gov.uk/environment/statistics/globalatmos/galocalghg.htm](http://www.defra.gov.uk/environment/statistics/globalatmos/galocalghg.htm)

Council operations account for 40.7 ktpa; 4% of overall emissions from Waltham Forest. 77% of Council emissions result from energy use in buildings and street lights with the remainder relating to transport, including staff commuting.



**Figure 2 Carbon footprint of council operations (SEA Renue, 2007)**

Per capita CO<sub>2</sub> emissions in Waltham Forest are the second lowest in London, however they are still well above the level of a global per capita 'fair share'.

### 1.3 Aims and objectives

The climate change strategy seeks to produce a scenario by which Waltham Forest can attain an 80% CO<sub>2</sub> emissions reduction on 2005 levels by 2050 to mitigate climate change.

Simultaneously, the CCS seeks to achieve cost effective and proportionate adaptations to address climate related risks for the as shown in the action plan.

The approach specified by LBWF was comprehensive in that it looked at both Council and borough wide activity. Mitigation and adaptation assessment were required and it covered broader environmental impact issues, not just carbon savings.

There are six working groups within the Council which reflect the themes of the CCS; targeted information was gathered from these groups to feed into the development of the climate change strategy. In addition, there was also extensive stakeholder consultation with external bodies and key sectors of the community. Using this information and expert knowledge, an action plan setting out a series of measures that could lead to satisfactory adaptation and mitigation in Waltham Forest has been developed.

An equalities impact assessment was required to sit alongside the Climate Change Strategy and proposed actions from the strategy were assessed based on their impact across the six equality themes of race, gender, disability, age, faith and sexuality.

The LBWF Working Groups are:

- Planning and housing
- Transport
- Buildings
- Waste and recycling
- Energy and procurement
- Managing natural habitats
- Communications and Outreach (additional)

As a strand of Council and LSP activity which has been growing rapidly and will continue to grow rapidly, climate change action does not yet have a sufficiently large budget to implement all the actions identified. Action on climate change cuts across virtually every sector. It will be important to identify opportunities within existing work streams for work with climate change benefits. This would enable more rapid progress on climate change by putting the existing structure of the Council and LSP to best use. For example walking and cycling could be promoted as part of a preventative healthcare strategy.

Through the stakeholder engagement work, the package of measures proposed to achieve the targets of the climate change strategy to 2050 has been refined. The aim has always been to set an ambitious yet achievable target with realistic goals for key milestone years. The strategy has been developed to be consistent with national government targets, the London Climate Change Action Plan goal of a 60% reduction in CO<sub>2</sub> emissions by 2025 and the ongoing work of the IPCC. The result of this process is that there is a target of an 80% reduction in CO<sub>2</sub> emissions by 2050 with interim objectives of 9%, 14% and 40% from local actions by 2012, 2015 and 2025. The 2025 target in the scenario of 40% is compatible with the Mayor's CCAP target of 60% as the latter indicates that national and international action have a role to play in reducing CO<sub>2</sub> emissions with London making savings through local actions of around 30%. As the brief was to produce a challenging but achievable target, this has been set a little higher.

There has recently been a review of the Local Authority National Indicators; councils must report against all 198 of these; 18 statutory and 35 negotiated indicators are included in the local area agreement. Four of the national indicators relate to climate change and each LSP has been encouraged to select one of these to be included within their local area agreement. The climate change strategy has been developed on the understanding that Waltham Forest LSP will adopt national indicator number 186: Per capita reduction in CO<sub>2</sub> emissions in the LA. This indicator has been recommended for London Boroughs by GoL and Defra.

### 1.4 Impact of climate change

The global impacts of climate change are widely reported in the media and the great majority of the public are aware that the science predicts higher global average temperatures, sea level rise and habitat losses during the next century as a result of man-made CO<sub>2</sub> emissions<sup>4</sup>. The impacts will be felt most keenly in the tropics and toward the poles although difficult conditions will occur in all regions.

In Waltham Forest, the most significant problems will be more serious water stress and overheating. Rainfall is projected to decrease during the summer and increase during the winter months, with an increased risk of more intense events which will increase the risk of fluvial and surface water flooding. This is likely to be a more serious problem for areas further downriver towards the Thames although there is still a role for Waltham Forest to play in limiting the potential damage. Waltham Forest (as in the summer of 2007) is also prone to urban flash flooding due to over-whelming of parts of the drainage system at times of very heavy rainfall.

Climate change is not something which is solely in the future; emissions of carbon dioxide and other greenhouse gases over previous decades will continue to have an effect for a number of decades to come. Waltham Forest already experiences negative impacts and costs from extreme weather – overheating, water stress and flash flooding. The greatest levels of change are projected to start occurring from 2030-2040 onwards. It is therefore essential that early adaptation action is taken now, as many of the decisions made today will affect the spatial planning, development, procurement and operations in decades to come.

Because we know how the climate will change over the coming decades we are able to adapt our infrastructure and lifestyles to cope better with the conditions we will face in the future. We can also be quite confident that if levels of greenhouse gases are not stabilised within the near future, the impacts of climate change will be significantly worse and may result in catastrophic harm to natural ecosystems and processes on Earth. For this reason, we must take measures to both mitigate climate change by reducing our currently unsustainable levels of fossil fuel consumption in line with the prevailing scientific consensus<sup>5</sup> and improve our resilience and sustainability under a future climate scenario.

The projections which are described above show how the world will change as a result of climate change: there will also be a large human impact. The rising cost of living and in particular of energy is of critical importance to the climate change agenda. As prices rise, people will be increasingly compelled to reduce their energy usage to save money with knock-on greenhouse gas emissions reductions. Concurrently, there will also be pressures to increase energy use for cooling, and rising demand for water, which has a corresponding impact on greenhouse gas emissions from the water industry.

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<sup>4</sup> Climate change FAQs, IPCC. [www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-faqs.pdf](http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-faqs.pdf)

<sup>5</sup> 4th Assessment report, IPCC, 2007 [www.ipcc.ch/ipccreports/assessments-reports.htm](http://www.ipcc.ch/ipccreports/assessments-reports.htm)

A further consequence of energy price rises will be a reduction in the availability of disposable income which can be spent on greening homes and lifestyles. Careful policy and strategy design can help identify solutions to this and drive forward climate change action including energy efficiency gains, better use of water and emissions reductions; in spite of uncertain economic conditions.

### 1.5 Methodology

SEA Renue have developed a Local Authority specific methodology to forecast future emissions, produce a range of scenarios to achieve specific carbon emissions reduction targets over time and provide a costed action plan to achieve the final chosen scenario. The scenario modelling utilises 36 sustainable energy measures ranging from alternative forms of energy supply to demand reduction.

The model was set up for Waltham Forest by inputting borough specific figures from national government bodies such as BERR, Defra and the Office for National Statistics and profiling the capacity for specific low carbon measures in consultation with the Council. For example, out of the total number of houses in the borough, the stock condition survey was used to identify the number of uninsulated cavity walls; this would provide the maximum technically achievable capacity for cavity wall insulation in the borough.

While this strategy has a key focus on carbon dioxide emissions, other greenhouse gases have an important role in causing climate change. The Kyoto protocol covers the six most important greenhouse gases in terms of climate change impact; CO<sub>2</sub>, methane, nitrous oxide (N<sub>2</sub>O), Hydrofluorocarbons, Perfluorocarbons and Sulphur hexafluoride (SF<sub>6</sub>). Of these, the first three are the most significant in terms of overall climate change impact although the latter three have a much greater global warming potential (GWP) relative to CO<sub>2</sub>. The model only utilises technical measures that are already commercially available at the time of writing. Each measure has comprehensive performance and cost data, from bodies such as BERR, which allow the model to calculate the reduction in carbon emissions, the effect on air quality of each measure<sup>6</sup>, as well as its financial implications.

The costed action plan is a road map to achieving the agreed climate change mitigation and adaptation objectives. Actions are broken into sections for the Council, LSP and local communities and sectors to implement. The actions fall under six themes, covering both mitigation and adaptation – these can be thought of as treating the cause and the symptoms respectively. There will also be additional cross cutting actions for communications and outreach which aims to raise awareness and instigate behaviour change.

The intention is for LBWF to draft a detailed delivery plan for the initial three year period, following a review of the actions proposed by the CCS. This will identify the organisations, teams and individuals responsible for delivery of each action; the resources which they will require to do this,

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<sup>6</sup> NB The model does not allow for a comprehensive air quality impact assessment which would require an in depth study involving much greater detail than can currently be given on factors such as the location of any plant and pollutant dispersion modelling. This is outside the scope of this work.

both existing and additional; and the timeframe by which specific targets (e.g. a reduction in water use of x% by MM/YYYY) are to be achieved. As the CCS is to be reviewed on a rolling three year cycle, these targets will be closely monitored to identify any situation where targets are likely to be missed, and measures put in place to address them.

### 1.6 Summary of national perceptions research

Our desk based audit of current research on public perceptions of climate change yielded some key messages which have been used to inform the CCS:

- **Build climate change into all activities.** Messages about climate change are most effective when incorporated into policies and communications on other themes e.g. health, deprivation, and education.
- **A reliance on science will kill ownership.** Presenting large amounts of complex climate science can overwhelm, irritate and demoralise people. The science is relevant but should be presented in clear, accessible ways.
- **Be positive.** While climate change poses a serious threat to our way of life, actions in response to climate change offer the potential for communities to develop innovative solutions which can be shared with others. International examples include Danish pre-eminence in wind power and German and Japanese leadership on solar electricity generation. Simple changes in behaviour can dramatically reduce the impact our lifestyles have on climate change with the added advantage of reducing spending on utility bills as well as having health benefits and a positive impact on community cohesion.
- Emphasise the **cumulative effect of thousands** of people all acting at once. If all the 272,600 people living in Waltham Forest save one tonne of CO<sub>2</sub> each, this would reduce the borough's CO<sub>2</sub> emissions by 25%.
- **Target measures appropriately.** For example, many households in the borough currently don't own a car; a campaign to get people out of their cars would need to target the socioeconomic groups that are more likely to have cars.

### 1.7 Summary of stakeholder engagement in LBWF

A series of seven stakeholder engagement events were organised with Council and LSP employees and the wider community. At each event, equalities monitoring was undertaken to ensure that the development of the strategy was as inclusive as possible. The final stakeholder engagement event was an equalities workshop which representatives of all equalities streams were invited to participate in. The purpose of this event was to discuss the actions proposed in the CCS, identify any which may have negative impacts on one or more equalities groups and suggest mitigating work to reduce or eliminate those negative impacts. Below is a brief synopsis of the key findings and comments from each of the events:

### 1.7.1 Working group chairs

**Combined heat and power (CHP)** was a key focus for this group:

- We should concentrate efforts on CHP
- We need to understand all practical and procedural implications of CHP.
- There are some exemplar systems at Council sites, including building refurbishments
- Communication is an essential part of council activity on climate change
- There is a need to consider how to convey some of the complex messages

### 1.7.2 Working groups

- There is a **need to collaborate** between Council departments and amongst LSP partners to achieve progress across this big agenda.
- **Tough decisions** are needed to achieve the CO<sub>2</sub> reduction measures. Some action may not be popular.
- The **LSP must lead by example**: “We need to become the change we want to see”.

### 1.7.3 Councillors and Community Chairs

- There is **support for CO<sub>2</sub> reduction targets**. The Council want an economically robust approach to deciding how to invest in necessary measures.
- There is a **need for sustainable asset management**: Decisions taken now need to include climate change criteria and whole life costings.
- There is **strong interest in**:
  - Supporting small-renewables at domestic and community scale
  - Providing visible examples of the Council’s commitment
  - Taking the public with us, including younger generations

### 1.7.4 Policy context experts

- **Regeneration across Waltham Forest needs to embrace low-carbon future** and be attractive, locally distinct and minimise car dependency
- **The Climate Change Strategy needs to concentrate on the Council and LSP’s main spheres of influence**. Be pragmatic and realistic
- There is a **need to embrace adaptation issues**, especially where the Council has influence eg. Greenspace management, homes and building management

### 1.7.5 Big Conversation on Climate Change event with residents and voluntary sector groups

- **People's emotions on climate change** range from feelings of concern and despair for the future, to positive and hopeful about what can be done
- **Some local people want rapid and radical action** by the Council, to tackle climate change. The event debated the associated reality check of this approach
- **There are a range of practical actions happening already** in Waltham Forest to promote and to learn from. Several more such examples would only need small tweaks in policy and procedures to make them happen

### 1.7.6 Common themes

The following issues were raised at several of the stakeholder engagement events. These issues have been addressed in the course of the development of the CCS.

- Increase transport measures
- Increase the consideration of behavioural change measures
- Study the effect of the CCS on local air quality pollutants in more detail
- Reduce the amount of biomass from that proposed in earlier iterations of the scenario
- Group the measures into LSP, Council, residents and business community actions

## 1.8 Summary of Equalities Impact Assessment

Mott Macdonald were commissioned to produce an Equalities Impact Assessment (EqIA) of the CCS. The full EqIA has been submitted alongside the CCS.

Mott Macdonald's work on the EqIA included looking at other climate change strategies to provide case studies of how others have addressed equalities issues. This indicated that no such exercise has been undertaken before outside of the GLA which suggests Waltham Forest is taking a unique and forward thinking approach in considering the effect of the CCS on equality and diversity.

A major part of the EqIA was a stakeholder workshop where likely impacts of measures were identified and ways of mitigating any negative impacts were discussed. The majority of actions discussed were classified into either positive or neutral impacts on equalities groups and possible mitigation actions highlighted. Representatives of all equalities groups were invited to attend this event and those who were unable to attend due to other commitments were contacted by telephone to ensure that they had the opportunity to input into the consultation. The discussions identified actions which could have a negative equalities impact and suggestions for mitigation and improvement actions proposed in each case, so as not to inadvertently increase burdens on the most vulnerable members of society.

The full findings of the EqIA including any potential negative impacts and mitigating actions, where relevant, are provided in the EqIA which accompanies this strategy. A summary of the key points is available in an appendix to this strategy.

## 2 Carbon scenario modelling

### 2.1 Introduction

In this section the robust methodology and modelling tool that has been used to develop this strategy are outlined.

At present, Waltham Forest's emissions stand at 1089 kt CO<sub>2</sub> per year<sup>7</sup>. Accounting for projected population growth and new-build emissions, by 2050 Waltham Forest would be emitting 1183 kt CO<sub>2</sub> per year.

A number of different emissions reduction targets have been proposed by regional and national bodies, largely based on prevailing scientific evidence regarding the effect of CO<sub>2</sub> on climate change. Central government set a target of a 60% CO<sub>2</sub> reduction by 2050 in the Energy White Paper of 2003 – this was based on work by the Royal Commission on Environmental Pollution.

The London Climate Change Action Plan has a target of 60% reduction but by 2025 – around 25% of this is expected to be met by the influence of national and international policy measures with the remainder being a result of local policy measures. This is closer to the emissions reduction requirements currently being advocated by the IPCC which suggests a need for global emissions to peak within the next decade or so and then descend rapidly to around 80% of current levels by mid century.

Waltham Forest would like a target which is both ambitious and achievable. For this reason, a scenario has been modelled which achieves an 80% reduction in CO<sub>2</sub> emissions from a baseline level of 2005 by 2050.

### 2.2 Methodology and model description

SEA Renue's CO<sub>2</sub> scenarios model takes existing data and forecasts of population, buildings, energy use and transport to develop a picture of the source of future CO<sub>2</sub> emissions in Waltham Forest. In consultation with the Council a limit was set on the capacity for each low carbon measure as determined by local conditions (for example the amount of solar panels which can be fitted to suitable roofs across the borough).

The housing stock in the borough is a relatively even split of Victorian terraced houses, flats and 20<sup>th</sup> century detached/semi-detached homes. The stock is comparatively old, with half of buildings being built before 1919, and a further 25% built before the end of the Second World War. The average SAP (2001) rating was 52 which is similar to both the national and London-wide picture.

Built into the model are verified figures on energy production and CO<sub>2</sub> savings from all the renewable and low carbon technologies from which the model builds a low carbon scenario. After the specified percentage CO<sub>2</sub> reduction target is entered (80% in this case), the model calculates

<sup>7</sup> Emissions of carbon dioxide for local authority areas, Defra. [www.defra.gov.uk/environment/statistics/globalatmos/galocalghg.htm](http://www.defra.gov.uk/environment/statistics/globalatmos/galocalghg.htm)

the emissions reduction target in absolute (as opposed to percentage) terms, and is then used to produce a reduction scenario based on the basket of measures included.

The approach of the model is to achieve reductions based on existing technologies rather than relying on the development of as yet unproven low carbon technologies. While the scenario that has been developed shows one way of reaching the 2050 target, this should only be thought of as a guideline and is subject to change if there is a dramatic shift in the economy or the way in which energy is supplied, for example the development of the 'hydrogen economy'<sup>8</sup>.

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<sup>8</sup> The Hydrogen Economy booklet, [www.london.gov.uk/gla/publications/environment/the\\_hydrogen\\_economy\\_booklet.rtf](http://www.london.gov.uk/gla/publications/environment/the_hydrogen_economy_booklet.rtf) This is an alternative fuel source for vehicles and has been trialled on London Buses. NB speculation that 5% of new cars will run on Hydrogen fuel cells by 2008 with Hydrogen becoming a dominant player in the transport fuel market by 2010.

### 3 The chosen scenario

This section outlines the chosen carbon reduction scenario and the energy mix within it.

The choice of an 80% target was selected on the basis of scientific evidence regarding the required level of emissions reductions. The scenario has been developed over the course of the stakeholder engagement process to reflect the issues raised. The main changes made to the final chosen scenario are:

- The level of biomass has been reduced as far as possible and is not expected to be introduced until as late as possible to allow time for development of policy and technology to reduce the air quality impacts, the preferred biomass technology of large scale CHP minimises the air quality impacts.
- Behavioural change has been built into the model, reflecting the recognition of the need for non-technical action.
- The improvements in the transport sector have been increased, in part reflecting a greater level of behavioural change and switching to more sustainable transport modes.

An 80% reduction in CO<sub>2</sub> emissions relative to a 2005 baseline by 2050 is a challenging prospect and requires a major shift in energy provision and consumption patterns.

Previous studies by SEA Renue have indicated that CHP is necessary to reach a target of more than around 30% through local and regional technical action. This is the reason why CHP (predominantly with district heating but also in larger stand alone buildings) forms such a central part of the CCS.

In this scenario, the savings can be categorised as below (the figures in brackets show the percentage of the total reduction in CO<sub>2</sub> emissions from each category of measures).

- Energy Efficiency (6%)
- Renewable energy (7%)
- Transport (13%)
- Behavioural change (28%)
- CHP/district heating (46%)

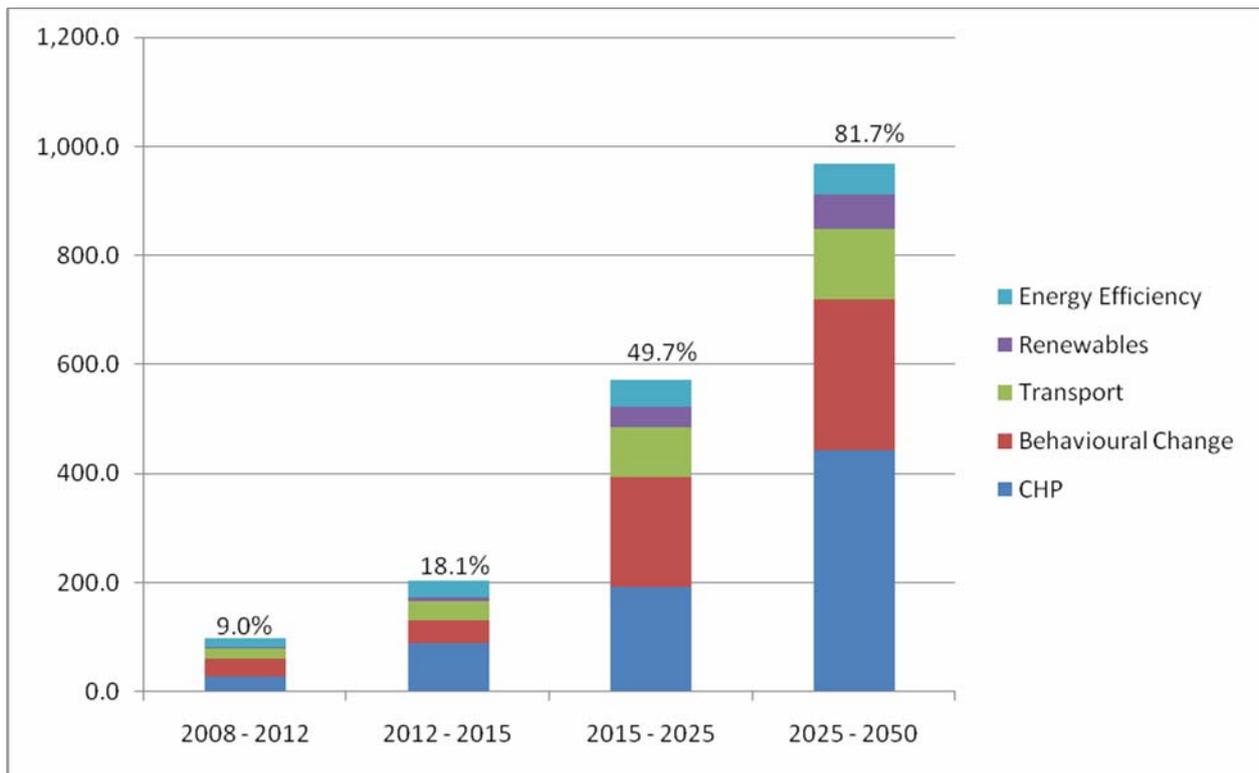


Figure 3 CO<sub>2</sub> savings from scenario

### 3.1 What could a low carbon LBWF look like in 2050 under this scenario?

The scenario envisages large scale changes in energy use across the borough affecting all aspects of daily life. This section seeks to describe what the results of these changes may look like in the borough’s homes, workplaces, schools, green spaces and streets.

#### 3.1.1 Homes

Any new homes in Waltham Forest will be designed to be compatible with the climate which will develop over the course of the building’s lifetime, and built to high environmental standards; with a high level of insulation, good use of natural light, and water saving infrastructure. They will be connected to a local CHP district heating network to provide most of their energy requirements. Building roofs will supply energy through solar panels; use green roofs (planted with species such as sedum) to slow storm water run-off reducing flood risk, improve insulation and enhance biodiversity through creation of new habitat. In many cases solar panels and green roofs will be seen together on the same roof. Rainwater harvesting tanks will be buried next to the properties where feasible.

On the surface, the changes to existing homes might be quite hard to spot at first. With the exception of solar panels, green roofs and a small amount of houses which have had their solid walls insulated, changes will be out of sight. In the longer term, external shutters to provide shading and ventilation may be fitted to properties which can support them. Almost all existing

homes will have been retrofitted with insulation, lofts will be insulated to a depth of at least 270 mm, and any homes with cavity walls will have had them filled. With the development of a district heat network across the borough, homes will replace their boilers with a connection to the heat network and some may go further and re-plumb their heating system to provide underfloor heating.

Inside homes, some small changes will be noticeable; utility meters will be highly visible rather than hidden away in a cupboard which will encourage behavioural changes and kitchen and bathrooms will have water efficient appliances which will appear very similar to traditional equivalents.

### 3.1.2 Workplaces

In addition to the technologies which will be applied to domestic buildings, such as insulation and on-site renewable electricity generation, workplaces will also need other developments. The continued evolution of computer technologies could reduce the amount of heat given off by computer equipment. This would prevent wider take-up of conventional air conditioning which would contribute further to climate change through its high electricity demand. Possible options would be a move to laptops which are in general more energy efficient than desktops or thin client systems (similar to a mainframe system but with the benefits of PC technology) which allow an enclosed server space to be cooled (if necessary) rather than a whole office.

Shading will be provided, either using external awnings or blinds; or vegetation planted in appropriate locations (including green roofs and walls); and passive and natural ventilation will be used to reduce the need for mechanical cooling. Where mechanical cooling continues to be necessary, it would be provided in more energy efficient ways, such as groundwater boreholes, or a CHP engine with an absorption chiller to convert heat to cooling.

Water use in offices will be reduced through the use of water-efficient toilets, taps etc as in homes.

The total office space itself may become smaller as new working practices such as home-working and compressed hours allow for hot-desking; fewer people will be present at any one time which may mean less space is needed. Another benefit in addition would be to reduce the amount of traffic on the roads. Car parks at workplaces will become smaller with some spaces being converted to cycle parking as single occupancy car travel for work becomes increasingly impractical both from a financial and logistical viewpoint.

All except the smallest workplaces will provide shower and changing facilities for staff that commute by bike.

### 3.1.3 Schools

Through the Building Schools for the Future programme, all secondary schools will either be rebuilt or substantially renovated by 2050. There is a drive to make buildings as sustainable as

possible, both for the benefits which accrue from sustainable buildings in general but also for the educational value of illustrating to the next generation how things can be done in a sustainable way. Features which can be expected include extensive use of natural light, green roofs (possibly including rooftop gardens), on site energy generation and connection to district heating networks (in some cases, schools may even house the heat generation infrastructure). Rainwater will be collected for non-drinking purposes, similarly grey water may be recycled. The designs will consider the climate the buildings can expect to face by the middle of the century with features such as night purge ventilation and shady outdoor spaces such as courtyards.

### 3.1.4 Public spaces

Although still in widespread use, the car will not be as dominant with improved public transport and a major shift to walking and cycling.

Roads and pavements will have been resurfaced with permeable materials – these may not look any different to their conventional equivalents but will allow water to soak away more naturally lowering the peak flows into the drainage system during rainfall events which risks flooding.

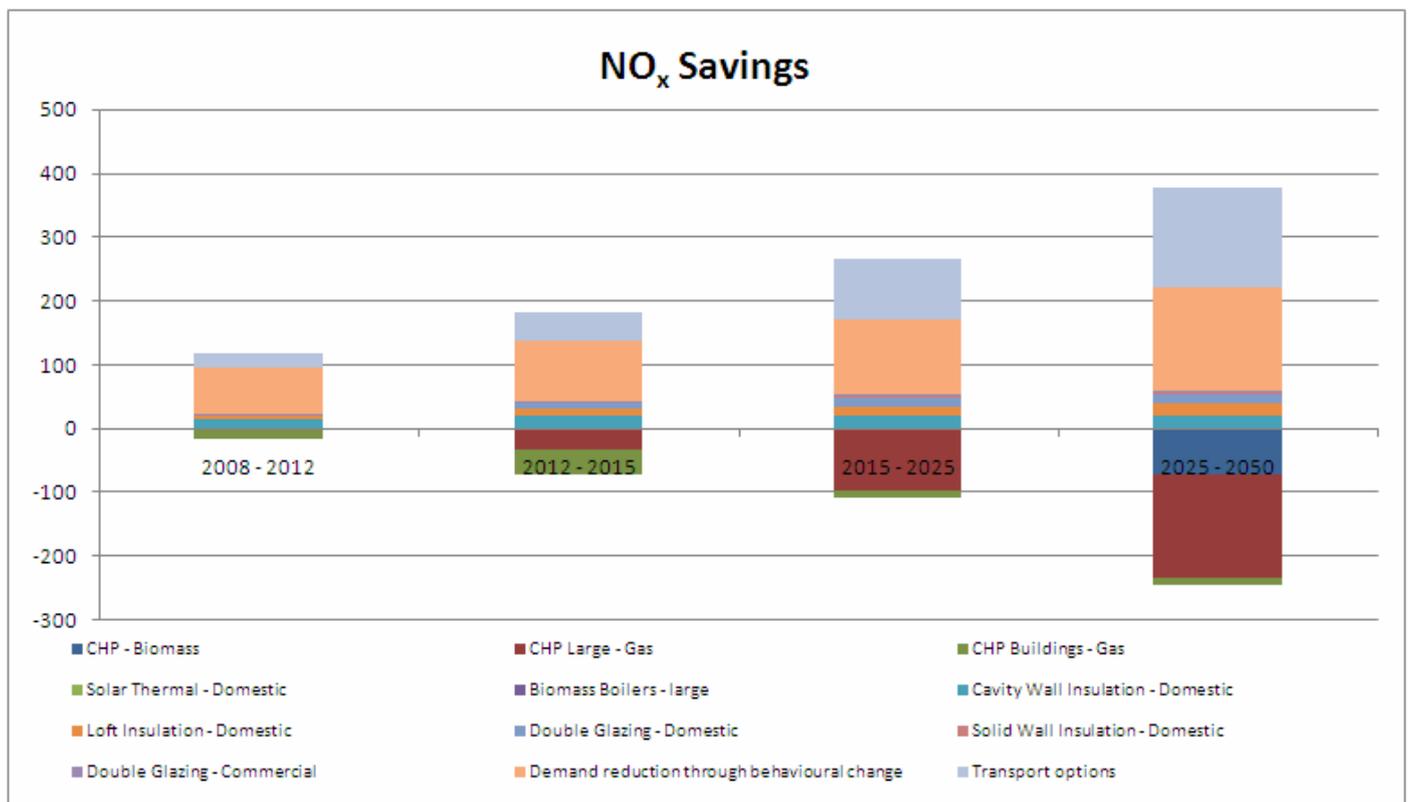
Green spaces such as parks will be planted with more climate change tolerant species and there will be more opportunities for shade. This will be achieved through a mixture of planting different species, installing benches in shadier spots and setting up permanent shades for public use. Green space is extremely valuable for providing cooler spaces which also help to mitigate the urban heat island effect. Overheating is likely to become a major health risk, particularly affecting vulnerable residents on hot summer nights.

Biodiversity may be increased by allowing some areas of parks to become more natural which would provide a better habitat for wildlife, and require less intensive maintenance.

The borough's waterways will be important recreation areas and transport routes, both for river freight and walking and cycling routes, providing cool open spaces in hot spells and soft flood defences when necessary.

## 3.2 Air Quality effects

Nitrogen oxides are a key local air quality pollutant. The entire borough of Waltham Forest has been declared an air quality management area, therefore it is important that the CCS recognises this and in the event of any potential adverse effects, these must be identified and suitable controls proposed.



**Figure 4 NO<sub>x</sub> savings from scenario**

The scenario forecasts that, for all time periods, there would be an overall reduction in NO<sub>x</sub> emissions in the borough, primarily as a result of a reduction from lower fuel consumption for domestic heating and transport use. However, combined heat and power technologies increase local NO<sub>x</sub> emissions relative to current levels. While the NO<sub>x</sub> impact of CHP at a local level, under certain circumstances, may be negative, it is a very efficient way of producing energy. It should only be introduced if actions can be taken to mitigate any negative air quality impacts. Some of the options for achieving this include siting any installations so as not to affect air quality, require a minimum chimney height to allow for dispersal, require clean burning designs, cleanup technology and limiting the range of fuels which can be used.

The nitrous oxide (N<sub>2</sub>O) impact of the scenario has also been modelled. By 2050, the measures suggested are projected to reduce N<sub>2</sub>O emissions by ten tonnes per year which is 16% of the 52 tonnes emitted in 2005 in Waltham Forest<sup>9</sup>. Expressed in terms of CO<sub>2</sub> equivalents, this is a baseline of 16 ktpa and a saving of 3 ktpa. Although this is not as large a saving as the CO<sub>2</sub> figures, it should be noted that information regarding nitrous oxide is much less readily available and therefore the level of uncertainty in any reduction potentials is much greater.

<sup>9</sup> NO<sub>x</sub> emissions by 1km x 1km, 2005, NAEI. [www.naei.org.uk/datachunk.php?f\\_datachunk\\_id=170](http://www.naei.org.uk/datachunk.php?f_datachunk_id=170)

## 4 Current actions and CCS action plan

It is the combination of many actions which will achieve the London-wide emissions reduction target of 60% by 2025 and Waltham Forest's chosen scenario of an 80% reduction by 2050. The action plan has been created with the intention of showing how the measures identified in the scenario can be brought about. Coordinated and sustained activity by the LSP is needed to facilitate change throughout the borough. This section outlines actions that need to be taken by the LSP, businesses and residents of Waltham Forest to achieve the significant reduction in human impact on the environment.

### 4.1 Introduction

The CCS has been structured into six themes to reflect the main areas that actions to address climate change fall into. These themes show analysis of what is currently being done and the areas in which it is felt there is more to do. The working groups within the Council that reflect these themes will help implement the strategy with the addition of a Communications and outreach working group which is considered essential to delivery of Waltham Forest's climate change goals:

- Planning & Housing
- Transportation
- Buildings
- Waste & Recycling
- Energy & Procurement
- Managing Natural Habitats

Action in each of these themes already has an impact directly or indirectly on climate change and CO<sub>2</sub> emissions. Each of the working groups and some of the LSP partners have provided an outline of what they are already doing on climate change, what they perceive to be the key gaps which need to be addressed in their particular field and a set of ideas for future actions.

In this section we summarise the existing actions, and outline further actions which need to be taken within each theme. The future mitigation and adaptation recommendations cover the gaps which were identified and incorporate the ideas which have been put forward throughout the project. All future recommendations are summarised in the 'Action Plan' in appendices one and two, where the CO<sub>2</sub> emission savings and indicative costs are identified and responsibilities assigned for each. The delivery plan will be drafted in-house by LBWF, fleshing out in detail the action plan for the first three years of the CCS.

## 4.2 Planning & Housing

### 4.2.1 Planning & Housing - Existing actions

- **Sustainability in planning policy.** There are already measures in the planning system to address renewable energy, energy efficiency and sustainable transport (e.g. car-free developments and cycle parking). Water, waste and resources are also covered.
- **HECA reporting.** All authorities have a target of reducing household energy use by 30% from 1996 to 2010. A report to the Secretary of State for Environment, Food and Rural Affairs against this target is submitted on an annual basis.
- **Decent Homes** requires social housing to be of a satisfactory standard by 2010 and the criteria for this includes making sure homes to not get too cold. **The twelve existing CHP** plants in the borough serve approximately 1,000 properties<sup>10</sup>.

### 4.2.2 Planning & Housing - Mitigation actions

- Waltham Forest's **UDP** has not **required an SPD** on climate change to cover any gaps as sustainability issues are well covered by the London Plan. **Explicit reference to climate change** should be made in the LDF (expected in 2010), allowing planning restrictions to reduce the climate impact of development.
- The London Plan requirement for a **20% CO<sub>2</sub> reduction** from new developments from on-site renewable generation applies in Waltham Forest<sup>11</sup>. This has superseded UDP policy WPM21, but consideration for the removal of any minimum size requirement should be given in the new LDF. The Mayor's Energy Strategy has the aim of achieving **at least one zero carbon development** in each borough by 2010. Waltham Forest should seek to achieve this objective at the earliest opportunity and disseminate any lessons learned to other local authorities, **LSP partners and developers**.
- LBWF should consider introducing a policy into the LDF, which requires energy efficiency improvements in the existing part of houses when they are extended.

*Uttlesford District Council requires energy efficiency improvements in the existing part of houses when they are extended, echoing energy efficiency requirements of the low carbon buildings programme.*

- Councils are permitted to set minimum **efficiency standards under the Code for Sustainable Homes**; these could cover just the energy aspects of the code or the full range of areas<sup>12</sup>. The Council should make use of this power to improve the sustainability

<sup>10</sup> Waltham Forest Energy Strategy, AEA, 2008

<sup>11</sup> Please note, the London Plan's energy hierarchy is as follows: Energy demand reduction through energy efficiency; Supply of energy efficiently, for example through decentralised generation or CHP; then renewable energy.

<sup>12</sup> Building a Greener Future: Policy Statement, DCLG 2007. [www.communities.gov.uk/documents/planningandbuilding/pdf/building-greener](http://www.communities.gov.uk/documents/planningandbuilding/pdf/building-greener)

of new homes in the borough. While guidance on non-domestic buildings is less clear, setting developers **targets linked to BREEAM standards** could fulfil a similar role in non-domestic buildings.

- **Working with developers** from the earliest opportunity in the planning process should ensure that developers understand the obligations they face and address any issues they may have. The Council should identify developments where the requirements of part L of the building regulations have not been met. In such cases it should seek to use its enforcement powers to resolve the matter satisfactorily with the developer. Prosecution should be the option of last resort.
- The Council should make sure that all **Section 106 commitments<sup>13</sup> are honoured** by developers and consider inclusion of financial contributions towards climate change projects within the borough.
- Introducing more stringent regulations could encourage developers to look elsewhere for opportunities. Because of this, it would be best to discuss actions of this nature with neighbouring authorities to ensure a level playing field.
- Most of the buildings which will be standing in 2050 are already built. While there is a strong link between the age of a building and its energy efficiency, it is impractical to propose the replacement of large numbers of older buildings in Waltham Forest. Therefore **technologies which can be retrofitted** to existing buildings are of paramount importance. Improvements which can be encouraged include insulation, boiler replacement, small scale renewables, and energy and water efficient appliances. The LSP could implement some of these measures through existing work e.g. on decent homes and fuel poverty. Adaptation measures such as water efficiency and overheating management options could also be delivered through the same mechanisms or an evolution of them.
- A **targeted approach** will ensure that money is well spent, for example areas with a high density of cavity walls could be targeted for cavity wall insulation. Areas with a high proportion of residents on benefits could be targeted for fuel poverty measures and signposted toward schemes such as the London-wide insulation campaign which offers free insulation to over 70s and people on benefits. The East London Warm Zone scheme also operates in Waltham Forest providing assistance with the installation of energy efficiency measures. For the able-to-pay market, schemes such as the Green Homes Programme should be promoted.
- A number of local authorities offer **subsidies towards renewables** installed under the Low Carbon Buildings Programme. Waltham Forest Council should consider offering such a service for installations in the borough. Linking to the Low Carbon Buildings Programme has the advantage that quality is assured without the need for a second accreditation process. Interest-free loans could have a similar effect.

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<sup>13</sup> S106 agreements can act as a main instrument for placing restrictions on the developers, often requiring them to minimise the impact on the local community and to carry out tasks, which will provide community benefits. [www.idea.gov.uk](http://www.idea.gov.uk)

- Planning policy can be used to require **sustainable travel plans for all new developments** and encourage car free developments; it may be possible to combine these with the development of a **car club network** in the borough.
- The Council would like to create **at least one low carbon energy area** – likely to be based around one of the borough’s town centres or industrial areas. This could potentially go further and **become a climate change action area** with measures on **adaptation as well as mitigation**. The mitigation side of this proposal could be achieved through the Low Carbon Zones scheme. The Sustainable Communities Strategy has a strong emphasis on local shopping areas as a key means of generating and retaining wealth, and recognises the need for Waltham Forest to offer a unique experience in the face of competition from the nearby foci of Lakeside and Stratford City. Working with retailers to create an area which is attractive and has an emphasis on climate change throughout, from the design of the shops to the produce on sale, and from the transport provision to the street environment could provide a solution to this wider objective.

*Barking Energy Action Area Barking Town Centre has been chosen by the Mayor of London as one of four 'energy action areas' across the city to showcase low carbon communities demonstrating a range of sustainable energy technologies and techniques.*

*Barking is a major regeneration area in the borough with approximately 7,000 new homes planned over the next 15 years. This presents regeneration partners with a unique opportunity to develop and implement an area wide low carbon energy strategy.*

*The energy action area strategy aims to deliver a 32% reduction in carbon emissions*

- Given a sufficiently high and diverse heat demand, a **town centre or industrial area site** could provide an excellent opportunity to begin the **development of a community heat network**.
- **Possible locations for the starting point(s) of a district heating network** should be identified.
  - Sites where there is a **high public sector heat demand** (and preferably large scale new development, such as Walthamstow town centre or Blackhorse Lane) make good candidates. Alternatively, business parks and their environs could provide a mixed use area with a relatively high and diverse heat demand.
  - As part of this work, the LSP should also determine whether they wish to use an **energy service company (ESCO) model** and what their preferred type of ESCo would be. ESCos finance, design, build and operate energy networks integrating energy efficiency measures into buildings at negligible or no capital cost to their

client. The London Energy Partnership published a guide to ESCos in 2007 which is available online<sup>14</sup>.

### 4.2.3 Planning & Housing - Adaptation actions

*The LSP should promote the findings of the recent three regions climate change group report 'Your home in a changing climate' on the adaptation of homes. And use this to identify actions which can offer both mitigation and adaptation benefits.*

*Your home in a changing climate, Three regions climate change group, February 2008.*

- As the climate will change predictably over the coming decades, new **developments should be designed to be resilient** to the evolution of the climate over their design life. The Council should build such considerations into **planning policy**.
- The **SCORE Centre** on Oliver Road in Leyton is a good example of a low carbon development. If possible, the Council should try to build on this example by encouraging further **flagship low and zero carbon developments** in the borough.
- **Saving water** will become a serious issue and the planning system should investigate ways of increasing the uptake of dual flush toilets, water efficient showers and appliances, **rainwater harvesting and grey water recycling**.
  - For domestic measures, widespread **implementation in social housing** could help support the development of a successful market by increasing the number of installers and reducing system costs. Existing grant funding for climate change mitigation measures could be accessed for some adaptation measures which also have mitigation benefits.
  - Reducing the demand for hot water will also have a significant mitigation benefit as 18% of domestic CO<sub>2</sub> emissions come from water heating.<sup>15</sup>
- **Water metering** is currently quite rare. Unmetered water provides no incentive to the user to behave efficiently. In order to encourage larger families and other heavy water users to install a water meter, a package of water saving measures could be offered in partnership with Thames Water.

<sup>14</sup> Making ESCos work: Guidance and advice, London Energy Partnership, 2007. [www.lep.org.uk/uploads/lep\\_making\\_escos\\_work.pdf](http://www.lep.org.uk/uploads/lep_making_escos_work.pdf)

<sup>15</sup> Source: The London Climate Change Action Plan, 2007. [http://www.london.gov.uk/mayor/environment/climate-change/docs/ccap\\_fullreport.pdf](http://www.london.gov.uk/mayor/environment/climate-change/docs/ccap_fullreport.pdf)

## 4.3 Transportation

### 4.3.1 Transportation - Existing actions

The Council recognises that traffic growth and congestion are problems on social, economic and environmental levels, and is committed to limiting further growth and encouraging a shift from private car use to increased use of public transport and walking or cycling.

- The Council intends to double the area covered by Controlled Parking Zones (CPZs) to 20% by 2011.
- The new parking charges in CPZs, on a sliding scale depending on CO<sub>2</sub> emissions, should encourage people to consider switching to lower carbon vehicles.
- The borough has a good record on producing **travel plans** for the Council, schools and workplaces.
  - All schools in the borough now have a travel plan (ahead of the requirement for all schools to have one by 2009). This should result in a significant reduction in the number of children travelling to school by car.
  - Funding is a barrier to improving the travel planning service– there is little scope for providing more low emission **pool vehicles** for the Council and no legal requirement for workplace travel plans
  - The Council is in the process of producing a travel plan for itself and has a workplace travel planning officer (shared with two other boroughs).
- There is good support for **bus travel, walking and cycling** in the borough which is given significant support through TfL funding. The Council aims to increase journeys made on foot by at least 10% by 2014 (from a 2001 baseline) and to increase cycling by 80% by 2010 (from a 2001 baseline).
- Secure **cycle parking** has already been provided at some stations and the Council intends to extend this to all rail and underground stations and major Council offices by 2010.
- **Showers and changing rooms** are provided at major Council office sites.
- The Council provides a **recycled bike scheme** to residents, as well as **bike maintenance** workshops and **cycle training** for schools and adults.
- **Walking** is being promoted to employees of the Council and Whipps Cross Hospital
- A number of community **street audits** are planned. The aim of a street audit is to work with local people to identify means of improving safety and the street environment. One of their aims is to make walking more popular.
- The police have introduced a number of low carbon vehicles into their fleet and have moved patrols from cars to bikes and walking.

### 4.3.2 Transportation - Mitigation

The majority of transport measures are primarily mitigation measures. The borough's Local Implementation Plan (LIP) contains many transport-related measures, many of these are endorsed below (especially if they have not been implemented yet) and additional suggestions are also made.

#### 4.3.2.1 Reducing car use and related emissions

- **End free parking** at offices so that the LSP is leading by example, provided adequate CPZ's surround each site. Introduce parking charges based on the efficiency of vehicles, and use the revenue to fund sustainable transport and climate change initiatives such as cycle parking.
- **Encourage people to downsize their cars** or buy best-in-class vehicles should be one of the outcomes of parking policy. CPZ areas already feature 'green' charges, based on the size of the vehicle engine - continue to increase CPZ areas and investigate applying similar green parking charges to other (non-CPZ) areas (with allowances potentially made for equality issues such as age and disability). Educate the public on the savings that can be made by switching to a more efficient car.
- **Investigate the use of pool bikes and low carbon (possibly electric) pool vehicles.** A **car sharing** network could be set up to help identify staff who could share a journey rather than duplicating two or more very similar journeys. **Car clubs** provide a flexible alternative to car ownership and are becoming well established throughout London. Working with TfL (to whom a funding bid has been submitted) and existing car club operators, the LSP could develop and promote the network in Waltham Forest.
- **Promote fuel efficiency training** for fleets and if possible the general public. Fuel efficient driving could be promoted through LSP partner organisations, preferably as part of broader sustainable travel plans.
- **Request a green fleet review**, available free from the Energy Saving Trust, which will identify ways of improving the environmental and economic performance of LSP vehicle fleets. This service should also be publicised to relevant organisations in the area, starting with those with high fleet mileage (taxi firms/hauliers/couriers).
- Signpost TfL/Act on CO<sub>2</sub> fuel efficient driving websites<sup>16,17</sup>.

#### 4.3.2.2 Alternative fuels

- **Make concessions for low carbon vehicles** including those running on less polluting **alternative fuels** in the Controlled Parking Zones (CPZ); widening the LIP proposal for green permits to encompass low gCO<sub>2</sub>/km conventional vehicles.

<sup>16</sup> TfL smarter driving website [www.tfl.gov.uk/roadusers/smarterdriving/7551.aspx](http://www.tfl.gov.uk/roadusers/smarterdriving/7551.aspx)

<sup>17</sup> DfT smarter driving website [www.dft.gov.uk/ActOnCO2/index.php?q=tips\\_and\\_advice](http://www.dft.gov.uk/ActOnCO2/index.php?q=tips_and_advice)

- **Increase the proportion of biofuels** in the LSP fleets - sustainably sourced or 'second generation' fuels produced using inedible plants (or the residual parts of food crops) such as straw and wood. e.g. explore options for using used cooking oil (UCO). Ultimately this could be made available to commercial as well as LSP users.
- **Investigate the introduction of on-street charging points** for electric vehicles.

### 4.3.2.3 Public transport

- **Address the poor quality of transport links between the North and South** of the borough, bus routes in particular. Alleviating this situation will require improvements to the bus network, including the identification, implementation and communication of bus priority initiatives and accessibility; and the promotion, improvement and extension of the cycle network. Introducing 'bus buddy' schemes could encourage people with safety or other concerns to use the bus more often.
- **Re-open Hall Farm Curve and Lea Bridge Station** - the borough should continue to work with local groups and businesses to develop a viable business case and work for this to happen as soon as possible; it would allow a shift from road to rail.
- **Target transport hubs with crime reducing measures** – as they can be associated with crime hotspots; this is more of a problem in the South of the borough than the North. Given that there is also a serious overcrowding problem at Leyton station, crime reducing measures should be integral to works to address this.
- **'Paris bike scheme'** - the current Mayor of London is supportive of the introduction of such a scheme, with a manifesto pledge for a scheme in central London. Waltham Forest could either work for this to be expanded to outer London, or set up its own similar scheme.

### 4.3.2.4 Promoting walking & cycling

- **Cycle lanes** - ensure quality as well as quantity. Extend the network to address any remaining gaps along main roads and into quieter routes and put in place systems to ensure that any reports of problems with cycle routes (e.g. broken glass) are dealt with quickly and efficiently.
- **Cycling knowledge** - continue to signpost useful materials and schemes such as TfL's cycle maps and free cycle training and maintenance. Set up bike buddy schemes where more experienced cyclists are partnered with beginners/nervous cyclists and pass on their knowledge.
- **Provide cycle facilities** - LSP organisations are logical initial targets for providing facilities, local businesses would be a longer term prospect. For people travelling short distances secure parking facilities may be all that is necessary to prompt them to begin cycling. Showers and changing rooms are also often cited as being important.
- **Extend provision of secure cycle parking** at transport hubs and major destinations across the borough (e.g. town centres) to make people more willing to travel by bike. It should also

encourage residents with journeys of between 5km and 20km to work – the largest group, mostly commuting into central London – to undertake at least part of their journey by bike. Install secure cycle parking at Council owned social housing.

- **Promote walking and cycling** as healthy, cheap and sustainable ways to travel short and medium distances. Working with the Waltham Forest Cycling Campaign, the Ramblers Association and existing community groups could increase efficiency and effectiveness of active travel promotion measures, and promote community cohesion.
- **Complete the borough's walking strategy** and start to implement it at the earliest opportunity. Ensure that safety is a feature to ensure that vulnerable groups are not excluded.
- **Continue to improve the pedestrian environment**, in partnership with TfL, Living Streets, local residents' associations, schools and businesses.
- **Monitor the Legible London pilot**<sup>18</sup> in the West End with a view to joining or emulating the scheme at the earliest opportunity. This is an improved signage system which will encourage people to travel on foot around London.

#### 4.3.2.5 Business

- **Continue to identify and remove barriers to sustainable modes of transport.** The DfT 'Smarter Choices – Changing the Way We Travel' study found that city authorities prioritising workplace travel plans have typically managed to engage with organisations representing about **30%** of the workforce – Waltham Forest Council should set this as a minimum **target starting with the LSP organisations.**
- **Consider whether the borough requires a dedicated workplace travel planner**, so that the smaller and larger organisations can be targeted too, as well as providing resources to devote to those who may be deterred from active travel due to safety concerns (e.g. by encouraging travelling in groups). The majority of businesses in Waltham Forest are small, with fewer than five employees. The remit of the workplace travel planning officer is to target companies with 20-250 employees (although smaller businesses are in some cases reached through area travel plans, which is to be encouraged). Liaison with the private sector would allow sharing of the good practices that exist within the Council and increase the impact of council initiatives.
- **Develop alternatives to road transportation** of freight, in particular via the River Lea. The river is being used for delivering construction material to the Olympic site further south, it may be possible to develop links with the operators of these deliveries to investigate opportunities for them to exploit in Waltham Forest.
- **Consider setting up a freight quality partnership (FQP)**<sup>19</sup>. This is a partnership between industry and local government to improve the efficiency and safety of local goods distribution.

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<sup>18</sup> Legible London, TfL. [www.legiblelondon.info/wp01/index.php](http://www.legiblelondon.info/wp01/index.php)

<sup>19</sup> Freight Quality Partnerships, DfT. [www.dft.gov.uk/pgr/freight/sustainable/freightqualitypartnerships3](http://www.dft.gov.uk/pgr/freight/sustainable/freightqualitypartnerships3)

Examples of possible actions for an FQP are agreements on routing, load sharing and access to town centre areas.

- **Encourage local sourcing** of produce – although this may not lead to a reduction in freight movement within Waltham Forest it would contribute to a wider reduction in freight transport and have corresponding economic and environmental benefits.

#### 4.3.2.6 Schools

- **Ensure that school travel plans are kept up to date**, are effective and continue to identify and work to remove barriers to walking, cycling and public transport use (whilst being mindful of safety and security issues and disability).

Despite cycle stands and training, the number of children cycling to school still falls short of targets; therefore this could be a focus.

- **Run targeted cycle to school promotions** – such as Cyclicious initiative in the London Borough of Hounslow.

*London Borough of Hounslow has carried out a cycling promotion campaign targeted specifically at teenage girls, called Cyclicious. This award winning initiative along with the 'try cycling to school' scheme, saw a 400 per cent increase in cycling to the schools that participated in the programme.*

- **Provide additional secure cycle parking.**

#### 4.3.2.7 Individuals

- **Consider individual travel plans**, in particular targeting people who travel less than 5km to work. Personalised travel planning projects could be implemented/funded in conjunction with relevant Local Strategic Partners, such as Sport England or health care trusts, or planning/development commitments. Initiatives targeting individuals could also lead to a 'ripple effect' of increasing good practice amongst the general public as well.
- **Promote home deliveries for shopping** – home deliveries of groceries has been estimated to cut car mileage for shopping by 70-80% for those using the service. It is a relatively new area for local authority involvement, but possible means to encourage it include organising secure local collection/drop-off points so that residents do not have to be in to take delivery of goods (which would also increase efficiency of delivery schedules), and requiring new housing developments to include such facilities.
- **Home working:** the level of home working within the borough is slightly lower than London averages, therefore this could be something to encourage. It may be best to pursue this measure through specific workplaces identified as having potential for home working, for example larger companies and the Council<sup>20</sup>.

<sup>20</sup> The Council already has a policy for home working called 'Alternative Ways of Working'

#### 4.3.2.8 LSP actions (including communication)

- **Planning actions** - make sustainable travel plans a requirement for development planning applications, encourage more car free housing (in co-ordination with ensuring sufficient public transport provision).
- **Promote a shift to lower carbon vehicles**, e.g. through educating people on which cars are more efficient (as similar size vehicles can have significantly different emissions, which consumers are not always aware of).
- **Require contractors' vehicles** (e.g. waste collection) **to be of a certain emissions standard**, and that drivers have undergone fuel efficient **driving training**. Staff hiring cars should also be required to hire the most energy efficient models, avoid single occupancy use if possible, and any regular drivers for work should be trained in fuel efficient driving (integrated into drivers' existing commute and directly work-related travel where possible).
- **Introduce workplace Oyster cards** to encourage staff to use public transport for work-related journeys.
- **Introduce or promote existing financial incentives** to switch to more sustainable forms of transport, e.g. season ticket loans, Bike to Work scheme, record staff travel by public transport and cycle for work, continue to pay travel expenses for cycling. The Council could also investigate using business rates to create tax incentives that promote sustainable travel.
- **Ensure developers carry out Section 106 commitments** made in planning submissions.
- **Increase the number of home zones** (potentially linked to the Sustainable Communities Strategy). Traffic-free/low emission areas ('clear zones') could also be introduced.
- **Run more awareness raising events** such as Car Free Day, possibly linked to London-wide/national/ international events e.g. London Sustainability Weeks, National Bike Week, European Mobility Week.
- **Promote the health benefits of active travel** in partnership with the local Primary Care Trust.
- **Consider developing a specific 'green transport strategy'** as well as the LIP for the borough (as Camden has done).
- **Continue to be involved with TfL's 'imovelondon'** initiative (the successor to 'good going'). This is a TfL campaign to promote alternatives to private car travel such as walking and cycling and car sharing. People can make pledges on-line to travel by alternative means. London Boroughs can help to promote the campaign and publish their own imovelondon newsletter with borough specific news and information.
- **Ensure that senior LSP figures demonstrate leadership behaviour** in their travel choices, encourage local business and community leaders to do the same.

- **Maximise sustainable transport opportunities related to** the borough's status as one of the five **host** boroughs for **the 2012 Summer Olympics**, by improving infrastructure and facilities and promoting cycling.

#### 4.3.3 Transportation - adaptation

- **Replacing street surfaces** - in the longer term, once the technology is viable, use permeable materials to reduce the risk of flash flooding. Where possible these materials should also be in light colours to reduce heat absorption and lessen the urban heat island effect.
- Flexible working patterns including working from home particularly during extremely hot spells to reduce overcrowding on public transport.
- New footpaths and cycle ways to increase urban greening (trees, grass, gardens) and to help reduce surface water flood risk.

#### 4.4 Buildings

##### 4.4.1 Buildings - Existing actions

- The Council has applied **high environmental standards** to their **building refurbishment** programme, for example Sycamore House has achieved the BREEAM good rating which is laudable for a refurbishment.
- **Measures** have been implemented in a number of buildings **to lower energy and water use**; Rowan House has a **green roof**, a measure which saves energy, enhances biodiversity and reduces run-off rates lowering the risk of flooding.
- The Council has a good way of **signposting grants to address fuel poverty** through environmental health and housing improvement **grants**.
- The Council's **recently adopted sustainable procurement strategy** can be followed when developing construction contracts and influence suppliers to the Council.

##### 4.4.2 Buildings - Mitigation actions

Planning guidelines will ensure that new buildings are highly energy efficient. This section will focus on measures which apply to **existing buildings**.

- Existing work on **fuel poverty, HECA and Decent Homes** can be used as the foundation for much of the work which can be done on buildings. The Council should consider ways of **increasing the scope** of these initiatives to cover a wider section of society.
  - If additional external funding can be sourced, this could be specifically targeted toward this objective.
  - The scope for achieving carbon savings outside priority groups should be reviewed to ensure that the greatest benefit is drawn from investment in these programmes. As energy prices rise, more people experience fuel poverty; if these households

have not had previous work, there may be opportunities to improve the efficiency of homes at lower cost than harder to treat homes while continuing to address fuel poverty.

- The most important climate change mitigation measures in the buildings theme are improvements to the **thermal efficiency** of buildings, i.e. insulation and draught proofing.
- **Insulation** offers the greatest savings of any single retrofitted measure at very low cost per unit of energy (CO<sub>2</sub>) saved. Almost every building can benefit from more insulation.
  - Where applicable, **cavity wall** insulation offers the greatest potential CO<sub>2</sub> saving but **loft** insulation can also make a large contribution.
  - **Solid wall** insulation is more expensive, but because solid walls are extremely poor from an energy efficiency perspective, it can also save large amounts of energy. The high level of solid wall properties in Waltham Forest contributes to the high proportion of CO<sub>2</sub> emissions from the domestic sector in the borough – over 60,000 dwellings have solid walls.
  - The Council should begin a major campaign to **identify** all homes in the borough with **unfilled cavity walls** and encourage the owners to get cavity wall insulation. In the first phase, areas with high numbers of homes with cavity walls should be targeted with a **door-to-door service** being used to maximise take-up. A door-to-door scheme has been operating in Slough under the name Energy Care which has had good levels of response, particularly from individuals who would conventionally be thought of as ‘hard to reach’.
  - The GLA offers grants under the **London-wide insulation campaign**<sup>21</sup> scheme to subsidise the cost of installing insulation for anyone living within London and to provide insulation for free to those on benefits and the over 70s. Waltham Forest Council should signpost people to apply for the grants and support<sup>22</sup>. Other useful sources of funding include Warm Zone and the Energy Saving Trust.
- **Double glazing** saves energy although the extent of any energy savings is modest relative to the capital costs and therefore it is normally fitted for other reasons, such as cyclical replacement, noise attenuation or aesthetics.
  - In conservation areas and where people do not wish to replace their sash windows, **draught proofing and secondary glazing** offer some of the benefits of double-glazing without switching to uPVC frames. Double glazed windows with frames in other materials are available although they can be much more expensive. The Council should raise awareness among residents of the alternatives to uPVC which is one of the most polluting plastics available, possibly through a **design guide** explaining the damage caused by PVC and outlining the alternatives.

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<sup>21</sup> [www.london.gov.uk/diy/](http://www.london.gov.uk/diy/)

<sup>22</sup> The Green Homes Programme, [www.greenhomeslondon.co.uk](http://www.greenhomeslondon.co.uk)

- **Energy efficiency** of buildings will be critical to reducing the carbon emissions from Waltham Forest in the **short term**. Insulation measures offer the biggest quick win, it is also better for energy efficiency measures to be exploited before any district heating programme begins in earnest otherwise there is a risk that the network will be oversized which could lead to operational difficulties and increased cost.
- Combined Heat and Power (CHP) is beneficial as 65% of the energy released at conventional power stations is lost before it can reach the end user, primarily in the form of heat although a small amount is also lost in the transmission system; CHP in contrast is 90% efficient in reaching the end user. There are two key factors when trying to identify a potential location for district heating network.
  - The first of these is whether there are areas where there is new development with a **substantial heat load** preferably a mixed-use development where the demand will be spread throughout the day.
  - The second is whether there are any areas where there is a **high public sector heat demand**. The advantage of a public sector client is that there is a large demand for the heat; in the early stages of a district-heating network the operator can be subject to quite high risk if they do not secure enough custom. A public sector and LSP approach also allows for greater consideration of the fuel poverty and climate change benefits of district heating.
- The LSP should **identify potential nodes for a district-heating network** based around areas of high public sector demand, including the possibility of expanding from the 12 existing CHP plants in the borough. As part of this process neighbouring authorities should be consulted to ensure there is the potential for **interconnection** should they be considering developing their own networks.
- When Council and LSP buildings undergo major renovation, the highest possible sustainability standards should be imposed; the outcomes of the work should be used to **promote best practice renovation** throughout the borough. This is a prime opportunity to demonstrate leadership on energy efficiency, water use and climate change adaptation.
  - The outcomes of refurbishment in terms of climate change benefits should be made a clear requirement in the project specification (e.g. a particular CO<sub>2</sub> emissions rate per square metre of refurbishment)<sup>23</sup>
  - A maintenance manual should be produced to ensure that any measures installed as part of high quality refurbishments continue to be effective regardless of maintenance staff turnover.
- The move toward **whole-life costing** in the Waltham Forest Council procurement process should help to drive energy and water efficiency measures, and prevent these being

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<sup>23</sup> See "Building for the future: Sustainable construction and refurbishment on the government estate", National Audit Office, 2007 for more details [http://www.nao.org.uk/publications/nao\\_reports/06-07/0607324.pdf](http://www.nao.org.uk/publications/nao_reports/06-07/0607324.pdf)

thought of as dispensable when costs begin to rise. In order to ensure this occurs a **cost of carbon**<sup>24</sup> should also be applied which would provide an explicit way of measuring the climate change benefits of measures – the cost could be based on treasury guidance to central government. This approach should be extended across the LSP.

- The Council is looking to install renewable energy systems at office sites. Opportunities to **install on-site renewable energy** generation on Council and LSP properties should be identified and systems installed.

#### 4.4.3 Buildings - Adaptation actions

- Saving water is as important as saving energy. Water stress is already a problem for London with demand during hot summer months often exceeding water availability; this problem is only going to get worse. Climate change will increase the variability of rainfall and water availability; less rain is projected to fall during the summer months and there will be changes to overall rainfall intensity and duration; the ability of reservoirs and aquifers to effectively recharge may be reduced. London's increasing population will add current water demand, further increasing the risk of water stress in the coming decades.
- The most important options for saving water come from improving our water use efficiency practice and from non-drinking purposes such as installing dual-flush toilets and **water efficient equipment such as low-flow showerheads**. Further improvements can be gained through the **use of rainwater and grey water** systems.
- The Council and LSP should look into the possibilities for **rainwater harvesting and greater water recycling** at their sites as this may save a large amount of mains water and will reduce storm water run off.
  - If the site has a metered water supply, there may even be opportunities to save money with the UK rainwater harvesting association estimating that a commercial system may be able to pay back within five years.
- Subject to the structural demands of **green roofs** being met, the opportunities for green roofs to be installed should be investigated by the Council and LSP partners. Green roofs enhance biodiversity, reduce storm water runoff rates, act as supplementary insulation and can also mitigate the urban heat island effect – in part via transpiration.
- When buildings are **renovated**, the prevailing climate which can be expected in future years should be considered and specifications for works drafted accordingly; this should consider both **mitigation and adaptation** measures. As part of this, options for reducing summer overheating include effective use of **shading and passive ventilation** as well as alternative cooling technologies such as groundwater (sometimes called borehole) cooling and absorption chillers. Conventional air conditioning should be avoided wherever possible.

<sup>24</sup> The Green Book, HM Treasury. [www.hm-treasury.gov.uk/media/3/F/green\\_book\\_260907.pdf](http://www.hm-treasury.gov.uk/media/3/F/green_book_260907.pdf)

## 4.5 Waste & Recycling

The waste and recycling section of the strategy is based on the waste hierarchy identified by the GLA: Reduce, reuse, recycle; compost or anaerobically digest (source) separated waste; treat waste using advanced technologies to recover energy and materials; dispose of non-recyclable waste via incineration recovering energy for heat or power (not both). At no point do the proposals contained within this strategy reach the landfill stage of this hierarchy.

### 4.5.1 Waste & recycling - Existing actions

- The Council runs its fleet of refuse collection vehicles on **bio diesel** blends.
- There is an increasing proportion of **waste being recycled** – principally as a result of financial implications of the landfill tax and requirements of the landfill directive.
  - There is some **support for schemes to reduce and reuse**, including promotion of a real nappy scheme, a bike donation scheme and subsidised bins for home composting plus a green homes collection service for garden and kitchen waste which is being rolled out across the borough, including flats.
- The council has **reduced paper use** in their operations through a policy of only printing when absolutely necessary, combined with double-sided draft quality being made the default settings for printers. The LSP should ensure that all their offices have a similar approach and that all staff are aware of how to print multiple pages per side to further reduce paper use.

### 4.5.2 Waste & recycling - Mitigation actions

- Waste and recycling are areas with considerable environmental impact which include many other issues in addition to climate change. Legislation at EU and national level are already having a significant impact on recycling and landfill rates.
- The Mayor's Municipal Waste Management Strategy makes conventional mass burn incineration the option of last resort which means that non-recyclable waste must go via **alternative treatment routes**, primarily composting or advanced conversion technologies.
- Recycling is an environmental action where local civic pride is as relevant as wider environmental issues such as climate change and resource efficiency. For this reason action around recycling is a classic opportunity to think global and act local.
  - Recycling offers the potential to save a large amount of energy and resources relative to virgin materials; the benefits are particularly profound for metals and plastics. Recycling one tonne of aluminium saves over nine tonnes of CO<sub>2</sub> equivalent.
- A more co-ordinated approach to **recycling in flats** is being implemented which should enable a full recycling service to be implemented across the borough and a continued increase in recycling rates.

- Waltham Forest Council should work with the North London Waste Authority (NLWA) to ensure that any plant which is proposed in the current procurement round uses the best available technology and is sited appropriately following a full consultation process.
  - This strategy does not seek to pre-empt the decisions of the NLWA procurement process, but it is important to consider all options within the framework of the waste hierarchy. This set of options should mean landfilling becomes very little used for waste disposal.
  - The development of the waste plan should also seek to enable **the widest possible range of materials to be recycled** and to provide the capacity to recycle a much greater proportion of waste than is currently achievable. Recycling facilities should be located closer to the point of waste generation than at present to **minimise distances travelled by road** to recycling plants. At this stage it is not appropriate to place an upper limit on the distances which waste should be sent as this may limit the range of materials which can be recycled.
  - If the option selected includes the generation of syngas or biogas, the waste authority should give serious consideration to powering refuse collection **vehicles on upgraded gas**. This is already used on 12% of the refuse collection lorries in Stockholm<sup>25</sup>, where the vehicles have been popular with both drivers and the public as they are **quieter** than diesel lorries and can offer significant **air quality benefits** (Euro 1 to Euro 5 standard by fuel switching).
- The LSP should work with local restaurants to develop a collection **scheme for used cooking oil** to produce biodiesel, either in house or using a third party to produce the biodiesel.
- The Council's refuse collection vehicles are still running on low percentage biodiesel blends due to the lack of a readily available alternative and vehicle warranty implications. Some bodies, such as Southwark Council, have negotiated with manufacturers for permission to use **higher percentage blends**.

*Southwark Council received permission from the Peugeot-Citroen group to use high percentage blends in their refuse collection vehicles provided the fuel conforms to European standards.*

- The Council needs to implement a **review of its commercial waste collection service** and take the opportunity to enhance recycling provision for commercial customers; in part this may be funded by a reduction in the landfill tax burden as material is diverted to other waste treatment methods. Businesses should be made **aware of the Forest recycling project** as they may be able to provide recycling services and help businesses to reduce their waste and develop re-use schemes.

<sup>25</sup>

[www.trendsetter-europe.org/index.php?ID=956](http://www.trendsetter-europe.org/index.php?ID=956)

- **Minimising the amount of waste** generated and **reusing** products wherever possible are even more important than recycling. The LSP should seek to eliminate all single use polystyrene plates and cups from their catering and investigate any further opportunities to minimise waste production. Personalised or corporate branded re-usable cups have been suggested as alternatives. Catering is a very visible service that is experienced by visitors – switching away from single use products demonstrates commitment to sustainability.
- While there is paper recycling in all Council **offices**, **general recycling** could be improved across the borough's offices. The pilot scheme for all recyclables, currently in place from early summer 2008 at the Town Hall complex, needs to be extended across all sites within the LBWF and the LSP as soon as possible.
- The LSP should signpost householders to the WRAP website to help **plan their food shopping** to reduce the amount of food being thrown away without being eaten and to encourage a move toward fresh produce which comes in **less packaging**.
  - Work should be done with retailers to cut down unnecessary packaging – the winner of the call for ideas (run as part of the climate change stakeholder engagement process) was a proposal to develop a reusable bag scheme for Walthamstow town centre shops.

#### 4.5.3 Waste & recycling - Adaptation actions

- Any new composting facilities should be water neutral in order that they do not increase pressure on water resources, this may be achieved through various different measures including rainwater harvesting and process water recycling.
- Measures which have been identified for improving the performance of buildings apply equally to waste treatment facilities.
- During periods of very hot weather, the Council, in consultation with their waste contractors should consider the need to move collection times to cooler times of day.

### 4.6 Energy & Procurement

#### 4.6.1 Energy & procurement - Existing actions

- The Council is signed up to **non-fossil fuel tariffs** for larger sites.
- The procurement department are working with suppliers to produce **green catalogues** which will make it easier for officers to source sustainable supplies and through a Sustainable Procurement Strategy influence suppliers and their supply chain.
- A Council **Energy Strategy** has been produced to drive down energy use and consequent greenhouse gas emissions. The Energy Strategy outlines an action plan for improving the Council's energy efficiency and investment in renewable and low carbon energy generation.

- According to the energy strategy, there are 12 CHP plants under LBWF control. Since the Energy Strategy has been completed, a study into the status of the other six CHP systems has been undertaken by the council which shows that six were fully operational in 2007 generating almost 5 GWh of energy
- The **London Councils' Energy Management group** enables all London Borough Councils, including Waltham Forest to share good practice.

#### 4.6.2 Energy & procurement - Mitigation actions

- Currently, only the larger Council sites purchase electricity on green tariffs. The Council and LSP members should move **as much electricity as possible onto green tariffs**, with a long-term objective of having all electricity sourced from renewable supply. They must ensure that the tariff chosen offers **additionality** over the statutory obligations imposed by the renewables obligation.

It is important to note that although claims are made regarding the carbon neutrality of green tariffs, these are misleading as all electricity supplied to the national grid is used to calculate the average CO<sub>2</sub> factor used for reporting emissions. The purpose of switching energy onto **green tariffs** is to **drive demand and investment** in additional renewable energy capacity. This will not be the result of purchasing green tariffs if the electricity supplied is either from large hydro (the potential for which is exploited to the upper limit already in the UK) or generation which claims ROCs, as suppliers are under a statutory obligation to source an increasing proportion of their demand from renewable energy under this scheme.

There are a number of ways in which green tariffs usually achieve the additionality referred to above:

- i. The first is by retiring a proportion of their ROCs. ROCs are tradable certificates issued to generators for each unit of renewable electricity produced from eligible sources. If these are "retired" i.e. not traded on the ROC market, this reduces the availability of ROCs increasing the demand for and hence the price of ROCs. This should make renewable energy a more attractive investment encouraging greater levels of installation of new renewable generation capacity.
  - ii. The second is by paying into a 'green fund' which invests in renewable energy or energy efficiency projects.
  - iii. A third approach could be to require the energy supplier to invest directly in new renewable capacity. This approach would be most effective when members of a buying group work together to put pressure on their supplier. This best practice should be rolled out to other partners in the LSP.
- The LSP should **work with central government** for a change in the support mechanism for decentralised low carbon energy generation. The current regime is effective for large

renewable projects such as wind farms, but is too difficult for small generators to benefit from the Renewables Obligation Order<sup>26</sup>.

- The Council should **implement the recommendations of the energy strategy** including ensuring all the Council owned CHP engines are fully operational and keeping abreast of developments in street lighting technology such as solar power and white light LEDs underpinning early pilots and roll-out the emergent technologies.
- A web-based system for submission and assessment of **energy statements** from developers as part of the **planning process** should be explored speeding up the data gathering process and **freeing up capacity** in the energy efficiency team.
- Both the Carbon Footprint report and Energy Strategy recommend greatly **improved monitoring of energy use**, both within buildings through regular meter readings and in transport through accurate recording of mileage claims and details of multi-modal journeys in staff travel surveys.
  - Good data collection allows comparisons between current and previous energy use which is a strong driver of behavioural change.
- The Council and LSP partners are large organisations that can and should use their position as a customer to **improve suppliers' environmental awareness** through sustainable procurement guidelines.
  - Key procurement **staff must be trained** in environmentally sound procurement. Guidance is being developed in conjunction with the GLA.
  - Contractors should be asked to report mileage or fuel usage for LSP business. This could be developed in partnership with the transport theme and would be of particular importance to suppliers such as couriers and delivery companies which have high mileage on LSP business.
- Procurement policy should consider the impacts of climate change beyond the borough.
- The LSP should investigate funding opportunities for the installation **of renewable technology on LSP properties** and investigate the feasibility of creating an Islington style **climate change fund**<sup>27</sup> which recycles cost saving from energy efficiency gains back into further actions.

*Islington Council has created a £3 million Climate Change Fund to support green energy and transport capital projects from households and community groups, that will reduce carbon dioxide emissions throughout the borough.*

*[www.islington.gov.uk/environment/climate\\_change/fund.asp](http://www.islington.gov.uk/environment/climate_change/fund.asp)*

<sup>26</sup> Rules for generators connecting to the national grid already make a distinction between large and small generators; this could provide a template for differentiated renewable support.

<sup>27</sup>

- Although biomass CHP is not expected to play a major role in Waltham Forest in the short or medium term, if it is implemented, this must be at a large enough scale for cleanup technology to be installed to prevent negative impacts on air quality.

#### 4.6.3 Energy & procurement - Adaptation actions

- **Use whole-life costing** which considers the future running costs as well as the physical build costs when assessing the feasibility of renewable, low carbon energy and climate change adaptation measures to justify the increased initial costs due to reduced future running costs.

### 4.7 Managing natural habitats.

#### 4.7.1 Managing natural habitats - Existing actions

- The Council has identified four pilot sites for biodiversity **improvements along transport corridors** and secured TfL funding.
- The borough's six premier parks have attained or are being brought up to **Green Flag standards** through the development and implementation of park management plans. These include actions to address climate change impacts.
- There is a comprehensive series of action plans covering each of the eleven habitat types in Waltham Forest which are due to be updated. The GLA's **Access to Nature** programme has identified areas of London (including in Waltham Forest) where access to nature is limited; parks will become key biodiversity areas in these places.

#### 4.7.2 Managing natural habitats - Mitigation actions

- All measures under the Natural Habitats theme are predominantly adaptation measures, although some will also have modest mitigation benefits.

#### 4.7.3 Managing natural habitats - Adaptation actions

- Green spaces are a very effective form of '**soft**' **flood management options** which reduce total flow, reduce peak runoff rates and allow water to drain away into the ground; unlike hard surfaces such as concrete and tarmac.
- The Council should consider innovative ways to build vegetation into the environment e.g. **living fences**, use of climbing and trailing plants to create "**Green walls**" and planting **fruit trees in community gardens** as part of local food growing initiatives.
- **Green roofs**, including roof gardens where appropriate, should be piloted by the Council and LSP on public buildings, and promoted to householders and businesses in Waltham Forest.

- A campaign to **protect front gardens** would have a significant cumulative value for slowing runoff<sup>28</sup>.
- **Design guides** should be developed
  - Detailing retrofit options for garden areas which are already hard surfaced.
  - Providing general good planting guidance including those well suited to the changing climate.
- The **green corridors** of the Lea Valley and Epping Forest are major regional green spaces and will continue to be important in the future. The Lea Valley green corridor in particular is important as it is at greater river flooding risk than other parts of Waltham Forest; the green corridor provides an excellent soft flood defence. A **co-ordinated planting strategy** to protect biodiversity in these areas is necessary.
- Planting street **trees into flexible permeable surfaces** with tree soil as sub-base. Allows free root growth and reduces flood risk. Subsidence risk is also lower as trees don't need to spread roots as far to find sufficient nutrients.
- **Home zones** provide excellent opportunities for redesigning street spaces so as not to be dominated by car parking and incorporating plants into the new layouts.
- **Open space near water** is typically cooler than other areas and hence could provide an important space for recreation and reduce over-heating.
- **Review Waltham Forest's blue corridors**, especially concrete banked and based, with a view to allowing **public access for transport and recreation, particularly cycle ways**. Remodel stream banks to slow down flood run-off, allow people to get out if they fall in and create wetland habitat. Opening up these corridors could also allow links between other green spaces to be forged.
- The Council's pilot '**adopt a tree**' scheme should be expanded and consider more formal volunteering schemes, this will support the maintenance of street trees and provide a potential means of raising revenues which could be used to support community biodiversity projects.
  - Species which are planted should be capable of adapting to the environment which they will experience in the future which includes new diseases which may spread to the UK as well as the weather impacts of climate change. This may be particularly important for longer lived trees which will experience more severe climate change.
  - Urban planting will provide adaptation benefits through the provision of shade and reducing temperatures; both through the shading of the ground and also through transpiration.

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<sup>28</sup> Crazy paving: The environmental importance of London's front gardens, 2005  
[www.london.gov.uk/assembly/reports/environment.jsp#gardens](http://www.london.gov.uk/assembly/reports/environment.jsp#gardens)

- Waltham Forest has a strong social enterprise sector; the LSP should work with organisations such as the Hornbeam Centre, Organic Lea and Voluntary Action Waltham Forest to **develop community gardens and local food growing** initiatives which will contribute to community cohesion and health issues. The Hornbeam Centre is interested in trialling a local food growing initiative, particularly if this could involve CHP energy production.
- There is an opportunity to improve co-ordination of the approach to planting schemes in biodiversity areas which are of regional as well as local significance (e.g. Epping Forest and Lea Valley Regional Park).
  - Enhancing green space will provide benefits in terms of providing a local cooling effect and help with efforts to counter the urban heat island effect.
- There is a need to consider ways to protect mature shrubs in public planting schemes.

#### 4.8 Communications and outreach

Behavioural change through outreach work aims to achieve a **change of mindset and thought process**. In all areas of environmental concern, there is a similar **hierarchy** which can be followed. This approach should be reduced to its simplest possible form and disseminated. It can be thought of as being:

- Minimise the amount of consumption
- Maximise the efficiency
- Minimise harm from whatever remains

A good example of this is the **waste hierarchy; reduce, reuse, recycle** (recover energy).

##### 4.8.1 Communications & outreach – current activity

###### Waltham Forest Council

- The Council has good experience in community engagement, including programmes which are directly relevant to environmental issues or that used approaches which could be adapted to climate change work. Key examples of this are:
  - Within the borough-wide recycling programme, there was a **recycling initiative with black, asian and minority ethnic communities** with the aim of increasing “involvement and participation in recycling in the south of the borough”.
  - The ‘**Health preachers**’ scheme which was developed in Waltham Forest to engage faith communities on healthy living could be easily adapted to create a scheme with an environmental focus.
- Throughout the development of this climate change strategy, there has been a high level of stakeholder engagement internally within the LSP, externally with relevant regional

bodies and with the general public in Waltham Forest. As part of this process, there was a ‘**Call for ideas**’ run by the Council which asked members of the public for their ideas and emotions on climate change. This generated a large number of responses with awards for the top three ideas presented at the Big Conversation on Climate Change which was held at the end of February. The winning ideas can be found in an appendix to this document.

- There is a climate change section on the council website which provides a good level of information on the scientific basis, the impacts of climate change and signposts people to external grant and advice sources. It also details what the Council are doing on climate change and what actions can be taken by people in Waltham Forest.
- The Council have signed up to the Carbon Trust’s Local Authority Carbon Management programme, “The primary focus of the work is to reduce emissions under the control of the local authority such as buildings, vehicle fleets, street lighting and landfill sites.”
- The annual Green Fair has been held in the borough for many years and is well attended.
- Weekly farmers markets are held in Walthamstow town centre

### **A selection of initiatives from other organisations**

- Organic Lea aim to provide a supply of local food, stimulate demand for local food & increasing access to local organic food – projects include food market stall, training courses, food box scheme, community gardens and work with low income households
- HEET provide domestic energy efficiency adaptations for vulnerable and low income households in LBWF
- Forest recycling project – Business recycling, re-use initiatives, bike maintenance, computer refurbishment, doorstep estate recycling and volunteering projects
- Hornbeam centre – projects around nature conservation and community kitchen, local food festival, knitting group

### **4.8.2 Communications & outreach – mitigation actions**

More than any other theme, Communications and Outreach has actions which cover both mitigation and adaptation to a large degree. The LSP must recognise that behavioural change requires **long-term support** over periods of decades rather than years. While in the shorter term, with sufficient resourcing, much can be done to address the greatest inefficiencies and wastages, once action on these has been achieved, ongoing improvement will continue but will most likely be incremental rather than dramatic.

#### **General:**

- Awareness raising and behaviour change projects whether at work or at home could cover a range of topics in some of the following areas:
  - Travel and holidays

- Purchasing habits. For example major consumables like food and electrical and electronic equipment which can have a large lifetime impact on CO<sub>2</sub> emissions
- Water use
- Buildings, heating, lighting and other energy use
- Sustainable energy generation
- Waste and recycling
- Green space, biodiversity, plants and animals
- Use the EST Green Barometer III report<sup>29</sup>, the 2007 resident panel survey<sup>30</sup>, 2008 Youth Survey and the Defra Framework for pro-environmental actions<sup>31</sup> to develop an understanding of what the **key drivers** of action (and inaction) are for Waltham Forest.
  - Keep things simple and **focused on results**.
  - Education is useful but focus is on climate change rather than action.
  - Behavioural change is about **making people believe that changes are achievable** and that they are the best way to proceed.
- Probably the single most important work of the communications and outreach theme will be to **signpost existing support schemes** in all areas from transport to domestic energy consumption, recycling and water efficiency.
  - A **database** of grant schemes, funding providers and useful contacts should be created and maintained to make sure that the greatest possible number of opportunities is captured.
  - This will enable significantly more work to be done than could be done through LSP-funded programmes by directing individuals and businesses toward schemes run by organisations such as the EST, GLA and central government.
- Further develop the **climate change section of the council website**
  - Raise the prominence of signposting to other schemes and include actions on adaptation in addition to mitigation.
  - There are also some pieces of information which are based on national data which could be changed to Waltham Forest specific data (for example, the proportion of emissions from the domestic sector is higher in Waltham Forest than nationwide).
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<sup>29</sup> Green Barometer Report III, November 2007, EST. [www.energysavingtrust.org.uk/uploads/documents/aboutest/GBIIIFINAL%20-%20use%20me!.pdf](http://www.energysavingtrust.org.uk/uploads/documents/aboutest/GBIIIFINAL%20-%20use%20me!.pdf)

<sup>30</sup> Waltham Forest Residents' Panel Survey - Autumn 2007, [www.walthamforest.gov.uk/november-2007-res-survey.pdf](http://www.walthamforest.gov.uk/november-2007-res-survey.pdf)

<sup>31</sup> A Framework for Pro-environmental behaviours, Defra. [www.defra.gov.uk/evidence/social/behaviour/pdf/behaviours-jan08-report.pdf](http://www.defra.gov.uk/evidence/social/behaviour/pdf/behaviours-jan08-report.pdf)

- Develop an identity of all climate change awareness work. Plan an ongoing campaign that is sustained, but covers different topics periodically. The best vehicle for this and the media that should be employed need to be discussed.
- Considering the method of communication is key as is utilising existing resources, showing films like 'An Inconvenient Truth' are a great way to get people talking and inspired to make a change

### The Council and LSP:

- Internally, the Council and LSP partners should **embed environmental sustainability** including climate change into staff training. As the LSP represents some of the largest employers in the borough, if even a modest proportion of their over 5,000 staff made changes at work and at home that would represent huge savings.
  - A section could be added to the **induction** process for new staff which would ensure all departments have an appreciation of the importance of environmental sustainability, a grasp of the basic issues and a clear idea of their role.
  - Training for current staff, could be provided.
  - Climate change champions to work across each LSP organisation
- 'Switch off' campaigns with staff
- Provide training to Council staff that interact with businesses (e.g. Environmental Health Officers) to give information on climate change actions and sources of support and funding.
- Investigate partnerships, with utility companies in particular, to provide items such as low energy light bulbs, water hippos or draught proofing materials.
- Consider utilising existing information sites such as libraries for information displays which could for example use on-line carbon calculators
- Expand 'Fuel Rich' road shows (incl carbon calculator and energy bike)
- Support third sector organisations to identify sustainable succession strategy / funding for 'pilot' projects
- Consider food growing / demonstration projects from different cultures at allotments and Council premises
- Set up green awards, possibly as part of existing business awards, that have a range of categories to cover all sectors of the business, school and resident community
- Promote the Mayor's food strategy<sup>32</sup>, in partnership with the LDA and GLA and consider areas where borough specific work can be aided. For example the local food growing work at the Hornbeam Centre.

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<sup>32</sup> Healthy and Sustainable Food for London, GLA, 2006. [www.london.gov.uk/mayor/health/food/docs/food-strategy.pdf](http://www.london.gov.uk/mayor/health/food/docs/food-strategy.pdf)

### Third sector organisations – charities and community groups:

- Build on previous **work with faith communities** on health issues to promote action on climate change.  
The results of a poll of experts on climate change carried out by the environment agency in 2007 put leadership by faith groups as second on a list of the 50 most important actions to save the planet<sup>33</sup>. This could be through the Faith Forum. Promote the Eco Congregation programme which promotes links between environmental issues and Christian faith and investigate opportunities to adapt the scheme to other faith groups
- Develop and bid for funding to run outreach programmes with community groups to achieve reductions in energy. E.g. regular community meetings to learn about and exchange ideas on the many ways to reduce carbon emissions
- Work with third sector organisations on projects to increase energy/carbon awareness and reduce emissions
- Consider ‘Sustainable Haringey’ or Transition Town style initiative (a transition town is a community which has made a commitment to reducing fossil fuel dependency in all aspects of daily life)
- Work to raise awareness on how carbon emissions can be reduced with residents groups
- HEET to develop carbon literacy project to reduce carbon emissions

### Businesses and Social enterprises:

- Start a **climate change partnership** to work with businesses to act on climate change, although it is important to note that many businesses in Waltham Forest are SMEs.
  - Support of the **LSP partners will be crucial** to providing credibility to the scheme, as some of the larger organisations in the borough, their participation will increase the potential impacts.
  - A climate change network like the Islington Climate Change Partnership could be implemented in Waltham Forest with a broader scope including **adaptation as well as mitigation** measures.

*Islington Council has created the Islington Climate Change Partnership (ICCP) to facilitate public, private and voluntary sector organisations working together to implement initiatives which reduce CO<sub>2</sub> emissions.*

*[www.islington.gov.uk/Environment/GettingGreener/iccp/](http://www.islington.gov.uk/Environment/GettingGreener/iccp/)*

- Businesses should be advised about the financing options available to them to implement sustainability improvements; through tax relief, grant funding and

<sup>33</sup> Your Environment Extra, Issue 17 - November 2007 - January 2008, The 50 things that will save the planet, Environment Agency. [publications.environment-agency.gov.uk/pdf/GEH00907BNFQ-e-e.pdf](http://publications.environment-agency.gov.uk/pdf/GEH00907BNFQ-e-e.pdf)

financing structure such as those identified in the Siemens financial services report “Can UK business really afford a low carbon economy?”<sup>34</sup>

- The Carbon Trust offers the **Carbon Management programme** to any public sector organisation and a similar service to private sector organisations to help reduce their greenhouse gas emissions. The Council has joined this scheme and should use the experience to advocate the programme to other large organisations in the borough.
- A **network of green/eco champions** should be created covering the LSP and wider business sector to help drive behavioural change in organisations. Using existing business networks and umbrella bodies such as the Chamber of Commerce or Business Link would be useful.
  - Champions would be responsible for **monitoring** energy (and if possible water) use in their organisation and spearheading **awareness campaigns** (e.g. switch-off campaigns).
  - Experience elsewhere shows that the presence of champions in the workplace can increase both the magnitude and durability of such campaigns.
- A specific project with retailers and market traders, possibly around minimising or preferably eliminating the use of plastic bags
- Develop training and internships in low carbon technologies
- Develop **green networks at business parks** to spread good practice and allow bulk purchasing etc, for example site-wide recycling could reduce costs for all participating businesses.

### Youth / Schools

- A clear call from the stakeholder engagement events was to initiate youth projects. The best people to advise on this are youth themselves. There are already a number of networks and forums in Waltham Forest such as the ForestFlava youth website and the Press Gang who write articles. A youth climate change conference could be set up to steer youth based projects and communications.
- Work with “Children & Young People (CYP) Involvement Standards & Toolkit” in 2009 / 10
- Consider starting Environmental Youth Champions scheme
- Explore green volunteering opportunities
- Consider membership of London Sustainable Schools Forum

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<sup>34</sup> Can UK businesses really afford a low carbon economy?, Siemens Financial Services, 2007. [www.siemens.co.uk/pool/news\\_press/news\\_archive/nov\\_23\\_2007/carbon\\_report\\_1467877.pdf](http://www.siemens.co.uk/pool/news_press/news_archive/nov_23_2007/carbon_report_1467877.pdf)

- Set up a local environment network for schools with a focus on energy efficiency and the corresponding financial savings – as per Walthamstow West Community Council Schools Environmental project
- Encourage schools to attain EcoSchools accreditation. There are some schools in the borough that have started the EcoSchools process and this should be publicised.
- Education projects are the perfect accompaniment to installation of renewables such as solar panels in schools. Where renewables are installed, awareness projects should be encouraged
- UK Food Recycling<sup>35</sup> – work with schools to take food waste for composting

### Initiatives for residents – organised through Council, LSP or community groups

- Behavioural change offers excellent **community cohesion opportunities**. Older or ethnic minority residents who have grown up in an environment where resources are more costly, scarcer or both have learned techniques for minimising use of energy and maximising use of resources (i.e. minimising waste).
  - Projects to transfer these skills to groups of other residents who may not have these skills could provide **new links between different parts of the community** while also providing scope for positive environmental outcomes. The stakeholder engagement suggested an intergenerational food project which could include: local food growing, minimising food waste and cooking in an energy efficient way.
  - Consider working specifically with the six equalities streams to engage a wide cross section of the community in the future development of projects
- The work of the EST advice centre includes outreach, Waltham Forest should identify opportunities for events either separate EST only or existing events with an EST stall, for example the Green Fair.
- A **network of community champions** for climate change should be created covering the LSP as well as the residential and business sectors to help drive behavioural change in their communities and organisations.
  - Eco-Teams – Global action plan partnerships with residents groups has secured funding for three in London
  - **Community champions** can exert influence over a wider range of people and will be particularly important in minority communities where personal contact can be much more effective than conventional media campaigning. Champions should be taught about the key issues so they can best help their communities.
- **CRAG's** (Carbon Reduction Action Groups) – there are currently London groups in Hackney, Hither Green, Peckham and Tower Hamlets. A CRAG is a group of people who

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<sup>35</sup> UK Food Recycling are a not for profit social enterprise who collect food waste for composting from large organisations such as schools, hospitals and caterers in London and the surrounding area. [www.ukfoodrecycling.com/](http://www.ukfoodrecycling.com/)

have formed a voluntary group which limits the level of carbon emissions produced by its members; and often incorporates an element of emissions trading amongst the participants.

#### 4.8.3 Communications & outreach – adaptation actions

- Work with Thames water to deliver a water awareness campaign. This could include **events**, a promotion of free **meter installation** (which includes the option of switching back to unmetered in the first 12 months) and **subsidised water efficient equipment and devices**.
- Raise awareness that the climate is going to change in the next few decades, show the solutions which are available and help people to make the changes necessary.
- Signpost useful adaptation help and advice including
  - Waterwise's resources on water efficiency<sup>36</sup>.
  - Department of Health guidance on how to cope with hot weather and what to do in the event of a heatwave<sup>37</sup>.
  - The Environment Agency's flood warning information including flood-risk maps and floodline information service<sup>38</sup>.
  - The adaptation report, "Your home in a changing climate"<sup>39</sup>.

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<sup>36</sup> [www.waterwise.org.uk](http://www.waterwise.org.uk)

<sup>37</sup> What to do in case of a heatwave, Department of health, 2008. [www.dh.gov.uk/en/Aboutus/MinistersandDepartmentLeaders/ChiefMedicalOfficer/Features/DH\\_4135398](http://www.dh.gov.uk/en/Aboutus/MinistersandDepartmentLeaders/ChiefMedicalOfficer/Features/DH_4135398)

<sup>38</sup> Floodline, Environment Agency, 2008. [www.environment-agency.gov.uk/subjects/flood/826674/](http://www.environment-agency.gov.uk/subjects/flood/826674/)

<sup>39</sup> Your home in a changing climate, Three regions climate change group, 2008. [www.london.gov.uk/trccg/docs/pub1.pdf](http://www.london.gov.uk/trccg/docs/pub1.pdf)

## 5 Monitoring, targeting and reporting

To ensure that a long term strategy achieves its goals, the following monitoring and reporting procedure has been established.

The LSP will monitor **progress against the CCS annually**. The CCS will be reviewed on a three year cycle to ensure that the most up-to-date measures and targets are being focussed on and the climate change strategy posted on the Council's website.

The Council has already passed a motion requiring a climate change impact assessment be submitted for Council reports. The new national indicators will require adaptation to climate change to be embedded in all Council strategies. Extension of this requirement to the whole LSP should be considered.

The energy strategy provides for improvements to the monitoring of energy use by the Council, all LSP organisations should commit to more frequent energy usage monitoring and should report usage against comparable historical data to staff, in order to encourage continuing reduction in energy use.

Water use should also be monitored, with targets put in place for ongoing reduction of water use, both within LSP operations and the wider community. A baseline needs to be established for adaptation performance such that monitoring of progress can be conducted effectively.

It is important for the Council and the **LSP** partners to demonstrate **leadership** on climate change, as it will allow the dissemination of good practice which has been learned and allows for a stronger advocacy role. This was summarised as "becoming the change we want to see" by an attendee at the stakeholder engagement event with Council staff.

An officer at LBWF has been nominated as Climate Change Champion. The climate change champion will have the task of managing the delivery of the council's commitments under the CCS. The creation of such a role is necessary because of the interdepartmental, cross-cutting nature of the actions required by the CCS and an approach that should be replicated across the LSP to ensure embedded delivery of the strategy.

## 6 Key Next Steps

The Climate Change Strategy is a long-term plan, but action needs to be taken now to ensure that targets are met. This section highlights the most important actions for the next three years. They have been chosen because they offer quick wins, lay the groundwork for larger gains later or represent specific opportunities during this timeframe. The list of actions is not exhaustive and action also needs to begin on other tasks however, these selected actions have the greatest potential to lower CO<sub>2</sub> emissions and improving sustainability within a changing climate.

- **Funding** opportunities need to be sought. This includes grant funding, support from external agencies (e.g. the Carbon Trust) and innovative mechanisms such as a ring-fenced climate change fund. Phase one alone is costed at £2.4m and therefore accessing funding will be a key challenge. Business will be encouraged to reduce their emissions through national programmes such as the Carbon Emission Reduction Commitment.
- There should be an **aggressive programme of insulation** which is **targeted** in areas where take up is known or suspected to be low relative to the overall potential.
- The **feasibility of CHP and district heating** in the borough needs to be studied including **zones** from which a network could be developed and financing options also need to be considered – in particular **ESCo models**.
- Opportunities for **renewables installations** should be identified and systems fitted as soon as possible, initially to serve in part as a demonstration measure.
- The **LDF** should have a raft of **strong environmental measures** which go beyond the minimum statutory requirements.
- **Parking policy** needs to continue to evolve and be monitored to ensure it is achieving the objective of **lowering the CO<sub>2</sub> emissions from vehicles**. This applies to both on-street CPZ policy and corporate policy – in particular, free staff parking at LSP sites.
- **Action should** be taken to **reduce freight emissions** through improved logistics, modal shifts to rail and **river transport and work with the business** sector.
- LSP **building refurbishments and any new builds** should be to the **highest possible standard** and consider measures to adapt to climate change as well as mitigate through low **carbon technology**.
- **Work to improve public transport with TfL** should continue including working for improvements to infrastructure and North-South bus route provision (this is particularly important to ensure accessibility to the Olympics venues).
- The recently completed **energy strategy** should be implemented as soon as practicable.

- Through the NLWA, the Council should push for the **next generation of waste treatment** to use best available technology to **maximise materials and energy recovery** while minimising waste sent to landfill and other environmental impacts.
- **On street recycling** should be provided as well as, or instead of, normal litter bins to encourage people to behave as responsibly as possible.
- Enact a **programme of water efficiency measures**.
- The Council's **commercial waste recycling** service needs to be reviewed.
- Flood risk areas should be identified through emergency planning and **soft flood management options** created in suitable areas.
- As part of a targeted insulation programme there should be wider activity to **signpost existing programmes** of funding and information from national and regional bodies.
- The possibilities for a **local food growing** initiative should be looked into, with particular attention paid to **community and youth involvement**.
- **Behavioural change** makes a significant contribution to both adaptation and mitigation activity and needs to be driven forward, primarily through the actions identified in the communications and outreach theme.

## 7 Conclusions

This section summarises the main findings of the Climate Change Strategy.

### 7.1 Overview

CO<sub>2</sub> emissions in Waltham Forest stood at 1,089 kilo tonnes in 2005 (the latest year for which data is available). Of this, 44% are from the domestic sector, with the remainder equally split between the commercial and industrial sector and road transport. This corresponds to per capita emissions of 5 tonnes per year, slightly lower than the median for London Boroughs but very high compared to global averages.

We have produced a mitigation scenario based on the unique set of limits and potential opportunities in Waltham Forest such as the age of the housing stock, demography, geography and the high proportion of domestic emissions relative to the average. The scenario modelling covers the period to 2050 and includes three interim target dates of 2012, 2015 and 2025 which gives an impression of how rapidly progress is being made on reducing CO<sub>2</sub> emissions.

In the chosen scenario, the greatest CO<sub>2</sub> savings are from CHP with district heating, behavioural change and moves away from carbon intensive car use toward more sustainable travel choices. Important contributions to emissions reduction targets will be made by renewables and energy efficiency measures (predominantly insulation).

The action plan has been created with the intention of showing how the measures identified in the scenario can be brought about.

In the shorter term, the primary areas of focus for mitigation are:

- Reducing demand for energy through **efficiency works and outreach activities** which will show people ways of lowering their energy usage and help them to put these methods into action
- Ensuring **existing CHP and district heating** systems are operating at their peak level
- Continuing work to get people from transport by private car to more **sustainable transport**

In the longer term, there is a focus on the implementation of the organisational structure to create a large-scale district heat network, based on the approach of developing local district heating clusters which will grow and interconnect – possibly into similar networks in neighbouring boroughs.

Adaptation measures have been proposed to counter the existing, and growing problems of water stress, overheating and flooding. Some of the most important actions which will deal with these issues are water efficiency measures, green roofs and passive cooling options.

While some of the costs associated with the CCS may seem daunting, the Stern review, produced for the Treasury in 2006, concluded that in the long term, the cost of inaction greatly outweighs the cost of action<sup>40</sup>.

### 7.2 The Vision

If the objective of this climate change strategy is to come to fruition, it will require a large-scale shift in the production and consumption of energy. Combined heat and power and district heating could supply almost all the heat requirements of the borough and a significant portion of the electricity demand. Insulation is a key factor in achieving early emissions reductions with local renewable electricity generation of growing significance as time goes on.

In the field of transport, a reduction in the total amount of journeys made by car is a big factor with journeys being made by alternative modes such as public transport, walking and cycling or even not being made at all. Vehicle transport which still occurs will become more efficient through improved technology and smarter vehicle choices.

A move to more efficient use of water will be a core part of the adaptation agenda; it will also offer benefits on the mitigation side as a reduction in water use will have associated impacts on the energy demand from the water supply industry and water heating requirements.

Flood risk areas will be publicised and buildings within these areas should undertake measures to cope better with flooding – either through resisting the ingress of water entirely or reducing the need for repairs after flood events.

### 7.3 Implementation

The action plan has been produced showing a set of measures which are intended to lead to the CO<sub>2</sub> reductions which need to happen. The action plan gives estimated costs of implementing actions, including the cost of additional staff, where current resources would be unable to meet objectives unaided. An important part of the implementation of the CCS is the full support of the LSP which needs to take a lead role and influence the rest of the community through their funding, words and actions. The Council will need to address the policy issues outlined in this document that will create the conditions in which the large and necessary cuts in CO<sub>2</sub> emissions can take place.

Climate change is a long-term problem with solutions that can begin now but need to go on for many years to come. As the climate changes, Waltham Forest needs to have made the cultural and infrastructure changes to ensure that it is suited to future conditions and is able to cope with the changes to temperature and precipitation patterns which are projected. Implementation of the Climate Change Strategy will help tackle climate change at the local level. High expectations have been raised through the stakeholder engagement which the LSP now has the challenge of leading delivery on.

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<sup>40</sup> Stern Review on the Economics of Climate Change, HM Treasury, 2006. [www.hm-treasury.gov.uk/independent\\_reviews/stern\\_review\\_economics\\_climate\\_change/sternreview\\_index.cfm](http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/sternreview_index.cfm)

**This document has been produced by Waltham Forest Council and SEA Renue on behalf of the Waltham Forest Local Strategic Partnership.**

## 1 Appendix: Phase 1 Action Plan 2009-2012

### 1.1 Introduction

This appendix identifies the actions outlined previously for the first three years of the CCS and provides more detailed information on approximate costs, CO<sub>2</sub> savings, timeframes and ownership.

The actions have been allocated to a theme. Actions are grouped according to mitigation and adaptation to climate change and whether they are an issue for action by the Council, LSP or the whole of Waltham Forest including all businesses and individuals. This does not commit the LSP to any course of action, nor does it imply that completing all of the actions in the list will result in the scenarios becoming a reality.

The priority indicated is a judgement based on a number of factors such as impact on CO<sub>2</sub> emissions, necessary timescale or value as an example – they are given as either **high, medium or low (H, M, L)**. The cost is based on an initial estimate of capital cost and staff time and is indicative only. Each action would need to be separately costed to provide an accurate figure. Note that this is not the same as the methodology used to calculate capital costs in the scenario modelling, and the sum of the costs here does not equal the total capital costs for the scenarios.

An indication is given of the potential CO<sub>2</sub> saving that the action leads to. Where a figure is given, it is often taken from the maximum potential from the relevant measure in the model, and these figures would not be the result of the single action in isolation.

There are often overlaps and some of the actions described could positively reinforce others both within the action plan and in other areas of LSP activity.

Indicative costings at 08/09 prices

Timescale: 'phase 1' = 2009 – 12, 'phase 2' = 2013 – 15, 'phase 3' = 2016 – 25, 'phase 4' = 2026 – 50

Responsibilities: LA = Council, LSP = Local Strategic Partnership, Bus = Businesses, Res = Local residents

## 1.2 Planning & Housing

Priority	Action	Type of measure	Initiative timescale (Phase 1)	Description of costs	Cost (£)	Climate change outcomes / CO <sub>2</sub> saving
M, LA	1. Make climate change an explicit planning issue when drafting the LDF to be adopted in 2010. Introduce/extend climate change related planning restrictions	New build	Phase 1	Additional staff time for policy development	5k	Preventing emissions growth of 1,700 tCO <sub>2</sub> pa, ensures new buildings will be flexible enough to adapt to whatever the future holds
H, LA	2. Through LDF process, update UDP policy WPM21 to require a 20% reduction in CO <sub>2</sub> rather than energy, remove minimum size requirements (10+ homes/1000m <sup>2</sup> )	New build	Phase 1	Additional staff time for policy development, marginal cost for measures introduced may be passed on to consumers	5k	CO <sub>2</sub> emissions growth reduced by 3,000tpa
H, LA	3. Carry out a study of sites where a borough wide district heating system could be started (including the borough's existing CHP systems). This should be based on areas of high public sector heat demand and large new developments.	CHP	Phase 1	Feasibility study including siting options for CHP plant, mapping of suggested network pipe routes and costing.	35k	Essential to CHP heating scenarios which are necessary to meet an 80% target. In the scenario, CHP technologies save almost 450 ktpa by 2050.
H, LA	4. Encourage rainwater and grey water usage through the planning system	Adaptation	Phase 1	Additional staff time for policy development	5k	Significant water savings (37% of domestic consumption is for toilet flushing and outdoor use)
M, LA/ Bus	5. Signpost LEP/London Councils guidance for developers on compliance with building/planning regulations	New build	Phase 1	Modest costs to signpost existing guidance	5k	Modest CO <sub>2</sub> savings from improvements to new builds
H, LA	6. Require cost effective improvements to existing parts of buildings when extensions are built - including adaptation measures	Energy efficiency, Water efficiency, Adaptation	Phase 1, ongoing	Additional staff time for policy development, cost of measures paid by the able to pay market (assumes measures are cost effective and a small fraction of the cost of an extension)	5k	CO <sub>2</sub> savings dependent on rates of extensions and whether requirement is for no net increase in emissions from building(s) or for reduction in overall building emissions
H, LA	7. Ensure building regulations are followed and Section 106 commitments are respected	New build	Phase 1, ongoing	Additional staff time to undertake work	10k	
L, LA	8. Explore options for providing support to install microgeneration in	Renewable energy	Phase 1, ongoing	Fund awarding interest free loans (or grants) to organisations and residents to		CO <sub>2</sub> savings: Domestic PV: 455kg/yr per system; Small Wind: 600kg/system/year;

Priority	Action	Type of measure	Initiative timescale (Phase 1)	Description of costs	Cost (£)	Climate change outcomes / CO <sub>2</sub> saving
	addition to the LCBP			top up LCBP awards. See <a href="http://www.lowcarbonbuildings.org.uk">www.lowcarbonbuildings.org.uk</a> for details of grant awards		solar thermal 330kg/system/year;
M, LA	9. The LDF which is currently under development will make explicit a requirement for developments to be resilient to the effects of climate change over the design life of buildings	Adaptation	Phase 1, ongoing	Additional staff time for policy development	5k	Buildings which will be fit for purpose in future climactic conditions. Should also result in CO <sub>2</sub> and water savings
M, LSP	10. O-rogen to disseminate learning from SCORE centre to developers and other boroughs.	New build	Phase 1, ongoing	Produce a case study to be posted on website which can be shown to developers / LSP partners	-	Best practice new developments could save 20% more CO <sub>2</sub> than typical new builds and 50% of the CO <sub>2</sub> emissions of typical existing buildings
H, LA	11. Require sustainable travel plans for new developments including car-free developments wherever possible	Transport	Phase 1, ongoing	Additional staff time for policy development, work with developers to understand requirements of travel plans	20k	-
M, LA	12. Set efficiency standards in the new LDF for new buildings based on CfSH / BREEAM	New build	Phase 1,2	Additional staff time for policy development	5k	Preventing growth in CO <sub>2</sub> emissions - dependent on requirements relative to building regulations
M, LA	13. Work with Thames Water to accelerate the take-up of water metering by consumers - households can legally request that their water company fits a free meter	Water efficiency	Phase 1,2	Publicity programme to make customers aware they can have a meter installed free and then choose a metered or unmetered tariff (whichever is cheaper)	12.5k	Metered water users typically use around 10% less water, incentive to save more through "user pays" pricing structure
H, LSP	14. Carry out study to identify areas with large numbers of cavity walls and work with EST to target insulation initiatives	Adaptation	Phase 1	Staff time plus surveys to identify work programme and funding source	£30k	Significant CO <sub>2</sub> savings from increased energy efficiency
M, LA/ LSP	15. Prepare a bid for part of LBWF to become a Low Carbon Zone	Mitigation	Phase 1	Funding likely to be shared responsibility between LSP and LEP	tbc	CO <sub>2</sub> savings to be realised by focus on existing buildings, including hard-to-treat. Strong emphasis on demonstrating best practice & disseminating lessons learned.

**Table 1 Planning & Housing Actions**

### 1.3 Transportation Actions

Pri orit y	Action	Type of measure	Initiative timescale (Phase 1)	Description of costs	Cost (£)	Climate change outcomes / CO <sub>2</sub> saving
H, LSP, Bus	16. Request green fleet reviews	LSP, Businesses	Phase 1	EST will provide green fleet reviews free of charge to organisations with >50 vehicles	free	Increased efficiency of vehicle fleet, lowering CO <sub>2</sub> emissions
M, LSP	17. Review LSP fleets and implement measures to reduce CO <sub>2</sub> emissions further.	LSP	Phase 1	Free fleet reviews from Energy Savings Trust. Capital funding then potentially needed to implement measures.	-	Overall impact low – eg: Council fleet is not a dominant part of overall LBWF emissions. High impact within Council transport emissions though.
M, LSP	18. Assess the potential for using sustainable biofuels in the LSP fleets.	Alternative fuels, LSP	Phase 1	Approx £10k if external help required across LSP.	10k	As above
M, LA/ LSP/ Bus	19. Continue to encourage car clubs especially those using greener vehicles, explore opportunities for use as pool vehicles	Reducing car emissions	Phase 1, on- going	Estimated staff costs of an additional officer (funding application has been made to TfL to cover a dedicated member of staff covering car clubs therefore this amount would not necessarily have to come out of existing budgets).	30k	Depends on whether it impacts on overall levels of car ownership and use Pay-as-you-drive provides incentive to minimise car use, embedded energy reduced as less vehicles can do more work. Could significantly reduce emissions.
M, LA/ LSP/ Bus	20. Expand LSP Pool vehicles, including bicycles and low-carbon vehicles	Reducing car emissions	Phase 1	The cost of providing bicycles would be substantially lower than the cost of providing cars to cover the same purposes. Low-carbon vehicles tend to be more efficient and therefore have lower running costs than other vehicles.	tbc	For each 5,000 km travelled, bicycles will save one tonne of CO <sub>2</sub> compared to standard cars.
M, LA/ LSP/ Bus	21. Promote better driving techniques and greener cars and vans to individuals in Waltham Forest.	Reducing car emissions	Phase 1, on- going	Additional staff time and publicity per annum	60k	Medium – ‘eco-driving’ can reduce emissions by 5-25%.
H, LA/ LSP	22. Continue to work with TfL to improve public transport network - lobby for infrastructure improvements, promote increased Victoria Line capacity once upgrade work	Public transport	Phase 1, on- going	Additional staff time per annum	80k	Short-term low, long-term high. Initially may even slightly increase CO <sub>2</sub> emissions, but improved public transport could reduce car miles.

Pri orit y	Action	Type of measure	Initiative timescale (Phase 1)	Description of costs	Cost (£)	Climate change outcomes / CO <sub>2</sub> saving
	completed.					
H, LA/ LSP	23. Lobby for more North-South bus routes and increased frequency of existing routes. Make improvements to bus stop accessibility.	Public transport	Phase 1, on-going	£20k additional staff time to coordinate with TfL and lobby, plus capital costs of bus stop access improvements per annum	20k pa	Medium – if more routes implemented.
M, LA/ LSP/ Bus	24. Provide secure cycle parking for estates and households (especially flats). Liaise with Ascham Homes & other RSL's on this.	Walking & cycling	Phase 1, on-going	Annual cost per annum to find locations and install parking for about 60 bikes.	30k	Low – in itself minimal impact, but could greatly increase levels of bike ownership and therefore use.
M, LA/ LSP/ Bus	25. Continue to promote cycling through initiatives such as cycle surgeries for LSP workers and businesses, and 'Dr Bikes' sessions for the general public, free to the user. Encourage workers with longer commutes to do at least part of their journey by bike. Link with training providers to promote cycling to unemployed/newly employed residents.	Walking & Cycling	Phase 1, on-going	Annual costs for programme of 'Dr Bikes' or similar cycle surgery, which cost approximately £10k for 10-15 sessions, which (weather and location dependent) can be expected to reach approximately 40 people each.	50k	Low – in itself minimal impact, but could increase levels of bike use.
M, LA	26. Continue to improve pedestrian environment to promote walking (e.g. via street audits and follow up actions).	Walking & cycling	Phase 1, on-going	Annual cost for street audits, additional staff time to apply for funding to implement recommendations, capital cost of recommendations and maintenance.	50k	Low to medium – depending on improvements and whether modal shift occurs.
M, LA/ LSP/ Bus	27. Continue to encourage travel plans for business (e.g. through making them a requirement of planning applications). Include promotion of bicycle couriers and greener vehicles. Demonstrate the business case for funding a dedicated Business Travel Planner to target the smaller and larger businesses as well as the current 20-250 employee size remit funded by TfL.	Business	Phase 1, on-going	Cost of dedicated staff member per annum plus promotional activities/materials.	40k pa	Medium – travel plans can reduce car use by 0-40%, on average around 18%.  Many businesses in the borough will fall below TfL's 20 employee threshold, a dedicated travel planner who works with smaller businesses as well as larger organisations could have a significant impact in Waltham Forest.

Priority	Action	Type of measure	Initiative timescale (Phase 1)	Description of costs	Cost (£)	Climate change outcomes / CO <sub>2</sub> saving
M, LA/ LSP	28. Encourage the formation of local travel plan groups for groups of smaller businesses in the same area.	Business	Phase 1, on-going	Cost of dedicated workplace travel planning staff member for the borough covered above.	-	Medium – by targeting smaller businesses, could impact on car use and deliveries.
M, LA/ Res	29. Continue to address school transport - parents, teachers and pupils. This could include: <ul style="list-style-type: none"> <li>Family/personal travel plans for families applying to schools where they live more than 1/4 mile away.</li> <li>School Travel Plan implementation of safety/walking/cycling measures</li> <li>Cycle training</li> <li>Pedestrian Skills/Kerbcraft training</li> <li>Promotional (e.g. Cyclicious)</li> </ul>	School	Phase 1, on-going	£50k per annum cycle training, £60k per annum pedestrian skills/ kerbcraft training, £15k per annum promotional.	125k	Low – as car use to take children to school is already relatively low in Waltham Forest (26% compared to 39% national average). Health benefits would be gained from encouraging more active travel for the 35% of children who currently do not walk to school in the borough.
H, LSP	30. End free parking at LSP offices	LSP	Phase 1	Cost neutral. Initial costs to bring in scheme for campaign to gain acceptance & co-ordinate with expansion of CPZs, parking charges to repay this in a short time.	5k	Reduction in driving to work will increase health of staff, lower levels of traffic and consequently reduce CO <sub>2</sub> and air quality emissions from transport
H, LA	31. Identify potential sites for on-street electric vehicle charging points with a view to installing at least 5 by 2011	LA	Phase 1	Cost for a survey of potential sites, cost of installing charging points	44k <sup>1</sup>	Improvement to the electric vehicle infrastructure allowing for an increase in the number of low carbon vehicles (Air Quality also benefits)
M, LSP	32. Lobby Mayor for “Paris” bike scheme hub in WF	Walking & Cycling	Phase 1	Cost to demonstrate business case & lobby for funding	-	By making cycling accessible to those who may otherwise choose to drive for short trips, a pay-as-you-ride cycle scheme could cut CO <sub>2</sub> emissions from transport as well as improving air quality

<sup>1</sup> Cost from a scheme in Camden, [www.camden.gov.uk/ccm/cms-service/download/asset?asset\\_id=902695](http://www.camden.gov.uk/ccm/cms-service/download/asset?asset_id=902695)

Pri orit y	Action	Type of measure	Initiative timescale (Phase 1)	Description of costs	Cost (£)	Climate change outcomes / CO <sub>2</sub> saving
						and health.
H, LA	33. Ensure all cycle lanes are well maintained & work with local cycling groups to identify and address any gaps in the cycle network.	Walking & Cycling	Phase 1	Additional cost for enhanced maintenance programme, cost to install improved cycle facilities	tbc	Better facilities will drive an increase in the number of people cycling, particularly those which improve the safety and security of cycling.
H, LSP	34. Ensure all organisations in the LSP have a workplace travel plan in place within 18 months	LSP	Phase 1		tbc	LSP members demonstrating leadership should help encourage other local organisations to emulate their achievements.
M, LA	35. Undertake a study into the feasibility of introducing permeable street surfaces through the standard highway maintenance regime.	Adaptation	Phase 1	Additional staff time to conduct study	tbc	Reduced run-off rates, lowering the risk of flooding or overwhelming the drainage system.
H, LA/ LSP	36. Ensure that the LDF contains transport sustainability policies relating to: <ul style="list-style-type: none"> <li>• Electric car/van charging points off-street</li> <li>• Car free and car capped housing</li> <li>• Alternative energy initiatives</li> <li>• Contributions to sustainable transport initiatives</li> <li>• Sustainable servicing initiatives</li> </ul>	Reducing car emissions, alternative fuels, public transport	Phase 1, on-going		-	High

**Table 2 Transportation Actions**

## 1.4 Buildings

Pri orit y	Action	Type of measure	Initiative timescale (Phase 1)	Description of costs	Cost (£)	Climate change outcomes / CO <sub>2</sub> saving
M, LA	37. Produce a design guide on alternatives to uPVC for double glazing and options for improving single glazing	Energy efficiency	Phase 1	Additional staff time to produce guidance	5k	Will encourage use of more sustainable materials when replacing windows, improve energy efficiency of existing homes by 5-10%
H, LSP	38. Identify LSP sites where renewable technologies can be installed	Renewable energy	Phase 1	Feasibility study	10k	Replacing fossil energy with zero carbon alternatives such as wind and solar.
M, LSP	39. Use whole life costing when specifying building works, include cost of environmental externalities including flood risk, climate change and biodiversity	Energy efficiency, Water efficiency, Renewable energy, possibly CHP	Phase 1, ongoing	Capital costs may be higher although overall lifetime costs should be lower (assessment of costs should include environmental externalities - cost to customer may be a little higher)	-	Low to medium for LSP/Council emissions, low from borough wide viewpoint.
H, LA	40. Implement LBWF Council motion measures re: insulation and energy efficiency	Adaptation	Phase 1	Staff time plus surveys to identify work programme and funding source	100k	Energy bills reduced
H, LSP	41. Follow LBWF Green Procurement Strategy & roll out to LSP		Phase 1		-	Improved sustainability through green procurement affecting organisations beyond the LSP through influence on suppliers.
H, LSP	42. Identify opportunities for installing rainwater & grey water recycling at LSP sites with a view to a first wave of systems in place within three years	Adaptation	Phase 1	Cost for study & installation of systems	Tbc	Saving water is a key part of adapting to climate change in water-stressed South East England.

Pri orit y	Action	Type of measure	Initiative timescale (Phase 1)	Description of costs	Cost (£)	Climate change outcomes / CO <sub>2</sub> saving
H, LSP	43. Where technically and economically viable, green roofs should be installed as part of LSP building refurbishments	Adaptation	Phase 1, ongoing	Cost for study into viability of a green roof and installation where possible	£200/m <sup>2</sup> of green roof installed	Reducing run-off rates and volume, lowering the risk of flooding, insulating effect on the building and cooling of the local environment.

**Table 3 Building Actions**

## 1.5 Waste & Recycling

Priority	Action	Type of measure	Initiative timescale (Phase 1)	Description of costs	Cost (£)	Climate change outcomes / CO <sub>2</sub> saving
H, LA	44. Work with NLWA to ensure next generation treatment uses BAT & enables local recycling of waste.	Mitigation	Phase 1	Costs shared with NLWA	-	Less methane from landfill sites, energy recovered from wastes
H, LSP, Bus	45. Work with retailers to reduce number & type of plastic bags given away, start an awareness raising campaign with general public. Include a plastic bag amnesty where ten returned bags receive a free sustainably sourced reusable cotton bag.	Waste minimisation	Phase 1		tbc	Resources (e.g. energy & water) currently wasted on making plastic bags will be conserved for other, more useful purposes.
L, LA	46. Recycle widest possible range of materials; commission a study into the feasibility of collecting tetrapak and wider range of plastics	Mitigation	Phase 1	Scope for collecting additional materials partly related to NLWA waste plan, additional costs may be offset by reduced waste disposal costs	25k	Varies by quantity and type of materials recycled
M, LSP	47. Extend general recycling to all offices as soon as practicable	Mitigation	Phase 1	-	15k	
H, LA	48. Install recycling litter bins on streets	Mitigation	Phase 1	Capital expenditure on bins, increased cost of segregated collection. Change in refuse / recycling collection needs to be quantified.	60k	By material collected – particularly important for metals and glass.
M, LA	49. Expand compulsory recycling to all residents including those in flats	Mitigation	Phase 1	Increased collection costs offset by increased recycling rates.	-	Recycling rate will increase with knock on effects on environment
MLA	50. Investigate feasibility of running refuse collection fleet on alternative fuels including biogas from AD (as part of NLWA waste plan) and used cooking oil	Transport	Phase 1, 2	A study of widely available alternative fuels would be cheaper (7-10k) upgraded biomass study would add more expense	15k	Energy from waste offers a much better CO <sub>2</sub> balance than fossil fuels - both for biogas for transport and used cooking oil

Priority	Action	Type of measure	Initiative timescale (Phase 1)	Description of costs	Cost (£)	Climate change outcomes / CO <sub>2</sub> saving
	biodiesel					biodiesel.
M, LA	51. Undertake a comprehensive review of the Council's commercial waste collection services	Mitigation	Phase 1, 2	Around 15k for the review and a further 10k to implement recommendations	15k	
H, LSP	52. Create a "Minimise waste" awareness programme	Mitigation	Phase 1, ongoing	Low/negative. Minimising waste saves money on things which are not used.	20k	

**Table 4 Waste & Recycling Actions**

## 1.6 Energy & Procurement

Priority	Action	Type of measure	Initiative timescale (Phase 1)	Description of costs	Cost (£)	Climate change outcomes / CO <sub>2</sub> saving
M, LA	53. Produce a green procurement guide	Cross-cutting	Phase 1		-	CO <sub>2</sub> savings will be small for most individual purchases; main effect through influencing suppliers and a small number of large contracts other environmental issues will also be tackled
M, LA	54. Lobby central government for reform of policy support for small renewables	Renewable energy	Phase 1	Additional staff time	5k	Potentially significant if reform drives rapid uptake of renewable energy technologies.
H, LA/LSP	55. Investigate options for an ESCo to deliver carbon reductions and the CHP network.	Energy	Phase 1, 2	Potentially financially self sufficient after being set-up.	50k	Important to the success of a CHP district heat network - saving over 2.5 ktpa per MWe installed
H, LSP	56. Enhance energy use monitoring and reporting including comparisons with historical usage patterns	Energy efficiency	Phase 1, ongoing	Additional staff time for monitoring, suggest 1 day per month	6k	Energy use in buildings reduced by 5-10%
H, LA/LSP	57. Identify potential funding sources for projects e.g. grants for renewable installations, free business support from Carbon Trust etc.		Phase 1, ongoing	Additional staff time to investigate funding opportunities.	30k	Funding for a range of CC activity.
M, LSP	58. Ensure as much electricity as possible is purchased on good green tariffs	Renewable energy	Phase 1, ongoing	Modest premium over 'brown tariffs'	90k pa	While electricity purchased from green tariffs can be reported as contributing no emissions, this is rather misleading. Any savings will be linked to driving changes in upstream supply of electricity
H,	59. Investigate the feasibility for a climate change fund which ring	Renewables, CHP, Energy	Phase 1,	£40k for study	40k	Large potential CO <sub>2</sub> savings; scheme would provide dynamic incentive to

Pri orit y	Action	Type of measure	Initiative timescale (Phase 1)	Description of costs	Cost (£)	Climate change outcomes / CO <sub>2</sub> saving
LSP	fences funds for mitigation and adaptation work with financial savings being recycled to fund further measures.	efficiency, Adaptation (Transport)	ongoing			continue making savings rather than static targets approach
H, LA	60. Create post and ensure resources to advise developers, businesses and residents on energy efficiency and installation of renewable sustainable technologies	Renewable energy	Phase 1	£40k for one full time staff member	40k pa	Large potential CO <sub>2</sub> savings; scheme would provide dynamic incentive to continue making savings rather than static targets approach
M, LA	61. Adopt on-line system to assess planning application energy statements	Operations	Phase 1, ongoing	£15k to set up, £1k per year for licensing	15k set up £1k pa licence fee	Frees up resources for re-allocation onto climate change work
H, LA/L SP	62. Implement the recommendations of the LBWF energy strategy and roll out to the rest of the LSP	Energy	Start phase 1, see Energy strategy for more details	Energy strategy indicates level of additional resources required for each target; costs should be assessed for each measure in order of priority		CO <sub>2</sub> savings in line with reductions in energy use and/or CO <sub>2</sub> intensity of primary energy

**Table 5 Energy & Procurement Actions**

## 1.7 Managing Natural Habitat Actions

Priority	Action	Type of measure	Initiative timescale (Phase 1)	Description of costs	Cost (£)	Climate change outcomes / CO <sub>2</sub> saving
L, LA	63. Expand the 'Adopt a tree' scheme	Adaptation	Phase 1	Could provide an income stream - currently charging £150 per tree "adopted"	-	Benefits from urban heat island effect, benefits of greenery, protection of habitat/biodiversity
M, LSP	64. Develop local food growing/selling schemes and community gardens	Adaptation	Phase 1, on-going	-	20k	Reduction in freight transport of produce and road travel for food shopping.
M, LA	65. Develop a general good planting guide including adaptable native species	Adaptation	Phase 1	Additional staff time for policy development	20k	
L, LA	66. Create design guide for permeable conditions for street trees allowing good root growth	Adaptation	Phase 1	Additional staff time to develop policy and identify suitable locations	10k	Reduced risks of subsidence and flooding
M, LA	67. Produce design guides on alternatives to hard standing for front gardens and	Adaptation	Phase 1	Additional staff time to develop guidance	10k	Reduced flood risk, vegetation better suited to future conditions
M, LA	68. Use the LDF to promote the creation of living fences, green walls & roofs	Adaptation	Phase 1	Additional staff time for policy development, feasibility study identifying areas of the borough where there is greatest potential.	Tbc	Cooler urban environment, reduction in flood risks. If fruit trees are employed, a local supply of food
M, LA/LSP	69. Work with Lea Valley partners on a co-ordinated planting strategy	Adaptation	Phase 1	Additional staff tie to liaise with partners & develop strategy	tbc	Creation of an important strategic soft flood defence in a sensitive part of the borough. Cool open space to counter heat stress during summer extremes.
M,	70. Update Biodiversity plans	Adaptation	Phase 1	Additional staff time	10k	Protects and enhances flora and fauna

Priority	Action	Type of measure	Initiative timescale (Phase 1)	Description of costs	Cost (£)	Climate change outcomes / CO <sub>2</sub> saving
LA						

**Table 6 Managing Natural Habitat Actions**

## 1.8 Communications & outreach

Pri orit y	Action	Type of measure	Initiative timescale (Phase 1)	Description of costs	Cost (£)	Climate change outcomes / CO <sub>2</sub> saving
M, LA	71. Maintain and expand the climate change pages of the LBWF website	Communications	Phase 1, on-going	Additional staff time to create and upload material	3k pa	
H, LA/L SP/ Bus	72. Embed sustainability into staff training	All	Phase 1	Cost to adapt existing induction packs, training events for existing staff	-	High, all Council and LSP staff could become climate change champions at work and at home.
H, LA	73. Train staff who deal with businesses to provide information on climate change	Mitigation, adaptation	Phase 1, on-going	Cost of staff training	30k	Significant reductions from business sector
L, LA/L SP	74. Investigate possibility of a Transition town initiative	Mitigation	Phase 1	Grass roots initiative, costs will be modest	10k	Small unless initiative can gain traction with mainstream society.
H, LSP /Res	75. Develop networks of champions	All	Phase 1	Cost to identify and train champions	50k	Moderate, champions should influence large networks of people at home and at work.
M, LA	76. Encourage schools to join the EcoSchools programme	Mitigation	Phase 1	Staff time costs	5k pa	Modest, savings will vary depending on school's existing actions
L, Res	77. Look into starting a Carbon Reduction Action Group (CRAG)	Mitigation	Phase 1	Low, large amount of shared resources available online, support from existing CRAGs	-	High amongst participants, overall impact dependent on number of participants.
H,	78. Look into partnering with utility	Mitigation,	Phase 1,	Low for LSP, could contribute to statutory	10k to set-up	If advice provided with devices,

Pri orit y	Action	Type of measure	Initiative timescale (Phase 1)	Description of costs	Cost (£)	Climate change outcomes / CO <sub>2</sub> saving
LA	companies to provide free/subsidised energy/water saving devices	adaptation	ongoing	efficiency requirements on companies	programme, 5k per year to administer	significant reductions in energy use.
H, LA/L SP	79. Work with faith communities	All	Phase 1, ongoing	Cost to develop and run scheme, effect likely to result in very low cost/tCO <sub>2</sub>	50k	High, if faith communities can be encouraged that action on climate change is a matter of religious importance savings could be enormous.
M, LSP	80. Develop climate change work through local voluntary sector such as HEET and Hornbeam Centre	Mitigation, adaptation, outreach	Phase 1, ongoing	Cost to develop and run programmes	20k pa	Dependent on scope of projects, potentially significant
H, LSP /bus	81. Join Carbon Trust Carbon Management programme and roll out to LSP	Mitigation	Phase 1, ongoing	Free	-	High, significant levels of support provided by the Carbon Trust funded by central government.
M, LA	82. Develop projects for young people through existing fora	All	Phase 1, ongoing	Engagement process and development of resulting ideas into full programmes	20k pa	High, over the long term young people will become the most influential groups in society. In the short term influence on parents can drive environmental action by them.
H, LA	83. Skills transfer projects from segments of community which have knowledge of low carbon living to those that don't	Mitigation	Phase 1, ongoing	Identifying interested parties, cost of administering the schemes.	15k pa	Moderate, behavioural change by less frugal sectors of community will occur but level of savings dependent on scale of projects.
M, LA/L SP	84. Identify events where outreach programmes by organisations (e.g. the EST, Thames Water) could attend	Outreach	Phase 1, ongoing	Low, need to find small amount of additional space at events	3k pa	High, costs largely borne by external organisations.

Pri orit y	Action	Type of measure	Initiative timescale (Phase 1)	Description of costs	Cost (£)	Climate change outcomes / CO <sub>2</sub> saving
L, LA	85. Run a demonstration project growing food from different cultures, through local allotments and Council sites	Mitigation, outreach, community cohesion	Phase 1, 2	Additional staff costs to organise	5k pa	Modest, may reduce imports of exotic foods which could be grown in the UK – particularly important if usually air-freighted.
H, LA	86. Signpost existing grants and information available from other sources, including a database of schemes	All	Phase1, ongoing	Regular research about grants. Update database and website info.	10k pa	Potentially high - linking in to recognised brands such as Envirowise, Green Homes service and the EST provides schemes with credibility
M, LSP	87. Develop an initiative to help residents plan food shopping to reduce the amount of food which is wasted and encourage a move toward fresh food which generally comes in less packaging with lower embodied energy. Put WRAP info on website pages		Phase1, ongoing	Assumes one additional member of staff and a high profile scheme.	20k for a pilot	Energy savings will be at earlier stages of life cycle - outside Waltham Forest.
M, LA/L SP	88. Assist third sector organisations with securing funding for pilot projects	Outreach	Phase1, ongoing	Additional staff member to work with organisations	40k pa	Enhancing sustainability of third sector and assisting projects to improve sustainability of others.
	89. Create two new positions for outreach support staff. One to cover Education, Green Champions & domestic advice & outreach. The second for developer, business & energy efficiency works advice	Outreach	Phase 1, ongoing	Two new staff members to cover outreach in the individual/domestic and business/commercial and industrial sectors respectively.	90k pa	
L LSP	90. Promote GLA adaptation report "Your Home in a changing climate"	Outreach	Phase1, ongoing		£2k pa	Moderate, behavioural change by less frugal sectors of community will occur but

Priority	Action	Type of measure	Initiative timescale (Phase 1)	Description of costs	Cost (£)	Climate change outcomes / CO <sub>2</sub> saving
						level of savings dependent on scale of projects.

**Table 7 Communication & Outreach Actions**

## 1 Appendix 2: Phase 2 Action Plan Post 2012

This appendix is laid out in the same way as Appendix 1. However in the tables below, actions will be costed and revised as part of the triennial CCS review process in order to reflect changes in market conditions, policy support and technological progress.

### 1.1 Planning & Housing Actions

Pri orit y	Action	Type of measure	Indicative timescale (Ph 2 – 4)	Description	Climate change outcomes / CO <sub>2</sub> saving
H, LA	1.Require cost effective improvements to existing parts of buildings when extensions are built - including adaptation measures	Energy efficiency, Water efficiency, Adaptation	Ongoing	Additional staff time for policy development, cost of measures paid by the able to pay market (assumes measures are cost effective and a small fraction of the cost of an extension)	CO <sub>2</sub> savings dependent on rates of extensions and whether requirement is for no net increase in emissions from building(s) or for reduction in overall building emissions
H, LA	2.Ensure building regulations are followed and Section 106 commitments are respected	New build	Ongoing	Additional staff time to undertake work	
L, LA	3.Match funding of suitable renewables eligible for LCBP grants (i.e. not small scale biomass, GSHP and small hydro on a case by case basis)	Renewable energy	Ongoing	Fund awarding interest free loans (or grants) to organisations and residents to top up LCBP awards. See <a href="http://www.lowcarbonbuildings.org.uk">www.lowcarbonbuildings.org.uk</a> for details of grant awards	CO <sub>2</sub> savings: Domestic PV: 455kg/yr per system; Small Wind: 600kg/system/year; solar thermal 330kg/system/year;
M, LA	4.The LDF currently under development should make explicit a requirement for developments to be resilient to the effects of climate change over the design life of buildings	Adaptation	Ongoing	Additional staff time for policy development	Buildings which will be fit for purpose in future climactic conditions. Should also result in CO <sub>2</sub> and water savings
M, LSP	5.O-regen to disseminate learning from SCORE centre to developers and other boroughs.	New build	Ongoing	Produce a case study to be posted on website which can be shown to developers / LSP partners	Best practice new developments could save 20% more CO <sub>2</sub> than typical new builds and 50% of the CO <sub>2</sub> emissions of typical existing buildings
H, LA	6.Require sustainable travel plans for new developments including car-free developments wherever possible	Transport	Ongoing	Additional staff time for policy development, work with developers to understand requirements of travel plans	-

Pri orit y	Action	Type of measure	Indicative timescale (Ph 2 – 4)	Description	Climate change outcomes / CO <sub>2</sub> saving
M, LA	7.Set efficiency standards in the forthcoming LDF for new buildings based on CfSH / BREEAM	New build	Ongoing	Additional staff time for policy development	Preventing growth in CO <sub>2</sub> emissions - dependent on requirements relative to building regulations
H, LA/L SP	8.Develop a district heating network	CHP	Phase 2, ongoing	High. Heat pipes cost around £1M per km plus costs of CHP plant and user connections.	With a well established district heating network CHP could save over 400 ktpa by 2050
	9.				
M, LA	10.Work with Thames Water to accelerate the take-up of water metering by consumers - households can legally request that their water company fits a free meter	Water efficiency	Phase 2	£25k publicity programme to make customers aware they can have a meter installed free and then choose a metered or unmetered tariff (whichever is cheaper)	Metered water users typically use around 10% less water, incentive to save more through "user pays" pricing structure

**Table 1 Planning & Housing Actions**

## 1.2 Transportation Actions

Pri orit y	Action	Type of measure	Indicative timescale (Ph 2 – 4)	Description	Climate change outcomes / CO <sub>2</sub> saving
M, LA/ LSP/ Bus	11.Continue to encourage car clubs especially those using greener vehicles	Reducing car emissions	Ongoing	Estimated staff costs of an additional officer (funding application has been made to TfL to cover a dedicated member of staff covering car clubs therefore this amount would not necessarily have to come out of existing budgets).	Depends on whether it impacts on overall levels of car ownership and use – could significantly reduce emissions.
M, LA/ LSP/ Bus	12.Carry out a study into the use of car clubs within LBWF as pool cars and encourage other LSP organisations to do likewise.	Reducing car emissions	Phase 2	Relative costs and benefits compared to owning pool vehicles, including the carbon efficiency of vehicles needs to be studied carefully before decisions can be made	Pay-as-you-drive provides incentive to minimise car use, embedded energy reduced as less vehicles can do more work.
M, LA/ LSP/ Bus	13.Promote better driving techniques and greener cars and vans to individuals in Waltham Forest.	Reducing car emissions	Ongoing	Additional staff time and publicity	Medium – ‘eco-driving’ can reduce emissions by 5-25%.
H, LA/ LSP	14.Continue to work with TfL to improve public transport network - lobby for infrastructure improvements, promote increased Victoria Line capacity once upgrade work completed.	Public transport	Ongoing	Additional staff time per annum	Short-term low, long-term high. Initially may even slightly increase CO <sub>2</sub> emissions, but improved public transport could reduce car miles.
H, LA/ LSP	15.Lobby for more North-South bus routes and increased frequency of existing routes. Make improvements to bus stop accessibility.	Public transport	Ongoing	£20k additional staff time to coordinate with TfL and lobby, plus capital costs of bus stop access improvements per annum	Medium – if more routes implemented.
M, LA/ LSP/ Bus	16.Provide secure cycle parking for estates and households (especially flats). Liaise with Ascham Homes & other RSL's on this.	Walking & cycling	Ongoing	Annual cost per annum to find locations and install parking for about 60 bikes.	Low – in itself minimal impact, but could greatly increase levels of bike ownership and therefore use.

Priority	Action	Type of measure	Indicative timescale (Ph 2 – 4)	Description	Climate change outcomes / CO <sub>2</sub> saving
M, LA/ LSP/ Bus	17. Continue to promote cycling through initiatives such as cycle surgeries for LSP workers and businesses, and 'Dr Bikes' sessions for the general public, free to the user. Encourage workers with longer commutes to do at least part of their journey by bike. Link with training providers to promote cycling to unemployed/ newly employed residents.	Walking & Cycling	Ongoing	Annual costs for programme of 'Dr Bikes' or similar cycle surgery, which cost approximately £10k for 10-15 sessions, which (weather and location dependent) can be expected to reach approximately 40 people each.	Low – in itself minimal impact, but could increase levels of bike use.
M, LA	18. Continue to improve pedestrian environment to promote walking (e.g. via street audits and follow up actions).	Walking & cycling	Ongoing	Annual cost for street audits, additional staff time to apply for funding to implement recommendations, capital cost of recommendations and maintenance.	Low to medium – depending on improvements and whether modal shift occurs.
M, LA/ LSP/ Bus	19. Continue to encourage travel plans for business (e.g. through making them a requirement of planning applications). Include promotion of bicycle couriers and greener vehicles. Consider funding a dedicated Business Travel Planner to target the smaller and larger businesses as well as the current 20-250 employee size remit funded by TfL.	Business	Ongoing	Cost of dedicated staff member per annum plus promotional activities/materials.	Medium – travel plans can reduce car use by 0-40%, on average around 18%.
M, LA/ LSP	20. Encourage the formation of local travel plan groups for groups of smaller businesses in the same area, e.g. town centres or trading estates.	Business	On-going	Cost of dedicated workplace travel planning staff member for the borough covered above.	Medium – by targeting smaller businesses, could impact on car use and deliveries.

Priority	Action	Type of measure	Indicative timescale (Ph 2 – 4)	Description	Climate change outcomes / CO <sub>2</sub> saving
H, LA/ LSP/ Bus	21.Reduce impact of freight in Waltham Forest - through freight quality partnerships (FQP), distribution hubs and improved vehicles and driving techniques and encouraging local sourcing. Investigate possible links with haulage companies using the river to transport Olympics-related freight (may be useful to liaise with British Waterways on this).	LSP, business	Ongoing	£60k per annum additional staff costs to develop FQP. Distribution hub potentially not within Waltham Forest due to land prices but purchase and set up likely to be well in excess of £750k	Medium - FQP and promotion. Improving driving techniques can reduce fuel use by 5-15%.  High – distribution hub. A centre in Bermondsey cut CO <sub>2</sub> emissions by 73% in six months.
H, LA	22.Expand emissions based parking permits from CPZ's with annual review to ensure that the policy is delivering a shift to smaller engines/ less CO <sub>2</sub> to Council offices, CPZs and investigate extending more broadly. Abolish free parking at Council offices and encourage others to do the same, provided CPZ's in place. Increase CPZs.	Reducing car emissions	Ongoing	£5k set up costs then £10k per annum (assuming needs 25% of time of an additional officer to administrate).	Encouraging more efficient vehicles could significantly reduce emissions.
M, LA/L SP	23.Target transport hubs for crime reducing measures.	Public transport	Ongoing	Station improvements, cost per annum	Depends on whether it impacts on overall levels of public transport use – could significantly reduce emissions.
M, LA	24.Continue to improve cycling infrastructure - routes, signage, and storage.	Walking & cycling	Ongoing	Capital funding per annum for measures, will reduce as more comprehensive provision in place but some maintenance cost will remain.	Medium – cycling has the potential to replace a considerable number of car journeys.
L, LA	25.Increase the number of 'home zones'.	LSP	Ongoing	Additional officer costs per annum	Depends on outcome of investigation.

Pri orit y	Action	Type of measure	Indicative timescale (Ph 2 – 4)	Description	Climate change outcomes / CO <sub>2</sub> saving
M, LA/ LSP/ Bus/ Res	26.Reduce need for travel in Waltham Forest through measures such as promoting home deliveries, home working and individual travel plans.	Individuals	Ongoing	Additional staff time per annum, costs of promotion to residents	Low/medium - Nationally home deliveries estimated to cut car mileage for shopping by 4%. Individual travel plans not likely to be practical for large proportions of the population (although successful instances may have beneficial knock-on effect). Home working can reduce commuter car trips by 3-12%.
M, LA/ Res	27.Continue to address school transport - parents, teachers and pupils. This could include: <ul style="list-style-type: none"> <li>Family/personal travel plans for families applying to schools where they live more than 1/4 mile away.</li> <li>School Travel Plan implementation of safety/walking/cycling measures</li> <li>Cycle training</li> <li>Pedestrian Skills/Kerbcraft training</li> <li>Promotional (e.g. Cyclicious)</li> </ul>	School	On-going	£50k per annum cycle training, £60k per annum pedestrian skills/ kerbcraft training, £15k per annum promotional	Low – as car use to take children to school is already relatively low in Waltham Forest (26% compared to 39% national average). Health benefits would be gained from encouraging more active travel for the 35% of children who currently do not walk to school in the borough.
L, LA/ LSP	28.Provide charging points for electric vehicles and encourage petrol stations to stock alternative fuels (biofuels, LPG etc).	Alternative fuels	Ongoing	Installing charging points, plus £20k, 50% of an additional officer time per annum	Depends on demand, electric vehicles also better in terms of air quality impacts.
L, LA	29.Investigate alternative funding to increase LSP pool vehicles	Transport	Ongoing	Cost per annum (capital, maintenance, staff, administration)	Potentially very high given car use in the borough.
H, LA	30. Increase differentiation of CPZ charges against CO2 emissions.	Low Carbon vehicles, Alternative fuels	Phase 2	Additional staff time to calculate levels of new bands. Changes should be revenue neutral to public improve acceptance	Greater differentiation between vehicles should lead to more people switching to lower carbon vehicles when the opportunity arises.

**Table 2 Transportation Actions**

### 1.3 Buildings Actions

Pri orit y	Action	Type of measure	Indicative timescale (Ph 2 – 4)	Description	Climate change outcomes / CO <sub>2</sub> saving
H, LA	30. Build on work of existing energy efficiency programmes to cover a wider remit including CC adaptation. Target measures in areas where they will be most effective	Energy efficiency, Adaptation	Ongoing	Cost for modifying the schemes to deliver other objectives. High costs for door-to-door promotion	Significant - Improved thermal efficiency could save up to 50 ktpa, behavioural change will be a key action for meeting CO <sub>2</sub> targets
H, LSP	31. Refurbish buildings to high sustainability standards. Consider future climate when drawing up refurbishment specifications. Apply whole-life costing, including environmental externalities. Demonstrate leadership and disseminate best practice	Energy efficiency, Water efficiency, Renewable energy, possibly CHP	Ongoing	High. Funding will not be exclusively internal e.g. £250M for Building Schools for the Future (BSF)	High impact on emissions from LSP/Council stock, low impact borough wide.
M, LSP	32. Feasibility Study for installing rainwater harvesting or grey water recycling at LSP sites	Water saving	Ongoing	The Rainwater Harvesting Association estimate a commercial system can pay back within five years - whole life costing will show a saving	Significant water savings (potentially over 50%)
L, LSP	33. Undertake a feasibility study looking at the options for green roofs at LSP sites	Adaptation	Ongoing	Marginal cost compared to conventional asphalt surface for flat roofs	Contributes to biodiversity and slows rainwater runoff reducing flood risk
H, LSP	34. Build on LBWF Council motion measures re: insulation and energy efficiency and expand to rest of LSP	Adaptation	Ongoing	Staff time plus surveys to identify work programme and funding source	Good practice rolled out

**Table 3 Buildings Actions**

## 1.4 Waste & Recycling Actions

Pri orit y	Action	Type of measure	Indicative timescale (Ph 2 – 4)	Description	Climate change outcomes / CO <sub>2</sub> saving
MLA	35. Investigate feasibility of running refuse collection fleet on alternative fuels including biogas from AD (as part of NLWA waste procurement strategy) and used cooking oil biodiesel	Transport	Ongoing	A study of widely available alternative fuels would be cheaper (7-10k) upgraded biomass study would add more expense	Energy from waste offers a much better CO <sub>2</sub> balance than fossil fuels - both for biogas for transport and used cooking oil biodiesel.
M, LA	36. Undertake a comprehensive review of the Council's commercial waste collection services	Mitigation	Ongoing	Around 15k for the review and a further 10k to implement recommendations	
H, LSP	37. Create a "Minimise waste" awareness programme	Mitigation	Ongoing	Low/negative. Minimising waste saves money being spent on things which are not used.	

**Table 4 Waste & Recycling Actions**

## 1.5 Energy & Procurement Actions

Pri orit y	Action	Type of measure	Indicative timescale (Ph 2 – 4)	Description	Climate change outcomes / CO <sub>2</sub> saving
H, LA/ LSP	38. Investigate options for an ESCo to deliver carbon reductions and the CHP network.	Energy	Ongoing	Potentially financially self sufficient after being set-up.	Important to the success of a CHP district heat network - saving over 2.5 ktpa per MWe installed
H, LSP	39. Enhance energy use monitoring and reporting including comparisons with historical usage patterns	Energy efficiency	Ongoing	Additional staff time for monitoring, suggest 1 day per month	Energy use in buildings reduced by 5-10%
H, LA/ LSP	40. Identify potential funding sources for projects e.g. grants for renewable installations, free business support from Carbon Trust etc.		Ongoing	Additional staff time to investigate funding opportunities.	Funding for a range of CC activity.
M, LSP	41. Ensure as much electricity as possible is purchased is on good green tariffs	Renewable energy	Ongoing	Modest premium over 'brown tariffs'	While electricity purchased from green tariffs can be reported as contributing no emissions, this is rather misleading. Any savings will be linked to driving changes in upstream supply of electricity
M, LA	42. Develop a framework outlining the requirements biomass installations in the borough must satisfy - particularly on sustainability and air quality	Renewable energy	Phase 2, must be completed well ahead of any large scale development of biomass infrastructure in LBWF	Assuming work can be done in-house based on existing data on impacts of biomass fuels	CO <sub>2</sub> impact moderate to high depending on scale, NO <sub>x</sub> impacts more significant - primary driver for restraints on biomass.

Priority	Action	Type of measure	Indicative timescale (Ph 2 – 4)	Description	Climate change outcomes / CO <sub>2</sub> saving
H, LA/L SP	43. Implement the recommendations of the LBWF energy strategy and roll out to the rest of the LSP	Energy	Start phase 1, see Energy strategy for more details	Energy strategy indicates level of additional resources required for each target; costs should be assessed for each measure in order of priority	CO <sub>2</sub> savings in line with reductions in energy use and/or CO <sub>2</sub> intensity of primary energy

**Table 5 Energy & Procurement Actions**

## 1.6 Managing Natural Habitat Actions

Priority	Action	Type of measure	Indicative timescale (Ph 2 – 4)	Description	Climate change outcomes / CO <sub>2</sub> saving
M, LA	44. Protect green recreational space near water	Adaptation	Phase 2	Cost of maintaining existing spaces, restoring any derelict areas.	
M, LA/ Bus	45. Work on borough's blue corridors	Adaptation	Phase 2, 3	High, some borne by private sector, Council will need to bid for external funding.	Cool recreational space during times of overheating, opportunities to create new sustainable transport links (walking, cycling, river)
M, LA	46. Install soft flood defences where emergency planning identifies a risk	Adaptation	Phase 2, ongoing	Reduced economic damage will provide payback within not more than two flood events.	Lower the impact of flooding, milder flood events may be prevented altogether
M, LSP	47. Introduce a planning requirement to maintain or improve surface run-off characteristics when extending properties, work to reverse the conversion of front gardens to off street parking.	Adaptation	Phase 2, ongoing	Green roofs cost £100 per m <sup>2</sup> over the cost of a conventional roof - planning changes developed at a cost of up to £5k. £10k for a pilot scheme and design guide for sustainable, useful front gardens	Reduces storm water runoff rates by allowing water to soak into ground. Green roofs offer biodiversity benefits
L, LA/L SP/Bus	48. Wider use of vegetation in LSP planning schemes	Adaptation	Phase 2, ongoing	Beneficial over lifetime	Reduced flood risk and urban heat island effect.

**Table 6 Managing Natural Habitat Actions**

## 1.7 Communications & Outreach Actions

Pri orit y	Action	Type of measure	Indicative timescale (Ph 2 – 4)	Description	Climate change outcomes / CO <sub>2</sub> saving
M, LA	49.Maintain and expand the climate change pages of the LBWF website	Communications	Ongoing	Additional staff time to create and upload material	
H, LA	50.Train staff who deal with businesses to provide information on climate change	Mitigation, adaptation	On-going	Cost of staff training	Significant reductions from business sector
H, LA	51.Look into partnering with utility companies to provide free/subsidised energy/water saving devices	Mitigation, adaptation	Ongoing	Low for LSP, could contribute to statutory efficiency requirements on companies	If advice provided with devices, significant reductions in energy use.
H, LA/ LSP	52.Work with faith communities	All	Ongoing	Cost to develop and run scheme, effect likely to result in very low cost/tCO <sub>2</sub>	High, if faith communities can be encouraged that action on climate change is a matter of religious importance savings could be enormous.
M, LSP	53.Develop climate change work through local voluntary sector such as HEET and Hornbeam Centre	Mitigation, adaptation, outreach	Ongoing	Cost to develop and run programmes	Dependent on scope of projects, potentially significant
H, LSP /bus	54. Roll out joining Carbon Trust Carbon Management programme to remaining LSP partners	Mitigation	Phase 2	Free	High, significant levels of support provided by the Carbon Trust funded by central government.
M, LA	55.Work with youth to develop projects for young people through existing fora	All	Ongoing	Engagement process and development of resulting ideas into full programmes	High, over the long term young people will become the most influential groups in society. In the short term influence on parents can drive environmental action by them.

Priority	Action	Type of measure	Indicative timescale (Ph 2 – 4)	Description	Climate change outcomes / CO <sub>2</sub> saving
H, LA	56. Skills transfer projects from segments of community which have knowledge of low carbon living to those that don't	Mitigation	Ongoing	Identifying interested parties, cost of administering the schemes.	Moderate, behavioural change by less frugal sectors of community will occur but level of savings dependent on scale of projects.
M, LA/LSP	57. Identify events where outreach programmes by organisations (e.g. the EST, Thames Water) could attend	Outreach	Ongoing	Low, need to find small amount of additional space at events	High, costs largely borne by external organisations.
L, LA	58. Run a demonstration project growing food from different cultures, through local allotments and Council sites	Mitigation, outreach, community cohesion	Phase 2	Additional staff costs to organise	Modest, may reduce imports of exotic foods which could be grown in the UK – particularly important if usually air freighted.
H, LA	59. Signpost existing grants and information available from other sources, including a database of schemes	All	Ongoing	Regular research about grants. Update database and website info.	Potentially high - linking in to recognised brands such as Envirowise, Green Homes service and the EST provides schemes with credibility
M, LSP	60. Develop an initiative to help residents plan food shopping to reduce the amount of food which is wasted and encourage a move toward fresh food which generally comes in less packaging with lower embodied energy. Put WRAP info on website pages		Ongoing	Assumes one additional member of staff and a high profile scheme. 60k for a full programme	Energy savings will be at earlier stages of life cycle - outside Waltham Forest.
M, LA/LSP	61. Assist third sector organisations with securing funding for pilot projects	Outreach	Ongoing	Additional staff member to work with organisations	Enhancing sustainability of third sector and assisting projects to improve sustainability of others.

Pri orit y	Action	Type of measure	Indicative timescale (Ph 2 – 4)	Description	Climate change outcomes / CO <sub>2</sub> saving
H, LA	62.Create two new positions for outreach support staff. One to cover Education, Green Champions & domestic advice & outreach. The second for developer, business & energy efficiency works advice	Outreach	Phase 1, ongoing	Two new staff members to cover outreach in the individual/domestic and business/commercial and industrial sectors respectively.	90k pa
L LSP	63.Promote GLA adaptation report “Your Home in a changing climate”	Outreach	Ongoing		Moderate, behavioural change by less frugal sectors of community will occur but level of savings dependent on scale of projects.
H, LSP /Bus	64.Develop internships and apprenticeships in sustainable trades (e.g. renewables installers)	Mitigation	Phase 2	Cost to provide training	High, the number of accredited installers of low carbon technologies is a key bottleneck.
M, LA	65.Produce a ‘Sustainable Food Strategy’	Mitigation, adaptation	Phase 2	Strategy development	Could lead to changes in food supply, knock on benefit on reduced freight needs.

**Table 7 Communication & Outreach Actions**

## Appendix 3: Other Supporting Information

### 3.1 Equalities summary table

Theme	Proposed action	Equalities Recommendation
Transport	The promotion of school or work <b>travel plans</b> .	Reflect the need for safety of travel to be prioritised and discourage travel alone by vulnerable people. Include equality groups in travel planning process to ensure personal circumstances and capabilities are reflected.
Transport	Lobby for promotion of and investment in borough <b>public transport</b> .	Ensure reference is made to need for investment in making public transport accessible for all residents in the borough to overcome physical and language barriers. Promote the need for safety improvements. Prioritise use of public transport during the daytime and times when journeys are easily and safely undertaken by a public mode. Recognise the need to tackle historically held perceptions and highlight improvements.
Transport	<b>Reducing emissions</b>	Develop an incentive programme, rather than penalties. Emphasise the need for cycling facilities, close to public transport links and the adequate provision of disabled bays where restricted parking is used.
Transport	Promoting <b>walking and cycling</b> through the development of specific strategies.	Maintain the need for careful safety considerations. Suggest community cycle training programmes to integrate age and cultural groups.
Energy	Promoting <b>renewable energy</b>	Assign responsibility to the Council for raising awareness of alternative energy and providing guidance and information in accessible formats. Include a policy for publicising financial help (subsidies / grants / loans) to extend access to domestic renewable energy systems.
Energy	Promoting <b>low carbon lifestyles</b>	Suggest learning from older generations and harnessing the borough's cultural strengths.

Waste	<b>Increasing recycling</b>	Assign responsibility to the Council for making information about recycling available in pictorial images. Promote assisted collections. Promote recycling through schools for the benefit of young people and so they can educate their families at home.
Water	<b>Water recycling</b> (Grey/rainwater)	Stress the need for awareness raising to dispel any myths.
Bio-diversity	Management of <b>green space</b>	Suggest the inclusion of young people in the management and improvement of parks and recreational land to ensure it meets their needs and that they learn to care for their local environment. Encourage community allotment schemes.

**Table 1 Summary of Equalities issues**

## 3.2 Appendix: Biomass

**Biomass CHP** There has been much discussion of the air quality impacts of biomass. Waltham Forest LSP is aware of the potential air quality implications of introducing biomass on a large scale. The majority of air pollutants generated by any fuel are generated when it is burnt. Levels of some pollutants including NO<sub>x</sub> and SO<sub>x</sub> are mostly to do with the nature of the fuel while others, including particulates and carbon monoxide, depend on the conditions in which the fuel is burned.

While the effects of the scenario as a whole needs to be considered when looking at air quality impacts, biomass is a particular concern due to its potential impact on local air pollutants. As with any combustion, the types of fuel and processes give a wide range of potential impacts with small-scale combustion of wood being the most harmful form of biomass from an air quality perspective and the 'advanced conversion technologies' (anaerobic digestion, gasification and pyrolysis) being the cleanest.

Analysis of the impact of various technology options for biomass energy production in Waltham Forest indicates a very wide range of potential impacts. Assuming typical performance of small scale conventional wood burning boilers, emissions of NO<sub>x</sub> are around 0.54 kg/MWh which is relatively high compared to the natural gas figure of 0.23 kg/MWh. Installing cleanup technology to the level required to meet IPPC limits (this is a legal requirement for plants of over 50MW) lowers the level of NO<sub>x</sub> per MWh to 0.26 kg which is of negligible difference to the figure for natural gas. The most comprehensive combination of cleanup technology would be the use of low NO<sub>x</sub> burner technology coupled with selective catalytic reduction (SCR) as a secondary technology (this breaks NO<sub>x</sub> back down into nitrogen and oxygen). This can reduce NO<sub>x</sub> emissions by up to 95% compared to the baseline level which would make biomass significantly cleaner than conventional gas plant (although clearly if this technology is also applied to natural gas, then that would also emit less NO<sub>x</sub> as a consequence).

Advanced conversion technologies such as anaerobic digestion and gasification convert biomass into gas which can be used to generate energy. Integrated gasification combined cycle (IGCC) biomass plant has a net NO<sub>x</sub> benefit relative to conventional gas. Anaerobic digestion life cycle analysis has shown mixed results dependent on the nature of the biomass inputs. According to some studies it may have a net benefit similar to gasification; others suggest that it could be almost twice as harmful as conventional wood stoves. It should be noted that this is the only technology which has been analysed over the full life cycle including production of fuel rather than just the combustion stage therefore emissions at the point of use will be lower than those given.

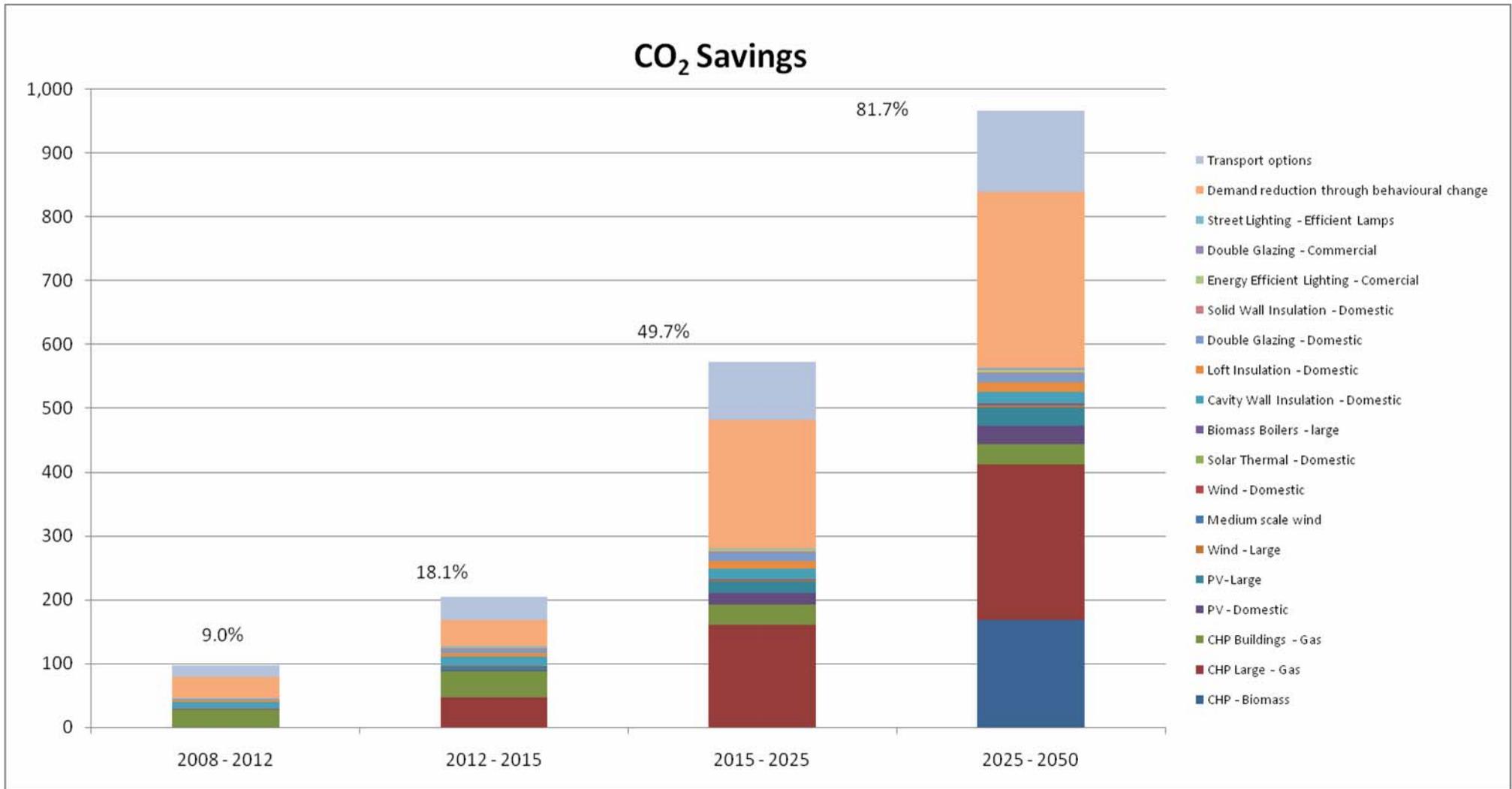
Technology	NO <sub>x</sub> (2050)
AD Biogas (high)	-258.20
Wood - traditional	-37.44
Biomass IGCC/AD biogas (low)	72.93
Wood - BAT	134.74
Wood - low NO <sub>x</sub> & SCR	277.13

**Table 2 Net NO<sub>x</sub> implications of biomass technologies**

Waltham Forest should not consider widespread take-up of small-scale biomass boilers as (i) this would continue the inefficient thermal electricity generation/separate heat delivery system which currently prevails and (ii) this would preclude the installation of clean burning technology and flue gas treatment. With larger centralised (i.e. serving an area on the scale of a borough) biomass CHP plant, expensive cleanup technologies can be installed which, from an air quality perspective, will allow biomass to be as good as or better than conventional fossil fuel technology. Another important factor to consider is that with a city-wide heat network, the generating plants themselves need not necessarily be located within Waltham Forest but further out of London with heat being transferred in towards London.

Although biomass CHP is not expected to play a major role in Waltham Forest in the short or medium term, it is worthwhile outlining the issues which must be considered before this technology is implemented i.e. the technology must be at a large enough scale for cleanup technology to be installed which would prevent negative impacts on air quality

### 3.3 Appendix: Graphs



### 3.4 Appendix: Call for ideas

Voted for at BCCC event on 23rd Feb

1st place: No. 28

Expand the current recycling scheme to include ALL types of recyclable plastic and tetra packs.

Bring in a borough wide ban on all single use plastic carrier bags.

Waltham Forest Council could produce a 'sponsored' reusable jute bag for local businesses to use. You could even do a competition to design the bag (logo, colours etc.)

2nd place: No. 3

By making available locally, regionally and nationally produced food at a reduced price encourage shoppers to buy those rather than imported items.

The price of a product should reflect the distance it has travelled. i.e.: local produce cheaper, the further a product has travelled the more expensive.

3rd place: No. 25

Encourage shops to switch off their lighting when they are closed as they cause light pollution for people living above the shops and waste a large amount of energy!

## 3.5 Appendix: Stakeholder engagement results

During the course of preparing the strategy, the following work was undertaken to engage specific stakeholders and to consider how stakeholder perspectives could influence the strategy and the future work flowing from it.

### Overview of stakeholder engagement

#### Perceptions report

The perception report reviewed a range of work undertaken nationally and in certain specific locations, to gauge the perception of people towards climate change and related behavioural change. The report selected some of the conclusions from this body of work and suggested implications for activity on climate change in Waltham Forest.

#### Call for ideas

A 'call for ideas' on actions to tackle climate change was sought through the Council newspaper wfm. This asked individuals in Waltham Forest to make suggestions on what could be done in the area to encourage and to help people tackle climate change. 44 entries were received, plus two poems expressing people's emotional reaction to climate change. Three winning entries were selected by participants at the Big Conversation on Climate Change event on 23 February. The overall winning entry proposed a scheme to select a specific area of Waltham Forest, with traders' agreement, and use incentives and disincentives for people to avoid use of plastic carrier bags when shopping.

#### Specific workshops

Five workshops were held over the course of preparing this strategy. The participants commented on emerging ideas being considered for the strategy and discussed issues and topics that would influence the strategy and be influenced by it. Participants at the events mainly comprised the following:

- Representatives of LBWF Members;
- Staff across many different departments;
- Key external partner bodies;
- London-wide bodies pursuing climate change work;
- Representatives of community and neighbourhood groups.
- Businesses and social enterprise groups.

A summary of the main outcomes and conclusions from each of these events is reported in the section immediately below.

## Working Group Chairs' workshop

Main messages included:

### **Combined Heat and Power: a possible key focus for LBWF**

It seems logical to concentrate some proportion of effort on delivering future energy needs in the borough through CHP.

There are practical and procedural implications of installing and supplying energy through Combined Heat and Power. LBWF and its key partners would need to learn and understand these implications before embarking on a major programme of CHP.

Exemplars of CHP installations could be developed at LSP sites, such as at key buildings.

**Communication is an essential** part of Council activity on climate change. There are real challenges in conveying some of the complex messages associated with climate change, such as the cause and effects, the associated behaviour change, and the policy response needed by local authorities. LBWF and the LSP need to consider and deploy the most effective ways and media for conveying these messages.

## Working Group members' workshop

Main messages included:

**Collaboration** within Council departments and with LBWF's relevant partners is essential to achieve progress across this big agenda.

**Tough decisions** will be needed to achieve the radical reductions required in carbon dioxide emissions. Some actions proposed and taken by the Council may not be popular.

### **The LSP must lead by example:**

"We need to become the change we need to see"

### **Policy Context workshop**

Main messages included:

### **Town centre regeneration across Waltham Forest needs to reinforce low-carbon measures.**

It needs to be attractive, locally distinct and have accessibility measures which minimise car dependency. Attractive local shopping centres will in themselves help to limit vehicle use by lessening people's interest in travelling further to shop.

**Action on climate change by LBWF needs to concentrate on the LSP's main sphere of influence.** The work needs to be pragmatic and realistic by focusing on achievable action, and build from there.

**The importance of adaptation issues.** In carrying out its role in greenspace management LBWF already pursues work which can help the area adapt to the effects of climate change and become more resilient to extreme temperatures, to floods and to dry periods. LBWF should consider how it can fine-tune its greenspace management to make this activity even more effective for climate adaptation. LBWF's work in influencing energy use in homes also has a role in helping places adapt to the effects of climate change.

## Councillors' & Community Council Chairs workshop

Main messages included:

**Support for CO<sub>2</sub> reduction targets:** Members present at the workshop recognised the need for deep cuts in carbon dioxide emissions. They stressed that the necessary measures deployed by LBWF needed to be economically robust i.e. affordable, efficient and effective, for now and for the future.

**Asset management should incorporate low-carbon criteria:** Decisions need to be taken imminently on the management (and in some cases disposal) of LBWF's assets. These decisions need to be informed by climate change criteria, so the Council's actions reinforce rather than undermine efforts to achieve a low-carbon future.

**Members' priorities:** stated at the event covered the following:

- **Support for micro-renewable energy**, for example integrated with domestic and community buildings;
- **Visible examples** of the LSP's commitment to tackling climate change should be prioritised, so people could see relevant activity which they could learn and be inspired from;
- **Taking the public with us**, including the younger generation, especially through education and related measure to help people understand the need for action on climate change.

## Policy Context workshop

Main messages included:

- **Town centre regeneration across Waltham Forest needs to reinforce low-carbon measures.** It needs to be attractive, locally distinct and have accessibility measures which minimise car dependency. Attractive local shopping centres will in themselves help to limit vehicle use by lessening people's interest in travelling further to shop.
- **Action on climate change by LBWF needs to concentrate on the Council's main sphere of influence.** The work needs to be pragmatic and realistic by focusing on achievable action, and build from there.
- **The importance of adaptation issues.** In carrying out its role in greenspace management LBWF already pursues work which can help the area adapt to the effects of climate change and become more resilient to extreme temperatures, to floods and to dry periods. LBWF should consider how it can fine-tune its greenspace management to make this activity even more effective for climate adaptation. LBWF's work in influencing energy use in homes also has a role in helping places adapt to the effects of climate change.

## Business stakeholder workshop

Main messages include:

- Focus on **inspiring others** & communicating best practice
- **Cost of landfill** is rising, businesses actively looking at more **sustainable waste management** choices.
- **Industrial estate sites** could provide excellent sites for **CHP network hubs** and **renewable energy installations**

## Big Conversation on Climate Change

Main messages included:

**Emotions on climate change** amongst participants ranged from feelings of concern and despair for the future, to being positive and hopeful about what can be done.

**Some local people desire rapid and radical action** by the Council, to tackle climate change. The event debated the associated ‘reality check’ of this approach, such as whether radical measures would be backed and implemented by the majority of people, and the extent to which one Borough Council could take action at a much faster pace than the rest of local government.

**Promote and help existing good practice in the borough:** There are a range of relevant measures already happening in WF to promote and to learn from. These should be harnessed as much as possible so they help people understand that tackling climate change is happening already and is achievable. Several more such examples across the borough would only need small amendments in policies and procedures to help make happen – the opportunity to unlock this activity should be strongly considered.

## Young people’s views in Waltham Forest

A recent survey of the WF Young People’s panel included questions on climate change. This ‘Young Voice’ survey was conducted between end of December 2007 and the start of February 2008. The Young Voice is LBWF’s on-line residents panel for young people aged 11-19 that live or study in the borough. 248 responses were received from a sample of c800 valid e-mails.

The results showed a high awareness of the issue and a positive attitude to tackling climate change. Some of the detailed results include:

### **How important do you think it is to take action on climate change:**

Very important:	64%
Fairly important:	23%
Not very important:	7%
Not at all important:	4%
Don’t know:	2%

### **Which of these things help stop climate change:**

Avoiding using planes:	30%
Walking, cycling or taking public transport (instead of the car):	81%
Turning off the tap when you brush your teeth:	62%
Take showers instead of baths:	45%
Use a watering can instead of hose in the garden:	38%
Don't leave your heaters on too much at home:	52%
Switch of electrical stuff when you're not using it:	86%
Recycle:	89%

### **Which of these stop you from taking more action to stop climate change:**

Don't have enough information about it:	32%
Not enough time to take public transport:	32%
Worried that public transport isn't safe or reliable:	35%
Difficulty changing your habits:	40%
Difficulty walking:	10%
Don't have a bicycle:	22%
No information about what can be recycled:	20%
Nothing prevents me:	23%

### **Implications of the results**

The results suggest that young people are sufficiently primed on climate change in Waltham Forest to recognise the worth of measures to tackle the issue. There appear to be no significant measures that need to be put in place as a precursor to action on climate change involving young people's participation. The results also indicate young people's awareness of how behavioural change can help address climate change. This means that measures to prompt such behavioural changes may be more achievable and effective. Follow up survey work with the young people's panel could test their reaction to some of the early stage measures on climate change in Waltham Forest.

### **Views from the Waltham Forest Residents' Panel**

The November 2007 report of the Residents' Panel included a selection of questions on climate change. The results, summarised below, comprise a 55% response from the postal questionnaire to residents' panel members, giving a total 604 responses. 56% of respondents were female, 44% male, 38% under 35 years old, 62% over 35 years old.

87% of respondents consider "taking action on climate change" as important (55% very and 31% fairly important). 11% do not (7% not very important, 4% not at all important), 2% don't know.

The most common action taken by respondents to tackle climate change is recycling. Mentioned by 92% of respondents, followed by switching off electrical equipment when not in use (85%). More than seven in ten respondents mentioned turning off the tap when brushing teeth (72%), using energy efficient light bulbs, installing double glazing or loft insulation (71%), or boiling only what you need in the kettle (71%).

15% of respondents would not consider washing laundry at 30 degrees, 14% would not consider alternatives to the car, and 46% would not consider avoiding air travel.

34% of respondents raised concerns that green energy might be more expensive, or concerns that that public transport might not be reliable and safe (34%). 20% mentioned lack of information about ways to tackle climate change.

### **Implications of results**

The residents' panel survey gives up to date results from a meaningful sample. Again, it shows people will be open rather than resistant to action on climate change. To ease people into the behavioural change required, it may be most productive to stress the climate change benefits of actions such as recycling, that already have high participation, and to push further action on activities where people are supportive and seem willing to participate, such as energy saving in the home. This pragmatic approach of 'starting from where people are at' is supported by other national research on climate change and public attitudes and behaviours, as summarised in the Perceptions Report.

### **Other measures and issues**

During the preparation of the Climate Change Strategy, steering group members and consultants have discussed the following potential measures, all of which could be considered as potential actions in Waltham Forest, as resources and opportunities allow:

#### ***Illustrated examples of tackling climate change***

Within communications to the public, such as on the web site and through WFM, practical actions that are happening in the borough could be explained and illustrated to the public in an engaging way. This would make the issues real for people and show that worthwhile activity is happening in their locality. Such examples could include photographs and simple explanations of:

- Existing CHP systems;
- Energy saving measures installed in buildings, with the initial results of energy and cost savings;
- Recycling measures, involving household systems and the systems used by Council departments, such as in horticultural use;
- Renewable energy installations in buildings;
- Measures to tackle fuel poverty, with the efficiency measures and results explained.

#### ***Promoting awareness through artistic expression***

Many people are disinclined to connect with climate change because they perceive the issues as scientific and technical, and outside their domain. Using arts, drama, poetry and other forms of emotional expression to address climate change, may be a means of engaging a wider range of

people. In addition, using poetry and verse, or having drama or musical performances which can be repeated, brings in a wider range of local skills and talents, and could create different types of legacy products on climate change. The LSP could be a key facilitator for such activities, and these events could be linked to wider messages on climate change being conveyed by the Council and LSP.

### ***Pledges and web site interaction***

The web sites operated by the Council, including for young people, could use mechanisms to allow people to discuss climate change issues together and learn together. Such web-based activity could include:

- Pledges of action on behavioural change;
- Question and answer discussion threads;
- Examples of good practice;
- Examples of people's own experience in taking practical steps to tackle climate change.

### ***Climate Change Champions***

A 'champions' system could be facilitated by the LSP to help diffuse positive action and awareness raising on climate change. Champions could be supported to offer advice and to galvanize effort in their own neighbourhood. Existing community and neighbourhood groups could be used as a channel and focus for a Champions system.

### ***Outreach work to support specific projects***

Staff support in the form of outreach work, to offer support, advice and some funds, could be used to target areas of the borough to deliver specific projects which achieve multiple objectives, including climate change benefits. Such activity could include action on:

- Fuel poverty;
- Local food growing, processing, and composting and waste management;
- Healthy living;
- Shopping areas which promote alternatives to plastic carrier bags.

## 3.6 Appendix: Synopsis of national, regional and local perceptions on climate change

Set out below is a review of reports, web sites and campaigns which address climate change attitudes, understanding and perceptions amongst people. These reports, web sites and campaigns are a *selection* of the UK material produced since 2002 on this subject. Web links for the sources are provided under each title.

Key relevant messages from each source have been extracted and summarised, and some concluding comments are made to help inform relevant strands of the Waltham Forest Climate Change Strategy.

### The Day after Tomorrow. Public Opinion on Climate Change

[www.climateprediction.net/schools/docs/mori\\_poll.pdf](http://www.climateprediction.net/schools/docs/mori_poll.pdf)

**Mori, for Defra, 2004**

#### ***Study objective and sources***

MORI survey of 488 adults, May 2004.

#### ***Key findings and messages***

**The level of public concern about risks of climate change reflects perceptions of its likely impacts.**

**Professional and managerial groups are more likely to see global warming as the most serious global threat**, compared with other social classes (32% for Abs, compared with 25% overall). Lower paid manual workers and those on state benefits/pensions (DEs) are the least likely to see this issue as the most serious.

**Younger men are less likely to see global warming as a serious global threat than older men** (21% aged 16-34, 32% aged 35-54, 26% aged 55+)

**Women's views show much more consistency** through age groups.

**There is no significant difference between households with children under 16 compared with those without children** in the proportions seeing global warming as the most serious global issue (25% for each group).

**18% of Britons see global warming as a serious threat to their local environment, in contrast to crime and vandalism, which came top at 68%** (2002 MORI study of 957 adults across Britain, for New Opportunities Fund).

### Attitudes to climate change – Youth sample

[www.climatechallenge.gov.uk/communicate/what\\_do\\_people\\_think.html](http://www.climatechallenge.gov.uk/communicate/what_do_people_think.html)

LVQ and COI for Defra, June 2006

#### ***Study objectives and sources***

Defra monitoring of understanding climate change, to inform its communications strategy. 749 11-17 year olds sampled in May 2006.

## ***Main findings and messages***

**Awareness of climate change is high amongst young people in England (90% awareness), though lower than the adult population.** Understanding of what causes climate change and of its possible effects are as good, if not better, than that recorded amongst adults. There are still misunderstandings: for example, the link between hole in the ozone layer; and how much impact climate change is likely to have.

**Only half the sample claimed to be worried about climate change, and youth respondents were less likely than adults to believe they are, or ever would be, affected by climate change.** Despite this, over half believed that people their age were taking action to slow down climate change.

## **Warm Words: How are we telling the climate change story and can we tell it better?**

[www.ippr.org/publicationsandreports/publication.asp?id=485](http://www.ippr.org/publicationsandreports/publication.asp?id=485)

**Institute for Public Policy Research, 2006**

### ***Study objectives and sources:***

Research into how climate change is being communicated and discussed in UK and how it might be connecting or failing to connect with mass audiences. Review of 600 media articles and broadcasts, website over three months in 2005-06.

### ***Key findings and messages:***

**These are the main types of 'repertoire' on climate change in the UK:**

- Alarmist
- 'It'll be all right'
- 'It'll be all right as long as we do something'
- 'Take small actions' – involves asking large numbers of people to take small actions. The message is one of ease and simplicity eg. On cars, kettles, ovens TVs and light switches.

**The challenge is to make climate-friendly behaviours feel normal, natural, rights and ours,** to large numbers of people who are currently unengaged.

**Target groups of people linked by shared values rather than by demographics.** Hence climate friendly behaviour can feel like 'the kinds of things that people like us do'.

**Using metaphors can help people engage emotionally** and can make desired behaviour appear attractive.

**Treat climate-friendly activity as a brand that can be sold** – this is a route to mass behaviour change.

## **New Rules, New Game**

[www.futerra.co.uk/downloads/NewRules:NewGame.pdf](http://www.futerra.co.uk/downloads/NewRules:NewGame.pdf)

## **Futerra 2006 for Defra et al**

### ***Study objectives and sources***

Update of 2005 Futerra report to Defra, providing evidence base for Government climate change communications strategy.

### ***Key findings and messages***

**Help people understand:** People need to understand more about climate change, what causes it, why it will affect them and what can be done about it. The public knows that climate change is important, but is less clear on exactly what it is and how it works.

**Use clear and consistent explanation of climate change, in all situations from all the linked sources.**

**Partnered delivery of messages will be more effective.**

**Communications must be sustained over time.**

**Government policy and communications must be consistent.**

In many cases, tactics to change attitudes are different to those needed to change actual behaviour. The only way to change behaviour is to change what is socially acceptable – then make those behaviours relevant to individuals.

**Make clear direct requests** - ask for what you want (eg. 'please don't walk on the grass').

**Make good behaviour sound normal.** Being good is important but being normal is even more so.

**Pick the right messenger:** Egg head scientists are important and have authority, but common sense and likeable people are needed to simplify the message and communicate the practical advice.

**Seeing is believing:** use pictures to reinforce and illustrate messages, especially on solutions.

**Keep reminding:** Remind people why they're being asked to take the action that you want them to change.

**Make Pledges meaningful:** People need to promise to someone, not just to a website or to themselves. Pledges should feel like a promise.

**Test and trial.** Enabling people to test, pilot and trial in a safe setting is crucial if you're asking them to do something new.

**Make experiences big and regular:** Climate change communications need an ongoing series of peaks.

**Catalyst actions:** Big impact things can encourage small actions. Eg Installing visible micro-renewable energy may encourage buying low energy light bulbs.

### **Green choice – what choice?**

[www.ncc.org.uk/nccpdf/poldocs/NCC041rr\\_green\\_choice.pdf](http://www.ncc.org.uk/nccpdf/poldocs/NCC041rr_green_choice.pdf)

**National Consumer Council, 2003**

### ***Study objectives and sources***

8 focus groups in four contrasting locations, supplemented by a quantitative survey of 2000 adults. Research coordinated by Mori.

### ***Key findings and messages***

**Consumers are generally ‘happy to do their bit’ but convenience in pressured daily lives takes precedence** – particularly among lower income groups.

**Involve people in implementation:** Local government needs to involve consumers to get the details of implementation right for different groups. Poor implementation at a local level makes consumers unwilling to trust service providers and take part in sustainable activities.

**Meeting the needs of disadvantaged consumers:** To be able to consume sustainably, low-income consumers need improved local environments, better facilities, more control over their circumstances, and more targeted information. All sustainable consumption policies need to be integrated with improvements in these consumers quality of life.

### **If I will, you will**

[www.sd-commission.org.uk/publications/downloads/I\\_Will\\_If\\_You\\_Will.pdf](http://www.sd-commission.org.uk/publications/downloads/I_Will_If_You_Will.pdf)

### **Sustainable Consumption Round Table, 2006**

#### ***Study objectives and sources***

Advice to government on how to create consumer choices that stay within environmental limits. Advice sourced from small group of experts in retailing, consumer policy and sustainability.

#### ***Key findings and messages***

Four areas of consumers’ everyday life generate four-fifths of their environmental impact: our homes, our food, transport and holidays.

There is a ‘value-action’ gap, between attitudes towards climate change, which can be pro-environmental, and people’s everyday behaviour, which might be different.

Avoid the bystander effect: People are willing to change, but they need to see others acting around them to feel their efforts are worthwhile.

Enable, Engage, Encourage, Exemplify.

### **Survey of Public Attitudes and Behaviours towards the Environment<sup>1</sup>**

#### **Defra 2007**

#### ***Study objectives and sources***

This survey establishes a representative picture of what people in England think and how they behave across a range of issues relevant to the environment. Amongst the mass of results and extracted messages there are few direct implications can be drawn to help inform policy thinking within Greater London.

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<sup>1</sup> <http://www.defra.gov.uk/environment/statistics/pubatt/download/pubattsum2007.pdf>

Data collected from a representative sample of 3,618 individuals in England during spring 2007. The survey was supplemented by a further omnibus survey of 1,618 individuals to allow additional questions to be asked. The survey was administered and analysed for Defra by the British Market Research Bureau.

Amongst the substantial range of text and statistics, the general summary messages are contained in the report's following section: 2007 Headline statistical report on attitudes, behaviour and wellbeing Given the widespread and general coverage of the climate change section of the report, just one result is selected below.

### ***Key findings and messages***

#### **“How often do you talk about climate change with your friends & family?”**

Answers in percentages based on all respondents aware of climate change

“Never”	UK Ave: 27	London: 27
“Every six months”	UK Ave: 25	London: 22
“Monthly”	UK Ave: 24	London: 22
“Fortnightly”	UK Ave: 6	London: 7
“Weekly”	UK Ave: 13	London: 14
“Daily”	UK Ave: 3	London: 5

### **Green Barometer 3<sup>rd</sup> report**

[www.energysavingtrust.org.uk/.../the\\_uk\\_s\\_opinion\\_on\\_climate\\_change\\_the\\_green\\_barometer](http://www.energysavingtrust.org.uk/.../the_uk_s_opinion_on_climate_change_the_green_barometer)

#### **Energy Savings Trust, 2007**

##### ***Study objectives and sources***

Uses Mosaic profiling data to indicate household types and how best to engage with them on climate change. (Mosaic data are available at ward level for LBWF.) Mosaic market segmentation: UK households are segmented according to their energy bills, car use, and attitudes to the environment.

Green Barometer methodology: 1,202 households interviewed across UK in Aug 07. This is a quarterly national tracker of behaviour and opinion.

Power of one methodology: Henley Centre research in 2007

##### ***Key findings and messages***

**The Mosaic household segmentation model** is set out below (percentages indicate proportion of this category present in Greater London at 2007):

##### **Environmentally Mature (6.2%)**

Affluent couples in large detached houses. Have high CO<sub>2</sub> emissions

##### **Educated Advocates (37.9%)**

Young professionals and educated couples still enjoying a city lifestyle. A high transient element, often sharing a property and not the sole influence on its energy use. Likely to be influential on energy and car use in the next stage of their life.

**Discerning Elders (3.9%)**

Professional couples on the cusp of retirement. Have potential to reduce their quite high energy and car use as the household membership shrinks, with kids leaving home.

**Comfortable Conservatives (1.5%)**

Have worked hard to achieve household stability and are reluctant to change.

Household and vehicle emissions are above average.

**Britain Today (16.4%)**

Majority are suburban couples influenced by tabloids. Household and vehicle emissions are not high, and their attitude to the environment is below average.

**Restful Retirement (2.2%)**

Elderly couples and widowers who have low car and energy use.

**Driving Dependency (3.5%)**

Young sharers or couples in new houses who see the car as the only way to get around. Below average attitude to the environment with a 'live for now' culture. High vehicle use but the lowest household CO<sub>2</sub> emission score.

**Financial Burdened (8.2%)**

Families with high expenditure on everyday living. Household income is committed on mortgage, grocery, shopping, holidays etc. Demands of the family result in a relatively high energy use.

**Ethnic Tradition (17.4%)**

Asian families and other ethnic groups living in suburban semis or industrial terraced housing. Attach a high importance to the family and many live in extended family situation. Household energy consumption is high, car ownership is limited and shopping and socialising mainly local.

**Environmentally Indifferent (2.7%)**

Poorer families and elderly couples in council or ex-council accommodation. Their focus is day to day survival. Vehicle ownership is low, and household CO<sub>2</sub> emissions are just below average.

Having explained the household segmentation categories, the report advises on how to use the material to target energy saving advice, "giving people appropriate and actionable solutions".

**The report also sets out the EST's Green Barometer methodology and latest quarterly results.** The methodology is as follows:

**Attitudinal basket** (people are asked for their level of agreement on the following seven views):

- Climate change will affect me and my family
- If the Government wants me to do more to conserve energy, it needs to start letting me know what I can do

- The Government isn't doing enough to tackle climate change – so why should I?
- I can feel a growing pressure to change the way I live to reduce the impact of climate change
- There is a real link between the energy I use at home and climate change
- The UK should do more to lead the world in fighting climate change
- I feel so strongly about the environment that I've stopped buying from the organisations that I think damage it

**Behavioural basket** (comprises seven energy-saving measures which people could take):

- Installation of cavity wall insulation
- Installation of loft insulation
- Installation of condensing boilers
- The number of people claiming to turn off lights when leaving empty rooms
- The average number of energy-saving light bulbs per household
- The number of people claiming to turn their TVs off standby
- The number of people claiming to consciously walk rather than take the car for at least one journey in the past week.

**The power of one** section of the report provides an index to indicate Britain's biggest energy-saving influencers. The index measures an individual's awareness and information on climate change (A1) and energy saving issues, and compares it with their degree of engagement and action. (EA) ( $I = AL \times EA$ )

The influencer index splits the public into four types in relation to their position in local social networks. These four categories are:

**Community changers** (38% of UK population)

Couples dominate this group, who have vocal views, backed up views with action. They believe they are knowledgeable on energy and climate issues and use many sources of advice. They link into many different networks, including online communities and international networks, so they have a wide spread of dialogue and potential influence.

**Armchair advocates** (20 per cent of UK population)

Married men leads this group which claims to be very knowledgeable about energy saving and climate change issues. Often this knowledge is not backed up with action. Group members tend to view their core social network and experts as the most trusted sources of information.

**Teatime solvers** (17 per cent of UK population)

Often women between 35 - 50 and most likely of all groups to have children. This group feels guilty about not saving energy and admits to not knowing much about climate change. These people use a wide circle of influence, consulting everyone from neighbours to radio programmes in their quest for knowledge.

**Self-contained singles** (25 per cent of UK population)

Mainly between 18 and 44, and the most likely of all groups to be single, this group has room to learn more about energy saving. Moving within select communities and networks they only regard a small circle, mainly of family and friends, as trusted advisors on climate change and energy saving.

## Climate change Communications – Dipping a toe into public motivation<sup>2</sup>

**Chris Rose, with Pat Dade, Nick Gallie and John Scott. 2005**

### ***Study objectives and sources***

A nationally representative telephone survey in Feb 2005 of over 1000 adults, asking several questions on climate change, about environmental issues, about their political identity, and about their cultural lives.

### ***Key findings and messages***

**The methodology identifies three ‘motivational groups’ of people:**

**Settlers** (21 % of UK population in 2005)

Settlers are socially conservative, concerned with the local, known, identity, belonging, and prefer trusted channels and known behaviours. They are wary of change and espouse discipline. They keep to the rules and want a lead from authority.

**Prospectors** (44% of population in 2005)

Prospectors want to acquire and display the symbols of success in all they do. They are a higher energy more fun seeking group. They are early adopters but not innovators. They avoid social risk.

**Pioneers** (35% of population in 2005)

Pioneers are society’s scouts, testing and innovating, and always questioning. Some are strongly ethical, believing they must be better people to help improve the world. They are the most at ease with change and the most global in outlook.

The authors use this approach to market segmentation as “what drives behaviours and attitudes are motivational needs. If communications can be arranged to meet these needs, then it stands the best chance of being effective. Systems such as MOSAIC are based on consumer data (behaviour) and are nationally applicable but motivations cannot be imputed from such systems”

**In the case of climate change, the three different groups might think:**

**Settlers:** that’s not a problem unless it affects my family, my local area, my identity, my traditions.

**Prospectors:** That’s not a problem unless it affects my prospects for achievement and success.

**Pioneers:** it’s a problem.

**When offered a solution by others, for example a technological change like a solar panel, the three different groups of people might respond like this:**

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<sup>2</sup> [www.campaignstrategy.org/valuesvoters/climatechangecommunications.pdf](http://www.campaignstrategy.org/valuesvoters/climatechangecommunications.pdf)

**Settlers:** I'd rather not change, but if everyone else is and it's normal, and involves people like me, then ok.

**Prospectors:** I'm not taking up causes or things that may not work, but if it's in fashion and helps me look right and successful, then it's for me.

**Pioneers:** If it's good for the planet, or has an ethical imperative, we must do it.

The full report also sets out detailed results to the detailed questions put to the sample.

## [Research into motivating prospectors, settlers and pioneers to change behaviours that effect climate change](http://www.campaignstrategy.org/articles/behaviourchange_climate.pdf)

[www.campaignstrategy.org/articles/behaviourchange\\_climate.pdf](http://www.campaignstrategy.org/articles/behaviourchange_climate.pdf)

**Chris Rose (Campaign Strategy) with Pat Dade (Cultural Dynamics) and John Scott (KSBR) 2007**

### ***Study objectives and sources***

Sets out findings from qualitative research in the West of England, to inform communications designed to influence domestic behaviours amongst people reached at a number of shopping centres in the region.

### ***Key findings and messages***

“...behaviour change can rarely be achieved by trying to drive it with information”.

On climate change, the ‘educational fallacy’ applies. There is a false assumption that greater knowledge of cause and effects will lead to action by people.

The report gives many examples of ways to influence settlers, prospectors and pioneers, but concentrates on ways to influence different categories of the ‘prospectors’ group.

### **Ways of influencing prospectors include:**

- Prospectors are open-minded and acquisitive of ideas as well as things. A shopping centre would be a better channel to use to float ideas in the form of new *things*, than for example a magazine or newspaper.
- Prospectors can be quick to attribute motives that give them an opt out.
- Work with what prospectors are already concerned about.
- Prospectors want value for money, rewards, convenience, cachet, and tangibility.

## [LB Sutton: Climate Change Audience Research](http://www.climatechallenge.gov.uk/whats_being_done/projects/suttoncc/default.aspx)

[www.climatechallenge.gov.uk/whats\\_being\\_done/projects/suttoncc/default.aspx](http://www.climatechallenge.gov.uk/whats_being_done/projects/suttoncc/default.aspx)

**LB Sutton, Jan 2007**

### ***Study objectives and sources***

LB Sutton had Defra funding for a communications strategy on climate change, to change residents’ attitudes regarding their behaviour linked to climate change. The audience research report findings are summarised below. Samples were obtained from a door-to-door residents survey and 8 focus groups of various age and segmentation type.

## ***Key findings and messages***

**Lack of personal impact:** Sutton residents are expecting some impact and from climate change in the UK – mainly in the weather but also in the economy. More information is needed if residents are to make the important motivational link that climate change will affect them personally, and probably financially.

**People's emotions on climate change:** 87% of Sutton residents were very or fairly concerned about climate change. In focus groups, frustration, worry, irritation and concern were the most commonly felt emotions about climate change. Irritation and frustration arose in those who perceive that government and industry, though responsible, are doing little to tackle climate change. Where industry, national and local government are taking steps this should be publicised.

**Need for advice and feedback to residents:** More Sutton residents (86%) would be prepared to change their behaviour to tackle climate change, even if they don't think it will make a difference. Homeowners and parents need to be given practical suggestions about actions they can take, as well as being helped to feel their efforts are worthwhile.

**Style of messages on literature:** Messages should be clear and hit home, and relevant by using UK examples. Messages should be colourful, not text heavy, and with clarity and simplicity on the cover. Effective use should be made of the immediately local papers (Sutton Scene and Sutton Guardian) which are read by 80% of homeowners. Literature should be in places it will be read, such as doctors and dentists waiting rooms, leisure centres, cinemas and shops.

**Reaching disengaged young people:** Young people not in employment or education had not been exposed to climate change issues since leaving school, and were disengaged and lacked interest in the topic. Re-engaging their attention is probably best done via others. Rather than by directing messages and actions to them directly.

**Engaging young people in education:** Youth Parliament and similar groups of people in sixth forms are an important audience to target.

## **Climate Change in the three Dales. A strategy for community engagement, attitude and behaviour change**

<http://www.staffordshire.gov.uk/Portal/Pages/Redirect.aspx?page=E03C00BD-E494-45DB-B487-2D3D60AE3D03>

### **Staffordshire County Council 2006-7**

#### ***Study objectives and sources***

A climate change community engagement strategy, aimed at three specific communities in North Staffordshire. It aims to change attitudes and inspire positive moves towards more sustainable behaviour.

#### ***Key findings and messages***

Defining the audience: Focus not only on socio-economic aspects of the audience but also the audience's values and motivations.

Communication and action should connect with the needs and aspirations of the target audience.

Common sense: create a new “common sense” where climate change is taken for granted, not contested and nit-picked, so discussions about whether it is happening become irrelevant, and action can be focused on getting on with doing something.

Provide agency: Providing simple means and encouragement for people to change or start new behaviour (e.g. recycling, energy/water saving).

Engage with established community-based groups to identify and establish feasible projects that people in the local community want to run

Improve quality of life as well as the environment. Low-income consumers have a more local outlook than higher-income consumers. They also suffer most from local environmental degradation. They are often shut out from making sustainable consumption choices, because of less access to facilities and less income to invest in more sustainable products. For policy measures to encourage these consumers, they should look to improve quality of life as well as the environment.

Use positive inspiration: Getting people to actually do something has a greater chance of success.

Set a visible example. Many people expect government, whether central or local, to be leading the way by doing as well as saying. Such actions should be clearly visible.

### ‘Easy wins’, ‘Big Strides’ and ‘Lasting Impacts’

Main conclusions of a report prepared by CSE for the Local Government Association and the Local Government Climate Change Commission

(see <http://campaigns.lga.gov.uk/climatechange/home> )

“Every local authority has easily identifiable opportunities to achieve greater influence over carbon dioxide emissions from its locality, however well or badly it is currently performing in tackling the threat of climate change. But realising these opportunities may have less to do with signing declarations of intent and more to do with achieving incremental improvements in performance.”

### Manchester is My Planet

[www.manchesterismyplanet.com](http://www.manchesterismyplanet.com)

A mass-campaign web site which invites people to sign a pledge, and associates climate change with the area. Covers all the council areas in Greater Manchester.

#### ***Key characteristics***

- Strong branding
- Strong link to the locality
- Linked to activities, bodies and funds focused on regeneration
- Invites people to take action to reduce their carbon footprint. The pledge is abstract and not backed up with ideas. It is up to the participant to make it tangible.

### Coolstoke.co.uk

[www.coolstoke.co.uk](http://www.coolstoke.co.uk)

A populist web site which coordinates all actions, activities and campaign messages on climate change in Stoke on Trent.

### ***Key characteristics***

- Strong branding
- Strong link to the locality
- Uses a blog, for people to see tangible action and real life perseverance in addressing climate change.
- Uses a pledge (the One Tonne Challenge) with specific examples of how an individual can save one tonne of carbon emissions a year. Participants signing up to the pledge can enter prize draw.

### **Relevant messages from the studies on climate change perceptions and communication**

The following is a selective list of key messages drawn from the above examples and studies, and possibly of most general use for LB WF:

**Integrate don't separate.** People are more inclined to respond to messages and to sticks and carrots on climate change, when these are integrated with other messages and policy measures.

**Keep positive, not negative.** Many people can be turned off by perceived negativity of the climate change message, so ensure messages are upbeat and positive, and stress what people can do and achieve, not how their lives will be impacted.

**Don't blind with science.** Many people realise that some expertise and science is necessary to understand climate change, but they are wary of this scientific knowledge which excludes them and their understanding. Messages about cause and effects of climate change should be as straightforward as possible.

**Stress opportunities, not risks and challenges.** Many people are turned off by alarmist, negative and worrying messages linked to climate change. They will be more inclined to take notice and act if they are prompted to consider opportunities and options for positive action.

**Use situations of collective action, for making a difference.** Many people don't feel their individual action is very influential or worthwhile, but they are more inclined to act on climate change in a collective context, such as at their school, of in their community group, or within their business etc.

**Recognise the more basic priorities of groups with greatest needs.** Eg. People with lower incomes find it harder to consider the future and harder to look beyond essential household welfare and comfort.

**Some measures and messages may need targeting:** Consider how to target certain messages on most appropriate segments of populations. Also consider what categories of people (or market segments) are relevant to the message or the measure(s) being proposed. There is no one correct model of market segmentation – it's possible to use or adapt existing models. Note that some organisations will promote market segmentation models to bind you into their services.

### EU regulation

#### The Landfill Directive (99/31/EC)

This directive requires member states to reduce the quantities of land filled biodegradable waste to 75%, 50% and 35% of the amount produced in 1995 by 2010, 2013 and 2020 respectively (this includes the four year derogation for countries landfilling over 80% of municipal waste which the UK has taken up). Local authorities' efforts to comply with this directive which reduce costs on landfill gate fees and the landfill tax will promote composting and the generation of biogas through anaerobic digestion. Biogas can be used as an alternative to conventional natural gas as a fuel for combined heat and power (CHP) plant and boilers and to a limited extent as a road transport fuel.

#### Energy Performance in Buildings Directive (EPBD) (2002/91/EC)

This important directive has been implemented through the revised UK building regulations. The directive come into force in June 2006, and must be fully implemented by 2009. The directive covers:

- The establishment of a framework for a common methodology for calculating the energy performance of all buildings.
- The application of minimum standards of energy performance for new buildings and existing buildings with a total surface area over 1,000 m<sup>2</sup> when they are renovated.
- Certification schemes for new and existing buildings and the public display of these certificates.
- Inspection and assessment of boilers and heating/cooling installations.

#### Renewable Transport Fuel Directive (2003/30/EC)

This directive obliges member states to ensure that a certain percentage of transport fuel comes from renewable sources. The targets are 2% of all petrol and diesel for transport purposes (calculated on the basis of energy content) by the end of 2005, and 5.75% by the end of 2010.

The UK has introduced the Renewable Transport Fuel Obligation (RTFO) that works in a similar way to the Renewables Obligation. Suppliers of transport fuel will be obliged to supply 5% renewable fuels by 2010. They will be issued with tradable certificates to show compliance. The sustainability of biofuels is currently being monitored by the scheme and by 2010 the Government hopes to reward suppliers trading under the scheme according to the sustainability of their supplies.

#### EU Emissions Trading Scheme (2003/87/EC)

The EU Emissions Trading Scheme (EU ETS), launched in January 2005, is a Europe wide scheme and is the largest multinational greenhouse gas emissions trading scheme in existence. It puts a price on carbon that businesses use and creates a market for carbon.

The UK is committed to building on the EU ETS as its main way of pricing carbon in the economy, to ensure emissions are effectively limited, and sees the EU ETS Review as an excellent

opportunity to map out a long-term policy framework and provide clear and convincing signals about the scheme. The key areas that need to be addressed to ensure EU ETS meets its potential are as follows:

- Setting safe, stable and affordable emissions limits.
- Building a global carbon market.
- Expanding the scheme.
- Improving efficiency.

### UK National Allocation Plan (Phase I)

The UK published and submitted a provisional National Allocation Plan (NAP) to the European Commission in May 2004. This made clear that the details it contained on the total quantity of allowances to be issued in the UK, and the level of allowances to be allocated to installations covered by the Scheme were subject to revision, following the completion of work on the Updated Energy Projections (UEP) and Climate Change Agreements (CCA) targets.

Further submissions were made to the Commission in June, September, November and December 2004, and February and March 2005, providing further, updated information requested by the Commission. This consolidated version of the NAP draws together the substance of the amendments notified to the Commission<sup>1</sup>. As such, the following document is a final, approved NAP that sets out the approach the UK will take during Phase I of the EU Emissions Trading Scheme.

### UK National Allocation Plan Phase II (2008-2012)

The second phase of the Scheme covers the Kyoto commitment period 2008-2012. The Government has considered its approach to the development of Phase II. In August 2006, the UK NAP was submitted to the Commission. In November the Commission announced they accepted the UK NAP. Following consultation, the list of installation level allocations was finalised. The Government has submitted the final NAP to the Commission and published the Final Allocation Decision including the list of installation level allocations for Phase II of the Scheme.

The UK submitted its Final NAP for Phase II to the Commission in August 2006 and had the plan accepted in November 2006. The approved plan and the Final Allocation Decision which includes the list of installation level allocations for Phase II was published on 16 March 2007.

### Including aviation and surface transport in the EU ETS

The Government believes that the best way of ensuring that aviation contributes towards the goal of climate stabilisation would be through a well-designed emissions trading regime. An international industry requires an international solution. However, until a truly global solution can be found the UK Government is pressing for the inclusion of aviation in the EU ETS and welcomed the European Commission's draft legislative proposal for including aviation in the EU ETS (2006).

The UK Climate Change Programme 2006 committed the Government to consider possible inclusion of surface transport into the EU Emissions Trading Scheme or as a UK self-standing measure. This was followed by a commitment in the Energy Review Report to engage with key organisations, the European Commission and other EU Member States to ensure that the

potential for future inclusion of emissions from surface transport in the EU ETS is given serious consideration.

### EU Cogeneration Directive (2004/08/EC)

This directive ensures that the member states can continue to support CHP schemes using public funds<sup>3</sup>. It provides a methodology for calculation of the energy efficiency of CHP. The harmonised methodology is key to the operation of the directive as public support must be based on the scheme's primary energy savings. The directive also requires member states to issue certificates of origin where such a certificate is required by the CHP operator. The Directive includes an amendment to the EU Hot Water Boilers Directive (92/42/EEC). This ensures that micro-CHP units which would not be able to comply with minimum heat efficiency thresholds required by the latter can now do so.

### Energy end-use efficiency and energy services Directive (2006/32/EC)

This directive seeks to deliver economic, environmental, competitiveness and innovation benefits, by reducing the amounts of energy required to deliver energy services to European citizens and businesses. It has been adopted under the Article in the current European Treaty covering environmental protection.

The directive has six key elements:

- The preparation of national energy efficiency action plans every three years.
- National indicative energy savings targets of 9% by 2017.
- The important role of the public sector, particularly as a market driver.
- Governments can impose public service obligations regarding energy efficiency on those operating in the gas and electricity sectors.
- Creating conditions to develop and promote a market for energy service companies (ESCOs).
- Requirements on metering and billing to allow consumers to make better-informed decisions about their energy use.

## National

### Home Energy Conservation Act (HECA) 1995

Under HECA local authorities with housing responsibilities were required to prepare an energy conservation report that would detail those energy conservation measures that the authority considered practicable, cost effective and likely to significantly improve energy efficiency of domestic properties of all tenures within its borders.

Local authorities were expected to provide a strategy document and annual progress reports. Subsequent guidance indicated that improvements of 30% would be considered "significant" and that substantial progress should be made towards this level within ten years of the 1996 baseline.

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<sup>3</sup> such as exemption from Climate Change Levy on fuel inputs and power outputs

Most, if not all, of this target can be achieved by using a number of fairly simple measures including insulation, better controls and supply of condensing boilers<sup>4</sup>.

### Transport Ten Year Plan 2000

This document laid out the Government's strategy for improving transport over a ten-year period. It set out the Government's aim to improve all forms of transport in ways which increase choice and the levels of public and private investment needed. Eleven key transport challenges for the ten years to 2010 are set out these include climate change and the improvement of public transport services.

### Warm Homes and Energy Conservation Act 2000

As a result of this act the Government produced a target for the eradication of fuel poverty. The Government's stated aim is to ensure that 'no household in Britain should be living in fuel poverty by 2016-2018'. Fuel poverty in 'vulnerable' households will be ended by 2010. Vulnerable households are described as: 'older households, families with children and households who are disabled or who have a long term illness'.

### Decent Homes 2000

The ODPM (now DCLG) set a target "by 2010, to bring all social housing into decent condition, with most of the improvement taking place in deprived areas" where a "decent home is one which is wind and weather tight, warm and has modern facilities."

There are four aspects to this definition:

- Minimum standards for fitness.
- Reasonable state of repair.
- Reasonably modern facilities and services.
- Thermal comfort.

### Fitness Standard

The main element of this that relates to energy is that dwelling must have: have adequate provision for lighting, heating and ventilation.

### Reasonable state of Repair

This states that to meet the standard components must not be "old" where old is defined if it is older than its expected or standard lifetime.

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<sup>4</sup> Note that this might not result in 30% CO<sub>2</sub> reductions if, for example, higher temperatures are maintained in the homes.

The component lifetimes given for energy related aspects are:

Building component	Houses & Bungalows	All flats in blocks of below six storeys	All flats in blocks of six or more storeys
Heating central heating gas boiler*	15	15	15
Heating central heating distribution system	40	40	40
Heating other*	30	30	30
* denotes key component			

**Table 3: Standard lifetime for heating systems**

“Landlords will wish to consider whether these lifetimes are appropriate within their own stock for predicting the age at which the component ceases to function effectively.”

A building component can only fail to satisfy this criterion by being old and requiring replacing or repair. A component cannot fail this criterion based on age alone.

- Components are in poor condition if they need major work, either full replacement or major repair.
- One or more key components, or two or more other components, must be both old and in poor condition to render the dwelling non-decent on grounds of disrepair.
- Components that are old but in good condition or in poor condition but not old would not, in themselves, cause the dwelling to fail the standard.
- A building component which requires replacing before it reaches its expected lifetime has failed early. Under the terms of the definition, this early failure does not render the dwelling non-decent but should be dealt with by the landlord, typically on a responsive basis.

## Thermal Comfort

To meet this criterion a dwelling must have:

- Efficient heating
- Effective insulation.

Efficient heating is defined “as any gas or oil programmable central heating or electric storage heaters or programmable LPG/solid fuel central heating or similarly efficient heating systems which are developed in the future”. Heating sources which provide less energy efficient options fail the decent home standard. Programmable heating is “where the timing and the temperature of the heating can be controlled by the occupants.”

Because of the differences in efficiency between gas/oil heating systems and the other heating systems listed, the level of insulation that is appropriate also differs:

- For dwellings with gas/oil programmable heating, cavity wall insulation (if there are cavity walls that can be insulated effectively) or at least 50mm loft insulation (if there is loft space) is an effective package of insulation<sup>5</sup>.
- For dwellings heated by electric storage heaters/LPG/programmable solid fuel central heating a higher specification of insulation is required: at least 200mm of loft insulation (if there is a loft) and cavity wall insulation (if there are cavity walls that can be insulated effectively).

Most communally heated homes don't have their own programmers, though they should have thermostatic radiator valves, yet if they are sourced from CHP the heating system is much more "efficient" in primary energy terms than a conventional gas boiler system. In the true sense of "efficient heating system" they more than meet the criterion and yet in the specific criterion they fail.

### Climate Change Levy 2001 and Climate Change Agreements 2001

The Climate Change Levy (CCL) was introduced in 2001 and is a tax on the use of energy in industry, commerce and the public sector, with offsetting cuts in employers' National Insurance Contributions and additional support for energy efficiency schemes and renewable sources of energy. By adding approximately 15% to typical energy bills, the aim of the levy is to encourage users to improve energy efficiency and reduce emissions of greenhouse gases.

Climate Change Agreements (CCA), also introduced in 2001, are operated by trade associations and are an agreement between the Government and a company. They allow energy intensive businesses or other users to receive an 80% discount from the Climate Change Levy, in return for meeting energy efficiency or carbon saving targets.

### UK Electricity Suppliers Licence exemption regime 2001

On the 1<sup>st</sup> October 2001, the Government introduced legislation which relaxes exemption criteria for licences for electricity supply, generation and distribution. The threshold above which a supply licence is required has been increased. This removes the additional administrative burden associated with becoming a licensed supplier. Clearly, this benefits CHP by encouraging small-scale distribution from embedded generation - especially where energy supplies are exported direct to tenants. The new criteria increase the power output limits to include:

- Distribution of 2.5 MW<sub>e</sub> to domestic consumers, with up to a further 1 MW<sub>e</sub> from a generating station embedded in the distribution system.
- Supplies of no more than 5MW<sub>e</sub>, of which 2.5 MW<sub>e</sub> could be supplied to domestic consumers (either generated on site or received from another licensed supplier).

### Sustainable Energy Act 2003

The Act was passed in 2003 and has the following provisions:

- Requires the Government to report annually to Parliament on the 135 commitments in the Energy White Paper regarding reducing emissions of CO<sub>2</sub> and ending fuel poverty.

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<sup>5</sup> Note that at least 200mm of loft insulation is now recommended.

- Requires the Government to set an energy efficiency aim for residential accommodation.
- Enables the Government to set binding targets for local authorities falling short of their targets under the Home Energy Conservation Act (1995).
- Requires the Government to set a target for CHP (a way of using 'Waste heat' to generate electricity so reducing emissions) in Government buildings.
- Requires Ofgem (the gas and electricity regulator) to publish environmental impact assessments of its actions.
- Releases £60 million for developing renewable sources of energy.

### UK Combined Heat and Power Strategy 2004

Published in April 2004 by Defra, it set a target of 10,000 MW<sub>e</sub> of combined heat and power (CHP) by 2010 – this would meet 20% of its CO<sub>2</sub> reduction target. The strategy proposed a range of measures to support CHP.

### Fiscal Incentives:

- Climate Change Levy exemption on fuel inputs to Good Quality CHP and on all Good Quality CHP electricity outputs.
- Eligibility for Enhanced Capital Allowances to stimulate investment.
- Business Rates exemption for CHP power generation plant and machinery.
- Reduction in VAT on certain grant-funded domestic micro-CHP installations.
- A Government announcement to possibly reduce VAT more widely on micro-CHP.
- Climate Change Agreements to provide an incentive for emissions reductions.

### Regulatory Framework:

- The EU Emissions Trading Scheme, from which CHP should benefit as a form of low-carbon generation. A portion of the free new entrant reserve will be ring-fenced for CHP. The impact of the Scheme on CHP capacity is difficult to quantify and will partly depend on decisions yet to be taken on the implementation of the Scheme, but could be in the range of 100–400 MW<sub>e</sub> by 2010.
- Introduction of the EU Directive on the promotion of cogeneration (CHP) based on useful heat demand in the internal energy market.
- Changes to the licensing regime, benefiting smaller generators.
- Continued work with Ofgem to ensure a level playing field under BETTA for smaller generators, including CHP.
- Continued emphasis of the benefits of CHP and community heating whenever Planning Policy Guidance, Regional Planning Guidance or Sustainable Development Guidance is introduced or reviewed.

- Review of the existing guidance on information required to accompany power station consent applications to ensure full consideration of all options for CHP and community heating.
- Explore the opportunities to incentivise CHP technologies in an expanded household Energy Efficiency Commitment from 2005, and any wider Commitment.
- Encouraging the take-up of CHP through the Building Regulations.
- Addressing the administrative burdens placed on smaller generators and incentivising the utilisation of distributed generation.

### Promotion of Innovation:

- Instigation of field trials to evaluate the benefits of micro-CHP.
- Promotion and support by the Carbon Trust, in non-domestic markets, and the Energy Savings Trust, in domestic markets, for the development of energy efficiency and low-carbon technologies including CHP.
- Reviews by the Energy Saving Trust and the Carbon Trust of their current and future programmes to ensure they reinforce delivery of the Government's CHP target.
- Improvements to existing CHP schemes through development of a Quality Improvement programme.

### Government Leadership:

- Adoption of a 15% target for Government Departments to use CHP generated electricity and the encouragement of other parts of the public sector to consider doing the same.

### The Future of Transport 2004

The most recent White Paper 'The Future of Transport' builds on the Ten Year Plan for Transport and addresses the transport system for the country over in the period up to 2030. The White Paper acknowledges both the benefits and costs of travel and stresses that as the economy grows the demand for travel will also continue to grow. The White Paper gives three main themes for transport strategy: sustained long term investment; improvements in transport management and planning for the future. The importance of transport in reducing the emissions of greenhouse gases, in particular CO<sub>2</sub> is acknowledged. The White Paper gives the most cost effective ways of reducing the climate change impact from transport as raising the cost of fuel, reducing the cost of energy efficient vehicles and increasing the efficiency of road haulage. Key strategies for improving local travel include congestion charging, improvements to bus services including quality agreements and improving conditions for pedestrians and cyclists and promoting a culture of walking and cycling – particularly for short journeys.

However it states that the Energy White Paper found that measures in other sectors were generally more cost effective than transport initiatives.

### Energy Bill 2004

This was published in 2004. The bill implements commitments made in the Government's energy white paper 'Our Energy Future – Creating a Low Carbon Economy', published in February 2003.

The white paper identifies three main challenges for energy policy: climate change, decline in indigenous energy supplies, the need to upgrade the UK's energy infrastructure. To meet these challenges four policy goals are identified:

- Put the UK on a path to cutting CO<sub>2</sub> emissions by 60% by 2050.
- Maintain reliability of energy supplies.
- Maintain competitive markets in the UK and beyond.
- Ensure that every home is affordably and adequately heated.

By 2020 the white paper envisages, 'much more micro-generation, for example from CHP plant, fuel cells in buildings or photo voltaics'. The bill places a heavy reliance on CHP to deliver the required carbon savings. For example of the 3.5 Mt Carbon required to be saved by 2010, 1 Mt Carbon comes from CHP. The rest will come from energy efficient appliances and lighting, fabric insulation measures and condensing boilers.

### Implementation of Micro-generation Strategy 2006

The objective of Government's Micro-generation strategy, published 2006, is to create conditions under which micro-generation becomes a realistic alternative or supplementary energy generation source for the householder, for the community and for small businesses.

In 2004 there were approximately 82,000 micro-generation installations in the UK. Yet the 'Potential for Micro-generation Study and Analysis' study commissioned by the DTI from the Energy Saving Trust suggested that by 2050, micro-generation could provide 30–40% of the UK's electricity needs and help reduce annual household carbon emissions by 15%.

### Building Regulations 2006

#### New Dwellings

The new draft building regulations came into force in April 2006. They make requirements for a Target CO<sub>2</sub> Emission rate (TER) expressed in kg/m<sup>2</sup>/yr. For most dwellings (under 450m<sup>2</sup>) the SAP method must be used and this now includes ventilation and internal fixed lighting as well as heating and hot water.

The target is set by entering the dimensions of the proposed buildings into SAP but using a standard set of reference data for U-values, boiler efficiency etc, multiplying this by a fuel factor and then adjusting this overall carbon figure by an improvement factor of 20%. The reference set of U-values are essentially the U-values set out in 2002 Building Regulations. Thus far this would therefore imply an overall 20% improvement on these values needs to be achieved.

However low or zero carbon energy supply systems such as PV, solar thermal or ground source heat pumps (GSHP) or CHP can be used to contribute towards this target. In order to prevent over use of trade offs a minimum set of U-values has been set. These are similar to the 2002 Building Regulation values.

The actual building emission rate is known as the Dwelling Emission Rate (DER). The DER is calculated using SAP using the actual proposed U-values, boiler efficiency etc. The DER obviously must meet the TER for compliance to be achieved.

Essentially the overall impact appears to be that it's possible to continue to build to the 2002 Regulations if CHP, GSHP, PV or other renewables are used in sufficient quantities to provide a 20% carbon reduction. This implies that under new Regulations new Buildings could be built to 2002 U-values if enough renewables or CHP were installed. It is also worth highlighting that it is perfectly possible using relatively basic techniques to meet the requirements of the 2006 building regulations without resorting to the inclusion of renewable or low carbon generation.

On the 13<sup>th</sup> December 2006, the Government announced a proposal to progressively tighten building regulations up to 2016, when all new homes would be “zero carbon”<sup>6</sup>.

## Existing Dwellings

Existing dwellings are subject to building regulations approval when certain works are carried out to them. Examples of such works include extensions, changes of use, loft conversions and the replacement or *renovation of a thermal element*<sup>7</sup>.

When these works are carried out, any new building elements would have to meet the same U-value standards as for new dwellings, i.e. similar to the 2002 building regulations. They must also not make any existing building elements any worse than they were before the work was carried out.

For renovating or replacing thermal elements (excluding decorating), the thermal element should meet the relevant U-value standard where technically, functionally and economically feasible. A measure with a simple payback of 15 years or less is considered economically feasible. If it is not feasible, then the element should be improved to the best standard that is technically, functionally and economically feasible. A good example of this is cavity wall insulation, where the amount of insulation that can be installed is limited by the size of the cavity. The highest feasible standard is probably to fill the available cavity with insulating material.

## Code for Sustainable Homes 2006

Initially a consultation for the Code was launched on 6<sup>th</sup> December 2005, followed by final publication on 13<sup>th</sup> December 2006. It is based on the BRE's existing EcoHomes scheme, and is also compatible with the Energy Performance of Buildings Directive to avoid duplication. The code is a voluntary initiative, by Government and Industry, to actively promote the transformation of the building industry towards more sustainable practices by requiring buildings to use:

- Energy resources more efficiently.
- Water resources more efficiently.
- Material resources more efficiently.
- Practices and materials designed to safeguard occupants' health and well-being.

The principal objective of the code is to become the single national standard for sustainable building that all sectors of the building industry will subscribe to and consumers demand and to promote more sustainable building practices.

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<sup>6</sup> [www.communities.gov.uk/index.asp?id=1002882&PressNoticeID=2320](http://www.communities.gov.uk/index.asp?id=1002882&PressNoticeID=2320), accessed 3/1/2007.

<sup>7</sup> A thermal element is essentially a wall, floor or roof separating the inside of the building from the external environment.

The Code has various essential elements. These are:

- energy efficiency in the fabric of the building and appliances in the building. This covers, for example, the standard of insulation or the use of solar heating. It may include 'A' rated kitchen appliances (where fitted) or low energy light bulbs.
- water efficiency, for example, fitting dual or low flush toilets and reduced flow taps.
- surface water management, for example sustainable drainage.
- site waste management, as building construction is responsible for a significant proportion of waste that currently goes to landfill.
- household waste management. This means providing space for bins, such as segmented kitchen bins for recycling waste.
- use of materials, for example, using low allergy materials.
- ecology of the site, which must be protected or enhanced by development.

Minimum standards would be set for each essential element and all of these must be achieved if a home is to meet Code standards. Where there is a relevant building regulation, then the minimum Code standard would at least equal or exceed it.

In addition, homes built to higher Code standards might have some of the following features:

- Lifetime Homes - this is about internal adaptability so that a home can be adapted for use of an elderly or disabled person.
- Additional sound insulation which is especially important in apartment developments.
- Private external space which may be a garden or a balcony.
- Higher day lighting standards which is beneficial to health and reduces the need for electric lighting.
- Improved security.
- A home user guide - this is a home log book and will advise purchasers on the details of the sustainability of their home.

The Code is performance-based which means that it does not prescribe how a particular standard should be achieved. Rather, it sets a standard and allows the house-builder to deliver the required level of sustainability. This is designed to encourage the house-building industry and its suppliers to become much more innovative in finding sustainable building solutions and products.

### How will the Code be applied?

The Government wishes to see all new homes in England built to meet the Code. Homes we construct today should be built to last for at least 60 years. It will be a lost opportunity if house-builders fail to recognise how much the climate could change even by 2030.

It is expected that, when guidance is released in April 2007, all new homes built by RSLs (or others) with Housing Corporation funding will be required to comply with higher levels of the Code, together with homes developed by:

- English Partnerships.

- Direct funding support from any of the Government's housing growth programmes, including the Thames Gateway, the Milton Keynes/South Midlands area and Ashford, together with any other growth points that are supported.

### Essential Element Minimum Standard

- Energy Efficiency – 10% improvement over Building Regulations Part L1A 2006 (conservation of fuel and power).
- Water Efficiency - No greater than 120 litres per head per day (use of potable water) (46m<sup>3</sup>/bedspace/year).
- Surface Water Management - Ensure that peak run-off rates and annual volumes of run-off will be no worse than the original conditions for the development site.
- Site Waste Management - Adopt and implement Site Waste Management (during construction) Plans (including monitoring of waste).
- Household Waste Management - At least 0.8m<sup>3</sup> storage for each home (during occupation and use).
- Use of Materials - Inventory of materials/products used.

The code has six levels of awards. Effectively all new homes must meet the minimum standard (level one - 35 points) and any new homes built with public money must meet level 3 (57 points)

### Strengthening the Code

After the consultation the Government announced it would be introducing a series of revisions to the Code as well as undertaking further research into future improvements.

In addition, energy efficiency ratings - which form one component of the Code - will be made mandatory for new homes and existing homes. The ratings will be included in energy performance certificates set out to EU standards.

The Government has decided to set minimum standards of energy and water efficiency for every level of the Code, rather than allowing builders to trade different kinds of improvements against each other. The lowest levels of the Code will also be raised above the level of mandatory building regulations.

The Government is considering making assessment under the code mandatory in the future.

### Sustainable Operations in Government 2006

In 2006, the Prime Minister launched new targets for sustainable operations on the Government estate, replacing those in the Framework for Sustainable Development in the Government Estate. The targets include commitments for the office estate to reduce carbon emissions by 30% by 2020 and achieve carbon neutrality by 2012 and for Departmental energy efficiency (kWh/m<sup>2</sup>) to improve by 30% by 2020. In addition, departments are mandated to adopt the Carbon Trust's Carbon Management Programme.

## Climate Change Bill 2007

The Draft Climate Change Bill, published in 2007, is considered to be the Government's blueprint for tackling climate change and sets out a framework for moving the UK to a low-carbon economy.

Key points of the draft bill include:

- A series of targets for reducing carbon dioxide emissions - including making the UK's targets for a 60% reduction by 2050 and a 26 to 32% reduction by 2020 legally binding.
- A new system of legally binding five year "carbon budgets", set at least 15 years ahead, to provide clarity on the UK's pathway towards its key targets and increase the certainty that businesses and individuals need to invest in low-carbon technologies.
- A new statutory body, the Committee on Climate Change, to provide independent expert advice and guidance to Government on achieving its targets and staying within its carbon budgets.
- New powers to enable the Government to more easily implement policies to cut emissions.
- A new system of annual open and transparent reporting to Parliament.
- A requirement for Government to report at least every five years on current and predicted impacts of climate change and on its proposals and policy for adapting to climate change.

## Waste Strategy 2007

The Government's Waste Strategy for England, published 2007, sets out their vision for sustainable waste management, including increasing recycling. Strategy also sets out policy on improving the recovery of energy from waste. Overall impact of the strategy is expected to be an annual net reduction in global greenhouse gas emissions of at least 9.3 MtCO<sub>2</sub>e per year compared to 2006.

## Towards a Sustainable Transport System – supporting economic growth in a low carbon world 2007

This green paper sets out the Government's response to the Stern Review on the costs of climate change and the Eddington report on transport and the economy and how these should inform transport policy. It recommends increasing transport capacity where it is most needed where transport networks are over congested and investing in cost effective local sustainable local transport networks, by promoting walking and cycling and improving bus networks. The document will be discussed and refined over the next six months, engaging with stakeholders and the results published in a White Paper in the summer 2008.

## Zero carbon homes 2007

The Government's Building a Greener Future: policy statement, published in 2007, confirms their intention for all new homes to be zero carbon by 2016 with a progressive tightening of the energy efficiency building regulations - by 25% in 2010 and by 44% in 2013 - up to the zero carbon target in 2016.

## Energy Performance of Buildings Directive 2007

A new compulsory Energy Performance Certificate (EPC), initiated by the EU in 2003, was introduced in the UK from 2007. The EPC will be part of the Home Information Packs, and will detail average costs for heating, hot water and lighting in the home. It will also quantify how energy efficient the home is and how to cut costs with energy efficiency measures.

## Energy White Paper 2007

The white paper “Meeting the Energy Challenge”, published in May 2007 outlines the Government’s strategy to meet the same four policy goals outlined above. The white paper is renowned for signalling a renewed interest in nuclear power and also brings in changes to the Renewables Obligation to offer more support to less commercially mature technologies.

There are a range of measures to support distributed energy (primarily renewables and CHP) including:

- Making changes to the energy market to improve the conditions for small and distributed generators.
- Making connection to the distribution network simpler.
- Encouraging the take up of distributed generation through planning policy in particular PPS 22.
- Offering support for ESCOs and promoting distributed generation in general through regional development agencies

The renewables obligation has been extended further ahead to provide greater certainty for investment and from 2009 will be banded. This means that support will be targeted according to the needs of individual technologies with less commercially advanced technologies receiving a greater level of support than more mature technologies such as onshore wind. Renewables will also be central to the proposed planning policy statement on climate change.

## Carbon Reduction Commitment 2007

In May 2007, the Energy White Paper introduced the Government’s intention to implement an updated version of the Energy Performance Commitment (EPC) called the Carbon Reduction Commitment (CRC). The CRC will apply mandatory emissions trading to cut carbon emissions from large commercial and public sector organisations not covered by the EU ETS. It covers around 10% of the UK economy wide emissions, and will provide incentives for organisations to save money through energy efficiency.

It is likely to come into force in January 2010 and our current estimates are that it could save 1.8 MtCO<sub>2</sub> per year by 2015, rising to 3.7 MtCO<sub>2</sub> per year by 2020.

## Biomass Strategy 2007

The UK Biomass Strategy, published with the Government’s Energy White Paper in 2007, outlines the Government’s ambitions for the sustainable development of biomass for heat and power, transport fuels and industrial products. It sets out current UK Government policies and explains how these policies jointly operate for the development of biomass as a whole. It includes details of how we will work with stakeholders to drive a faster growth in the use of anaerobic digestion

technology by local authorities, businesses and farmers. Delivery of the strategy will require a major expansion of biomass use and sustainable supply. The policies set out in the strategy form an integral part of climate change and energy goals, helping to deliver the new EU 20% renewables target.

### A Sustainable Future for Cycling 2008

This strategy sets out the role of cycling in reducing carbon emissions and congestion and in improving public health and local air quality. The strategy sets out a commitment to increase funding for Cycling England, to work with local authorities to deliver better cycling facilities and encourage cycling and is supported by the Department for Health budget. It also sets out the results of the Sustainable Travel Towns initiative, which may be a useful resource for information on best practice. These showed that a package of measures to encourage sustainable transport behaviour and improve infrastructure for cycling and public transport increased walking by 20%, cycling by 30% and public transport by 15%, and lead to a reduction in car travel by 12%.

### Carbon Emission Reduction Target 2008-2011

Under the Energy Efficiency Commitment (EEC) 2002, electricity and gas suppliers are required to achieve targets for the promotion of improvements in domestic energy efficiency in Great Britain. The EEC makes a significant contribution to the Climate Change Programme in the household sector by cutting greenhouse gas emissions. Since at least 50% of energy savings must be focused on a priority group of low-income consumers, it is expected that the EEC will also contribute to the eradication of fuel poverty. The current phase of the EEC runs from April 2005 to March 2008.

From April 2008 to March 2011, the Carbon Emissions Reduction Target (CERT) previously referred to as EEC 3, will build on the success of the EEC. Under proposals currently before Parliament, energy suppliers would be required to achieve targets for the reduction of carbon emissions in the household sector in Great Britain.

The Order requires energy suppliers to achieve an overall target of 154 million tonnes of carbon dioxide (MtCO<sub>2</sub>) lifetime reduction in carbon emissions, a broad doubling of activity of the current EEC. Suppliers must direct at least 40% of carbon savings to a priority group of low-income and elderly consumers.

In addition to the energy efficiency measures of the current EEC, suppliers will be able to promote micro-generation measures; biomass community heating and CHP; and other measures for reducing the consumption of supplied energy. CERT will maintain a focus on vulnerable consumers and will include new approaches to innovation and flexibility.

### Supplier Obligation, post-2011

The 2007 Energy White Paper reaffirms the Government's commitment to maintain some form of obligation on household energy suppliers until at least 2020, with an ambition level at least equal to that under the forthcoming CERT. This will save around 3-4 million tonnes of carbon per year by the end of the next decade.

## Regional

### Mayor's Transport Strategy (MTS) 2001

The Mayor of London has more responsibility for transport than any other region of England, having overall control over London Underground, buses, taxis, the strategic road network, light rail and river services - all overseen by Transport for London. In 1999 the Greater London Authority Act required the London Mayor to produce a transport strategy. This was produced in 2001 and looked at transport in London up to 2011. The strategy was written with reference to National Policy, in particular the 1998 Transport White Paper and the Ten Year Plan produced in 2000. Ten key transport priorities for London are outlined:

- Reducing traffic congestion.
- Improvements to the underground.
- Improving the bus network.
- Integrating the National Rail network more fully into London's transport network.
- Increasing the capacity of London's transport network.
- Improving journey time reliability for car users.
- Supporting local transport initiatives.
- Making the distribution of goods and services more efficient.
- Improving the accessibility of London's transport network.
- Transport integration initiatives – including fares.

Implementation of the strategy is largely down to Transport for London and the London Boroughs who are required to produce a Business Plan and Local Implementation Plans respectively to show how they will implement the strategy locally. A range of targets are set including measures regarding: passenger numbers and capacity for public transport networks; traffic growth with different targets set for central, inner and outer London; walking; cycling and road safety. Detailed guidance on how to implement the MTS through LIPs is issued to London Boroughs.

Revisions to the strategy in 2004 sets out the policy framework within which proposals for a western extension to the Congestion Charge zone were taken forward. The second revision, the Transport and Air Quality Strategies published July 2006, set out the policy framework within which proposals for the London Low Emission Zone (LEZ).

### New transport related programmes

#### Cycling

In February 2008, the Mayor announced a new programme to build on previous successes of cycling in London, aimed at achieving a growth in cycling of 400% by 2025. The three strands of the programme are:

- Bike hire in central London, providing a new public transport mode for short business and visitor trips.

- Cycling corridors, offering commuters with high profile, clearly signed priority routes from inner to central London.
- Bike Zones, covering a radius of about 5km around London's town centres, incorporating 20mph speed limits, cycle priority streets, greenways and a network of cycle-friendly routes to link schools, stations, residential areas and workplaces, supported by cycle training, parking and travel planning.

### Walking

In February 2008 the Mayor announced a new programme of investment in walking in London, with the aim that, by 2025, 22% of all trips in London will be made on foot. The two strands of the programme are:

- Legible London, a comprehensive pedestrian way-finding system to help people navigate London. Following a trial in Bond Street, Legible London will be rolled out to key central London locations and the Olympics area by 2012, with major town centres covered by 2015.
- The Streets of Gold programme will combine improved infrastructure and design for pedestrians with regeneration measures to promote walking in small catchment areas in inner and outer London, linking key local destinations such as stations, schools and shops.

### Sustainable freight

Sustainable freight distribution: a plan for London (the 'Plan') sets out the steps that have to be taken over the next five to ten years to identify and begin to address the challenge of delivering freight sustainably in the Capital. The Plan identifies four key projects for delivering freight in London more sustainably:

- Freight Operator Recognition Scheme.
- Delivery and Servicing Plans.
- Construction Logistics Plans.
- Freight Information Portal.

### Mayor's Air Quality Strategy 2002

The Mayor's Air Quality Strategy, published in 2002, sets out his proposals for improving air quality in London. Highlights relating to climate change include:

- Reducing pollution from road traffic - by reducing the amount of traffic (through investment in the public transport network, congestion charging, appropriate planning and other mechanisms) and reducing emissions from individual vehicles.
- Reducing emissions from air travel and associated facilities and travel.
- Sustainable buildings - by improving energy efficiency of new and existing buildings, and use of cleaner or renewable fuels.
- Reducing pollution from industry and construction.

## London Energy Strategy 2004

The Mayor of London's Energy Strategy *A Green Light to Clean Power* was published in 2004. It contains a vast array of policies and proposals. These are the key statements on CHP:

- Combined heat and power (CHP), whereby heat and electricity are produced and utilised simultaneously, is almost twice as efficient as separate production. Increased use of CHP would effectively reduce carbon dioxide emissions. The Mayor considers that London should maximise its contribution to meeting the national target by at least doubling its 2000 combined heat and power capacity by 2010.
- The heat generated from CHP plants can be used in industrial processes, in commercial premises or to provide heat for homes through community heating systems, which can provide affordable warmth to large numbers of homes, helping to tackle fuel poverty.
- The Mayor will use his planning powers to help to deliver significant increases in CHP capacity and community heating in London, by requiring their inclusion in planning applications referable to him wherever possible. The Mayor will encourage the boroughs and the London Development Agency to follow this lead.
- The Mayor wants to increase the use of community heating in London, and has recently led a successful application to the Government's Community Energy Programme for a London community heating development study.

## On ESCos:

- Greater efficiency in energy use can be gained by a different approach to buying and selling energy. Energy Service Companies (ESCos) would deliver the services that people require - such as warmth, heat and light. They would be obliged to work towards the reduction of greenhouse gases and to improve the condition of customers' homes. This could include helping to install energy-saving technology to reduce the energy bills of the homes they serve and providing the homeowner with a single bill covering all aspects of energy services, from fuel and electricity supply to boiler maintenance.
- A small number of these energy services companies are already operating in London. The Mayor will encourage these to expand and new ones to be set up.

## London's renewable energy targets:

The Energy Strategy for London encourages greater use of renewable energy as an essential component of London's energy mix. London's renewable energy targets aim to generate at least 665GWh of electricity and 280GWh of heat, from up to 40,000 renewable energy schemes by 2010. This would generate enough power for the equivalent of more than 100,000 homes, and would heat more than 10,000 homes.

To meet this target, London should aim to install at least:

- 7,000 domestic photovoltaic installations, converting daylight into electricity.
- 250 photovoltaic applications on commercial and public buildings.
- six large wind turbines.

- 500 small wind generators associated with public or private sector buildings.
- 25,000 domestic solar water heating schemes.
- 2,000 solar water heating schemes associated with swimming pools.
- and more anaerobic digestion plants with energy recovery and biomass-fuelled combined heat and power plants.

These capacities should then be at least tripled by 2020.

### The London Plan 2008

The Mayor of London published an update to the London Plan in February 2008. Policy 4A.3 Sustainable design and construction states that:

The Mayor will, and boroughs should, ensure future developments meet the highest standards of sustainable design and construction and reflect this principle in DPD policies. These will include measures to:

- make most effective use of land and existing buildings
- reduce carbon dioxide and other emissions that contribute to climate change
- design new buildings for flexible use throughout their lifetime
- avoid internal overheating and excessive heat generation
- make most effective and sustainable use of water, aggregates and other resources
- minimise energy use, including by passive solar design, natural ventilation, and vegetation on buildings
- supply energy efficiently and incorporate decentralised energy systems (Policy 4A.6), and use renewable energy where feasible (Policy 4A.7)
- minimise light lost to the sky, particularly from street lights
- procure materials sustainably using local suppliers wherever possible
- ensure designs make the most of natural systems both within and around the building
- reduce air and water pollution
- manage flood risk, including through sustainable drainage systems (SUDS) and flood resilient design for infrastructure and property
- ensure developments are comfortable and secure for users
- conserve and enhance the natural environment, particularly in relation to biodiversity, and enable easy access to open spaces
- avoid creation of adverse local climatic conditions
- promote sustainable waste behaviour in new and existing developments, including support for local integrated recycling schemes, CHP and CCHP schemes and other treatment options
- encourage major developments to incorporate living roofs and walls where feasible (Policy 4A.11)

- reduce adverse noise impacts.

The Mayor will and the boroughs should require all applications for major developments to include a statement on the potential implications of the development on sustainable design and construction principles.

This statement should address demolition, construction and long-term management. Boroughs should ensure that the same sustainability principles are used to assess other planning applications.

The Mayor will and boroughs should ensure that developments minimise the use of new aggregates and do not use insulating and other materials containing substances which contribute to climate change through ozone depletion.

Developers should use best practice and appropriate mitigation measures to reduce the environmental impact of demolition and construction.

The same sustainability principles are used to assess planning applications.

### Mayor's Climate Change Action Plan 2007

The Mayor of London's Climate Action Plan was published in 2007 and sets out how London aims to tackle the problem of climate change and deliver its CO<sub>2</sub> targets. The plan sets out a strategy which aims to enable Londoners to live more efficiently and does not require them to reduce their standard of living.

The London Development Agency's (LDA) implementation of specific programmes from the Mayor's plan will make a significant contribution to meeting the Mayor's overall target for London of a 60% reduction in CO<sub>2</sub> emissions by 2025.

### Targets by sector:

#### Emissions from existing homes

London's current domestic CO<sub>2</sub> emissions make up 40% of the total; this can be reduced by 7.7 million tonnes by 2025 through behavioural changes and efficiency measures. The key initiative to drive improvements in efficiency within the domestic sector is the Mayors Green Home programme, which will include:

- Heavily subsidised loft and cavity wall insulation for homeowners.
- A marketing campaign to increase awareness.
- A one-stop-shop advice and referral service on implementing energy savings measures and installing micro-renewables.
- A pilot Green Homes "concierge service", providing bespoke energy audits and project management of installation of energy efficiency improvements, micro-renewables and water conservation measures for the able-to-pay sector.
- Improving the energy-efficiency of London's social housing stock.
- Identifying skills gaps in the sustainable energy industry and developing training.

### Emissions from existing commercial and municipal activity

Current emissions from this sector are 15 million tonnes a year. A Green Organisation Programme aims to deliver a reduction of seven million tonnes of CO<sub>2</sub> in annual emissions by focusing of the following areas:

- Better Buildings Partnership - incentivising commercial landlords to upgrade their buildings.
- Green Organisations Badging Scheme - informing and supporting tenants to reduce emissions through staff behavioural changes and improved building operations, with targets and associated green 'badging' levels.
- A lobbying campaign to support the schemes above, focusing on key barriers to the uptake of energy savings and clean energy.

### Emissions from new build and development

One million tonnes of CO<sub>2</sub> per annum can be saved in 2025 through better enforcement of current regulations and the introduction of higher standards for domestic and commercial new build. This can be achieved by focusing on the following key areas:

- To revise the London Plan requirements for new developments by prioritising the use of decentralised energy supply and connecting to combined cooling heat and power (CCHP) networks.
- Further emphasis on energy efficiency through the Mayor's planning role.
- A greater focus on energy efficiency at borough level. A comprehensive outreach programme to increase sustainable energy and planning skills in the London boroughs and other key stakeholders through.
- Showing by doing - Modelling exemplary energy-efficiency standards both through individual developments and for all new affordable homes.

### Emissions from energy supply

The Mayor aims to move a quarter of London's energy supply to local 'decentralised energy' systems by 2025, and the majority of the remainder of London by 2050. This plan sets out how London could achieve carbon savings of 7.2m tonnes by 2025, through improved energy supply. The plan includes:

- Dramatically increasing the rollout of combined cooling heat and power energy supply.
- Rapidly developing and delivering mechanisms to produce energy from waste through new non-incineration technologies (such as anaerobic digestion, mechanical biological treatment, pyrolysis and gasification).
- Promoting the uptake of on-site renewable energy in London.
- Pursuing large-scale renewable power generation in London.
- Making the case for a greatly accelerated programme of investment in renewable energy in the UK.
- Supporting carbon sequestration.

## Emissions from road transport

Emissions from transport (excluding aviation) contribute 22% of the total CO<sub>2</sub> emissions. If implemented, the measures in this plan would deliver carbon savings of 4.3m tonnes by 2025. The priority will be to reduce emissions from car and freight traffic this will include:

- Changing the way Londoners travel through a major programme of continued investment in public transport, walking and cycling and promoting alternatives to the car through marketing, information and other travel demand management policies.
- Operating vehicles more efficiently, through the promotion of ecodriving by all car, freight, taxi and public transport drivers.
- Promoting low-carbon vehicles and fuels.
- Carbon pricing for transport to incentivise demand for low-carbon vehicles and fuels, and to drive innovation in further developing these technologies.

The Mayor will also pursue a programme of energy-saving measures across public transport. Including:

- Regenerative braking on the Tube - which allows energy generated in braking to be reused to drive.
- Conversion of London's entire 8,000-bus fleet to diesel electric hybrid vehicles.

## Emissions from aviation

Aviation emissions today account for approximately 7% of total UK CO<sub>2</sub> emissions. However the UK Government projections predict a 50-200% increase in CO<sub>2</sub> emissions from aviation in the UK by 2050. While the Mayor's ability to directly influence aviation emissions the following steps will be taken:

- Seeking to influence EU and international aviation policy, including inclusion of aviation in the EU emissions trading scheme (ETS) and levying duty on aviation fuel.
- Working with the aviation industry to implement efficiencies that can deliver a step-change reduction in emissions, and where necessary lobbying the European Union for research and development funding.
- Challenging the need for further runway expansion at UK airports.
- Educating Londoners and advocating alternatives to air travel.
- Leading by example ensuring that all Mayoral agencies avoid flights wherever possible and offset their emissions.

## The Mayoral group

The Mayoral group currently produces around 0.2m tonnes of CO<sub>2</sub> per year. While this is only 0.5% of London's total emissions, the Mayoral group is committed to demonstrating best practice and reduce emissions through the following steps:

- Improving the energy efficiency of our buildings.

- Maximising use of decentralised energy through the installation of combined cooling heat and power (CCHP), micro-wind, photovoltaic (PV) and solar thermal heating at all appropriate GLA group sites.
- Promoting staff energy-savings behaviour at home and at work by running ongoing staff campaigns.
- Minimising emissions from travel.
- Following high green procurement standards for contracting all goods and services.

### Green Construction Programme

The Green Construction Programmes' aim is to increase the uptake of existing green products and technologies by the construction industry so that these are more routinely used in both new build and in retrofitting existing housing and business premises. There are three projects within the programme; an Information portal, on site demonstrator events & promotion and skills training. The most effective way to achieve real results under this programme is the least understood and requires further development and thought to get traction and produce measurable results.

### Environment Programme

The Environment Programme was transferred over from the Business Engagement and Skills directorate; there are three key projects within this programme;

- Enhance – advice and support (including capital finance) to the environment sector – in particular SMEs.
- Mayor's Green Procurement Code (MGPC) – a voluntary code aimed at stimulating demand for recycled products and materials, creating a business solution to the waste problem. The code informs companies to help them make effective procurement decisions.
- London Environment Support Services (LESS) – this is the main information and advice service for SMEs in London supporting them to affect sustainability policies and reduce their environmental burden while improving their overall efficiency.

### Mayor's Draft Housing Strategy 2007

The draft Mayor's Housing Strategy was published in 2007 and sets out his approach to investment to support the delivery of new homes. The Mayor makes the following commitments to tackling climate change:

- Respond to the challenge of climate change in the delivery and standards of new homes.
- Drive up the quality of new homes, neighbourhoods and the associated public realm.
- Continue to support and promote the design principles associated with the compact city and the London Plan.
- Support a mix of tenures in new developments and regeneration to help create more sustainable communities.
- Fund only those schemes that as a minimum comply with Government Code for Sustainable Homes targets and prioritise funding to those going further.

- Establish a new Innovation and Opportunity Fund to support projects that deliver exemplary environmental design standards earlier than the target dates.
- Encourage social landlords to address the challenges of climate change through sustainable procurement and asset management strategies.
- Develop and support programmes to help private owners green their homes.
- Produce a strategy to help Londoners adapt their homes to changes in climate.
- Support a new Decent Environment standard.
- Provide funds to help achieve the target reduction in the number of vulnerable households living in non-decent private sector homes.
- Support initiatives such as equity release to encourage private owners to undertake improvements and to green their homes.
- Work with boroughs and agencies to develop a consistent approach to comprehensive estate renewal with more mixed communities.

# **Waltham Forest Climate Change Strategy**

## **Equality Impact Assessment**

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# 1 Introduction

## 1.1 Study objective

The Local Strategic Partnership (LSP) in the London Borough of Waltham Forest (LBWF) is currently in the process of developing an overarching climate strategy. This will pull together a range of Borough-wide activities, adaptation and mitigating actions to address the range of environmental issues which impact upon climate change. Sustainable Energy Action (SEA) has been commissioned to develop the Strategy on the Borough's behalf.

Given LBWF's rich diversity, the Council were keen for equality issues to be carefully considered and mainstreamed during the Strategy's formation. There was extensive engagement with community groups so that development of the Strategy could be as inclusive as possible. In addition, an Equality Impact Assessment (EqIA) was commissioned, with the intention that findings of the EqIA would feed directly into the overall Strategy.

Mott MacDonald has undertaken the EqIA for both SEA and LBWF. This report summarises the findings of the EqIA.

## 1.2 What is an equality impact assessment?

The purpose of an EqIA is to measure and record the likely impacts of a strategy, policy or project on the following groups:

- Gender
- Race
- Disability - including both physical, sensory and mental impairments
- Age - taking account of older people (60 and over) and younger people (16 and under)
- Faith / religion
- Sexuality – considering impacts on lesbians, gay men and bisexuals.

### *Assessing positive and negative impacts on equality groups*

EqIAs involve anticipating both the positive and negative consequences of a particular development for a full range of community members.

### 1.3 Why are equality impact assessments important?

*Assessing equality impacts is a statutory responsibility*

Investigating the impacts on equality groups is now a statutory responsibility originating from the Race Relations (Amendment) Act 2000, which placed a requirement on public authorities to assess and consult on the likely impact of proposals on race equality. This was supported by the introduction of the Equality Standard for Local Government in 2001 (a revised Standard was published in October 2007). The Standard was a voluntary best value performance indicator for adoption by local authorities, developed jointly by the Commission for Racial Equality, the Disability Rights Commission, the Equal Opportunities Commission and the DIALOG unit of the Employers' Organisation for Local Government.

The Disability Discrimination Act in 2005 and the Equality Act (2006) served to strengthen equality policy and placed a responsibility on public authorities to mainstream equalities considerations into policy making and to conduct robust assessments.

*Equalities considerations are part of the mainstream public agenda*

The equalities agenda is likely to gain further prominence over the coming few years as proposals for a Single Equality Bill were published in June 2007. The pronounced objective of the Bill is to simplify and streamline the discrimination legislative framework, harmonising the existing key pieces of legislation. It is expected that this will help to tackle persistent inequalities in a more consistent way, thereby producing better outcomes for those who currently experience disadvantage.<sup>1</sup> The creation of the Equality and Human Rights Commission in October 2007 has further placed equalities issues under the spotlight.

### 1.4 How can EqIAs help with the development of public sector strategies?

*EqIAs can help with and improve policy formation*

Aside from meeting statutory responsibilities, conducting EqIAs can have significant benefits for public sector bodies. They can help with:

- Early identification of any potential negative consequences of a scheme or programme, which are often unanticipated.
- Providing the opportunity to carefully study the proposals and, where possible, refine them to eliminate or minimise any adverse effects.

<sup>1</sup> Regulations (2006) – an as amended, Equality Act (2006); Employment Equality (Age) Regulations (2006); and the Equality Act (Sexual Orientation) Regulations (2007).  
discrimination law are in operation: The Equal Pay Act (1970); Sex Discrimination Act (1975); Race Relations Act (1995); Employment (Religion or Belief) (2003); Employment Equality (Sexual Orientation) Regulations (2006); Employment Equality (Age) Regulations (2006); and the Equality Act (Sexual Orientation) Regulations (2007).

- Improving schemes to minimise inequality within the surrounding community and maximise the equality of outcomes.
- Highlighting an array of expected positive impacts, thereby helping to promote the project.
- Winning support for the development or policy proposals, through involving and consulting with local people from the outset.

## 2 Methodology

### 2.1 How are EqIAs conducted?

EqIAs are usually conducted in two stages.

#### 2.1.1 Stage one

Stage one comprises a scoping exercise, which prompts thoughts about the potential impacts on equality groups. Potential positive and negative impacts are analysed, together with some consideration of possible mitigation actions where adverse consequences have been identified. This stage is a relatively brief exercise which can draw upon a variety of evidence sources such as personal knowledge and experience; relevant research, reports and literature; consultation results, and demographic data and other statistics. The process also questions whether there are any gaps in the data that is required for a robust assessment.

The typical methodology used to conduct this scoping stage can be categorised as follows:

- Data review – analysis of the available and relevant data demographic statistics; complaints/comments results; previous consultations or surveys.
- Literature review – analysis of the available literature/guidance/case studies and policy documents.
- Qualitative research – consultation with key strategic stakeholders and equality group representative bodies.

*Stage one draws on quantitative and qualitative data to identify any potential impacts on equality groups*

If Stage 1 does not expose any adverse consequences, no further action is required. However, if one or more equality groups is likely to experience disproportionate negative effects, it is necessary to proceed to a full Stage 2 EqIA.

#### 2.1.2 Stage two

Stage 2, should this be required, involves a far more rigorous examination of the project/policy, with in-depth consultation with affected groups to establish the extent of the impact. It culminates in the development of an action plan to mitigate any negative differential outcomes.

## 2.2 Our approach to this study

### 2.2.1 Task one – data and evidence review

***Review of demographic information to clarify the profile of the Borough***

This study commenced with a brief review of LBWF’s population data in order to develop a clear demographic profile of the Borough. This exercise is critical as it reveals the proportions of residents from most of the equality strands within Borough boundaries<sup>2</sup>, establishing a population profile. This profile can then be used to indicate the potential scope/coverage of any negative or positive impacts that are later identified.

2006 Office of National Statistics mid-year estimates were used as the data source. The results of this analysis are presented in Chapter 3.

### 2.2.2 Task two – literature and evidence review

***Desk-top review to identify all of the relevant issues***

SEA, the consultants responsible for developing the Climate Change Strategy on behalf of LBWF, had already held consultation events during their preparatory work. The notes from these events were reviewed to ensure that any issues considered pertinent to/by equality groups were identified.

Equality monitoring forms were distributed at the consultations, and also at the stakeholder workshop (see Task 3 below) to ascertain the demographic mix of those contributing. In total, across all of the events, 87 forms were returned. However, it should be noted that participants did not necessarily complete each question on the form.

The following table identifies the profile of the people who took part<sup>3</sup>:

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<sup>2</sup> It should be noted that datasets on sexuality are not readily available.

<sup>3</sup> Where percentage totals do not equal 100% this is due to rounding.

*Table 1 Profile of participants*

Equality group	Category	Number of people	Percentage of total who answered the question
Gender	Men	52	65%
	Women	28	35%
Race	Asian	8	10%
	Black	4	5%
	White	65	82%
	Other	2	3%
Disability	Disabled	11	13%
	Not disabled	71	87%
Age	Young people (under 20)	0	0%
	Older people (over 60)	11	15%
	Other	61	85%
Faith / religion	Christian	41	49%
	Hindu	2	2%
	Muslim	6	7%
	None	35	42%
Sexuality	Bi-sexual	1	1%
	Gay men	0	0%
	Heterosexual	75	95%
	Lesbian	3	4%

Further to the above events questions regarding the Climate Change Strategy were also put to a residents' panel, whilst a youth survey was also conducted in March 2008. Unfortunately, however, official monitoring of participation was not undertaken.

A review of all notes gathered from the various consultation exercises was undertaken, supplemented by an examination of any published literature/policy/guidance, to ensure that we had a comprehensive grasp of the potential consequences, both positive and negative, for each equality strand.

***LBWF are the first Council to have undertaken an EqIA in this area demonstrating its commitment to diversity***

It is worth noting that we had intended to incorporate some case study analysis into this study by looking at EqIAs undertaken by other authorities when developing their own Climate Change Strategies. However, our research did not identify any previous EqIAs in this area. This seems to be first time this exercise has been embarked upon, indicating a commitment to diversity and equality by LBWF and a forward-thinking approach to policy development.

### 2.2.3 Task three – stakeholder consultation

Task two helped us to identify those groups most likely to experience particular positive or negative effects from the Climate Change Strategy and what these impacts could be. However, it was considered essential to reinforce these early findings through direct consultation with equality group representatives. As such, a stakeholder workshop was organised, to explore each issue in more detail and permit a discursive debate.

***Direct consultation with equality groups and local representatives***

It was considered essential that participants at the workshop event were not only appreciative of and experienced in equality issues, but also that they had a firm grasp of local circumstances and sensitivities. It can be the case that some impacts on equality groups are geographically specific; experiences in one Borough may not be mirrored by its neighbour. As such, only local equality groups and stakeholders were invited to participate to ensure an area-specific focus.

A full list of those organisations invited to attend the workshop can be found in Appendix A. The table reveals the care that was taken to contact agencies representing each of the equality target groups and the local community.

***Participants were appreciative of Borough's diversity***

Twelve people were able to attend the event, which was considered a healthy sample. Unfortunately few representatives from external equality groups were able to participate; the audience mostly comprised LBWF officers. However, within this group there were individuals from a range of departments, which ensured that conversations were balanced. The contributions from the equality and diversity team also ensured that views of equality groups were channelled into the debate, albeit indirectly.

***Identifying ways in which to maximise the equality of outcomes***

Whilst it was disappointing not to secure involvement from a wider spectrum of equality groups, the response rate was, in itself, indicative of the fact that a Climate Change Strategy is generally regarded as cross-cutting in nature and its implementation generally beneficial for society as a whole. From experience, declined invitations can often convey a sense that the issue is not perceived as having a disproportionate effect on the equality group in question. The involvement of equality groups within the consultation process used to develop the Strategy also helped to ensure that views of equality groups were represented.

Discussions at the workshop were structured around the following headings:

- Transportation
- Housing and energy
- Waste and recycling
- Water
- Bio-diversity
- Cross-cutting issues

***Only actions which were likely to have a disproportionate impact on equality groups were analysed in detail***

Under each heading, actions which were being proposed for inclusion within the Borough's Climate Change Strategy were discussed. It should be noted that not all proposed actions were debated at the workshop; only those measures that were likely to be particularly significant for one or more equality group were chosen. Selection was based on the prior desk-based research; it enabled targeted assessment of any potentially controversial measures.

Throughout the workshop participants were asked to focus on the following questions:

- Will any of the equality groups be positively impacted by the action?
- Will any of the equality groups be negatively impacted?
- If negative consequences are identified, what mitigating actions could be put in place?
- How could the action be improved to maximise the equality of outcomes?

#### **2.2.4 Task four - additional one-to-one consultations**

Following the workshop event it was decided to contact a handful of the equality group representative organisations that had been unable to attend the event. The purpose of this was to supplement the evidence that had been gathered from other stakeholders.

Contact was made with LBWF Age Concern, Barnardo's Children's Rights, BME Alliance and LBWF Faith Forum and Methodist Church. Each organisation was invited to participate in a one-to-one telephone consultation, to address the same issues as those discussed at the workshop. Both Age Concern and BME Alliance responded to the invitation and, as such, were able to feed in their views to the study.

## 2.2.5 Task four - additional one-to-one consultations

To guide the assessment and organise the findings we used the following EqIA matrix. The matrix provides a simple and clear way of revealing which groups may experience disproportionate effects from either the Strategy or specific proposals within it. All issues raised at the workshop were recorded and assimilated with the earlier findings from Task Two to provide an overall assessment of the likely impacts of the proposed Climate Change Strategy on equality groups within the Borough.

The populated matrices can be found within Appendix B. Analysis of the key findings is presented in Chapter 4.

*Table 2 EqIA matrix*

		Women	Ethnic minority groups	Young people	Older people	People with disabilities	Faith/religious groups	Lesbians / gay men / bisexuals
<b>POSITIVE IMPACTS</b>	Will any of the equality groups be primary beneficiaries of the scheme?							
	In what ways will they benefit?							
	Will these benefits have a high, medium or low impact?							
<b>NEGATIVE IMPACTS</b>	Will any of the equality groups be negatively affected by the proposals?							
	How will particular groups be affected - what negative impacts could they experience?							
	Will these negative consequences have a high, medium or low impact?							
	Is there any way in which the negative consequences could be mitigated?							

### 3 Evidence review

***The Borough's  
population is young  
and ethnically  
diverse***

Waltham Forest is an outer London Borough in the North East of London with a population of around 220,000<sup>4</sup>. The Borough has a relatively young population profile – over a fifth of its residents (21%) are under 16, whilst only 13% are of retirement age<sup>5</sup>. Older residents tend to be clustered in the north of the Borough. Individuals claiming disability allowance comprise about 5% of the total population, which is below the national average.

Most striking about LBWF's demographic characteristics is its ethnic diversity. According to Census 2001 figures, 36% of the population identified themselves as being from an ethnic minority, with the proportion up to 70% in the southern most areas of the Borough.

These statistics are important to consider. For example, if policies and actions are identified which have particular consequences for either young people or ethnic minority groups they would, in effect, be impacting on a significant percentage of the Borough's population. In addition, the figures act as a guide as to which communities to consult within given areas to ensure actions are well tailored to local community circumstances.

The figures on the following pages illustrate the Borough's demographic profile.

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<sup>4</sup> Office of National Statistics (2006): Mid year estimates

<sup>5</sup> Ibid.

Figure 1 Percentage of the population aged under 16 years

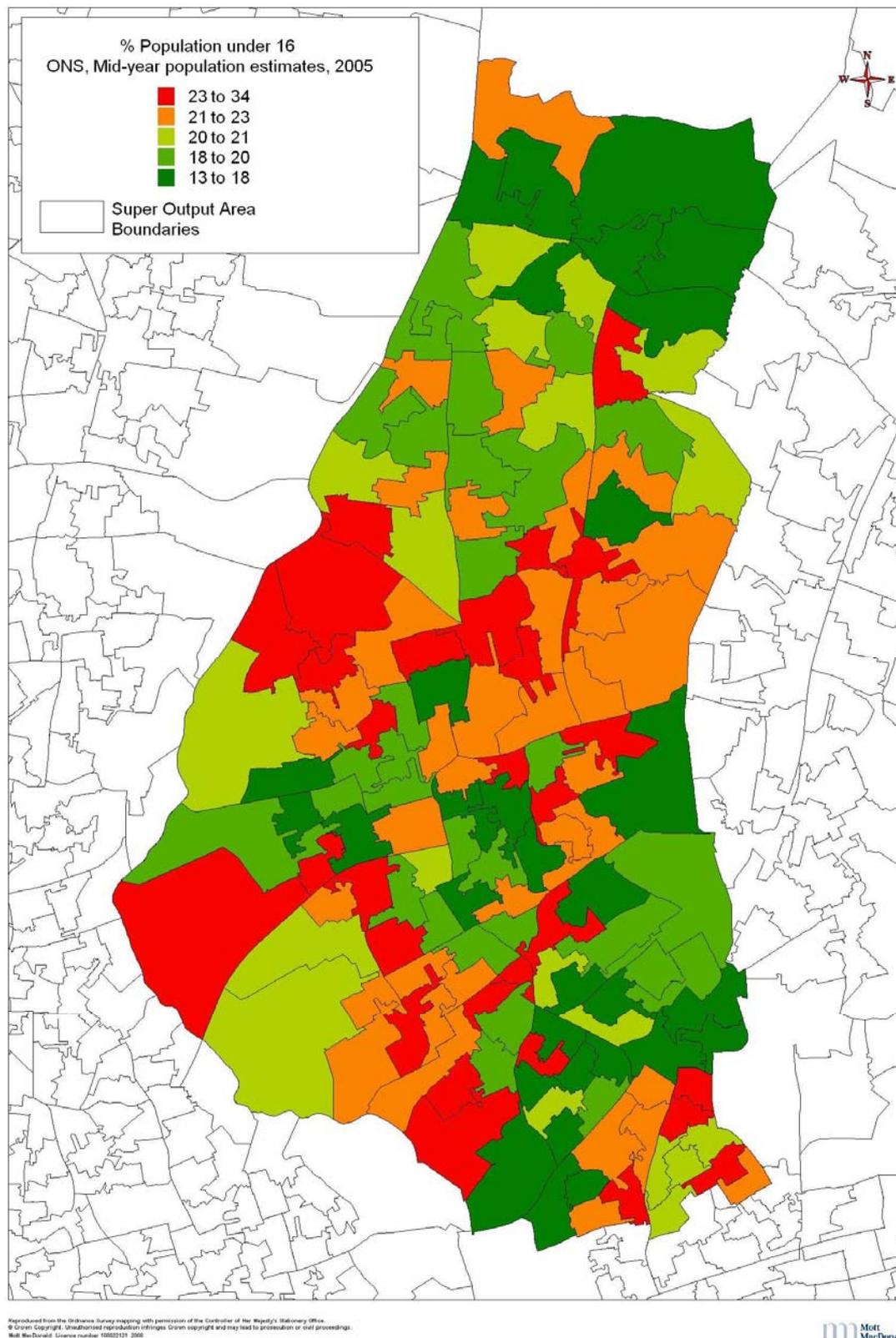


Figure 2 Percentage of males over 65 and females over 60

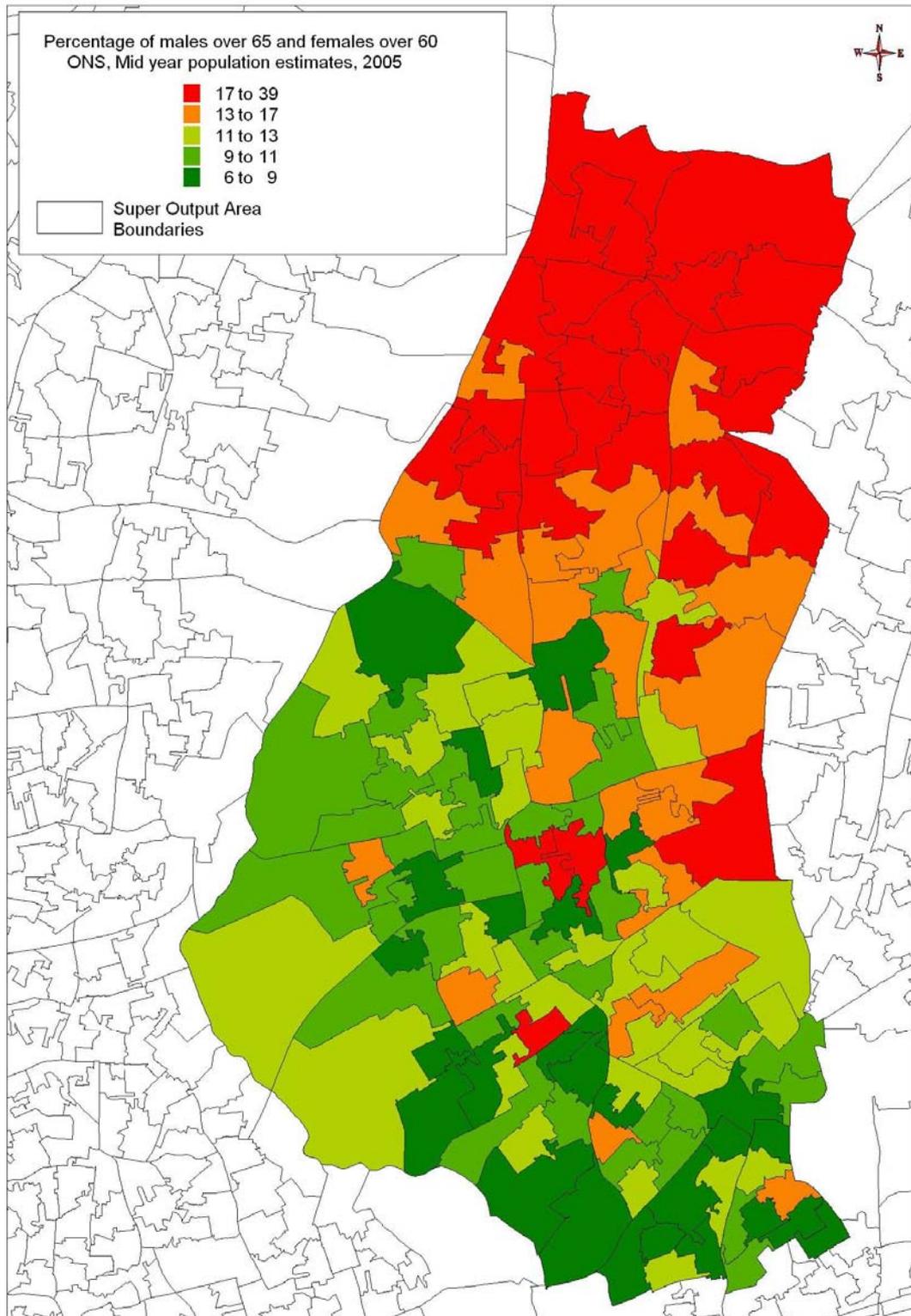
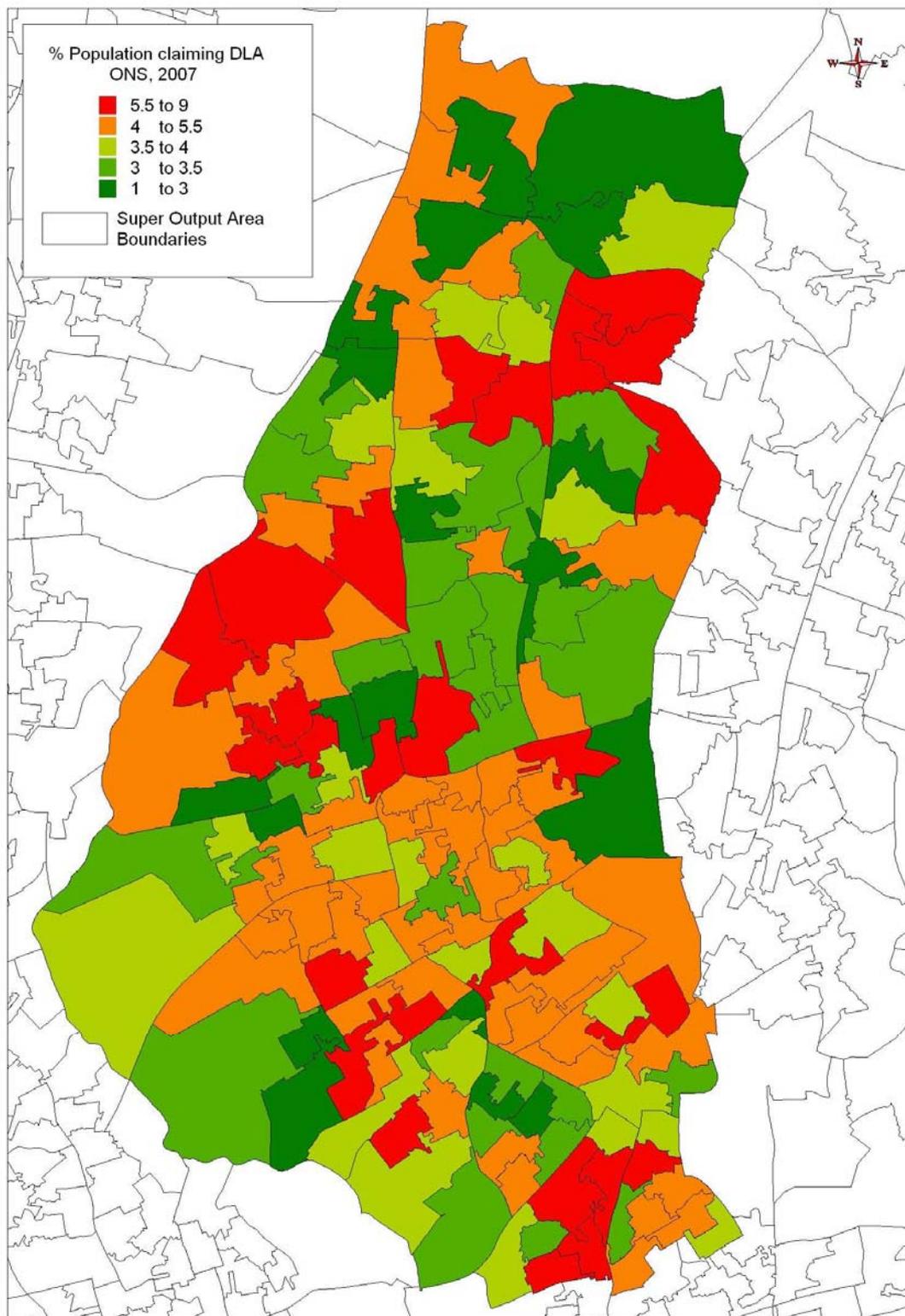
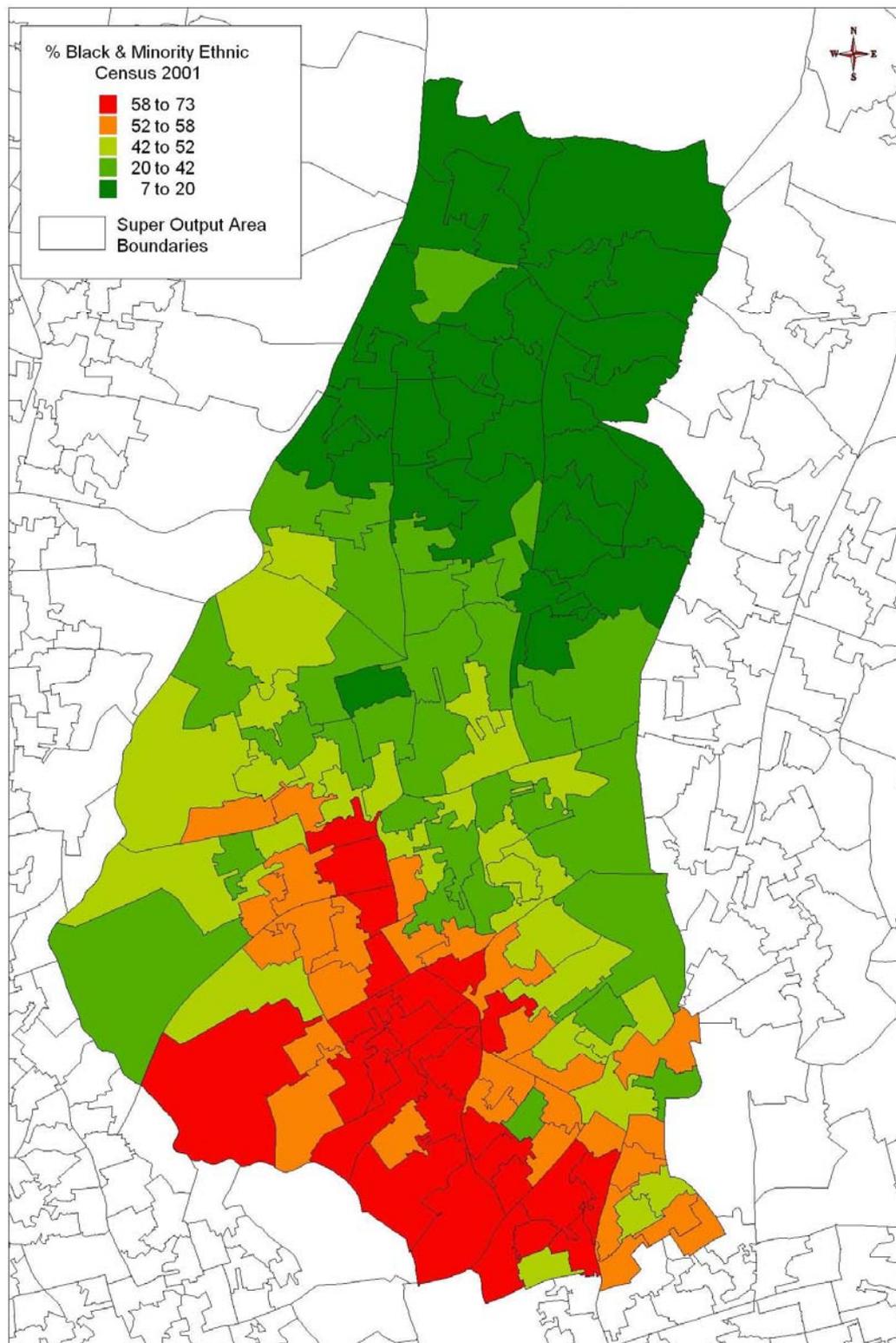


Figure 3 Percentage of the population claiming Disability Living Allowance



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Figure 4 Percentage of the population that is from a Black or Minority Ethnic Community



Population and Ethnicity Statistics for London Borough of Waltham Forest, 2001. Data from the 2001 Census. © Crown Copyright 2001. All rights reserved.

## 4 Findings and analysis

The analysis in this section succinctly combines the findings from the desk research exercise and the workshop event to provide an integrated assessment of the likely impacts of the Climate Change Strategy on equality groups within LBWF. This section is sub-divided into the same topics as those discussed with stakeholders at the workshop. Each action which was perceived as potentially having a disproportionate impact on one or more equality group within the Borough is reviewed individually. Both positive and negative impacts are considered, where appropriate. Mitigating measures and ideas for improvement which emerged from the research are also presented.

*There are many actions within the Strategy that are expected to have a generally positive impact on ALL of LBWF's community*

It is worth noting that many of the proposed Climate Change actions which are considered to have a broadly positive impact on the whole of LBWF's community, and all of the equality groups within it. Where effects are universal and non-discriminatory, they do not warrant focused discussion in an EqIA. As mentioned above, only those areas in which there is likely to be a disproportionate effect on equality groups are included in analysis; however, it is important to remember the broader benefits that will be experienced by all residents from the range of proposals excluded from report below.

### 4.1 Transportation

Of all the different policy themes within the Climate Change Strategy, the actions listed for transportation appeared most pertinent to equality groups. Desk research highlighted some potential issues for equality groups concerning some of the measures proposed in the Strategy and transport was the topic that attracted by far the most debate at the workshop.

#### 4.1.1 Travel plans

The rationale behind travel plans, be they school, residential or business oriented, is to discourage single occupancy car use and encourage more environmentally friendly ways in which to undertake regular journeys. For example, measures can be introduced that encourage cycling, walking and the use of public transport. They can help reduce congestion and pollution and therefore increase the quality of life for all members of the community.

Travel plans are regarded to generally increase equality of opportunity as they promote access to community facilities by non-motorized means, benefiting those on low incomes or those unable to drive for health reasons.

In many cases, travel plans are now a legal requirement. All schools in LBWF already have plans in place, which is one year ahead of the Londonwide target. Through the school travel plan programme the Council is taking measures to increase safety for children travelling to school by introducing and improving safer crossings, traffic calming and extending pathways.

### **Positive impacts**

*Young people could feel some benefit from travel plans ... but security concerns may require further consideration*

It was identified as part of this study that school travel plans can be beneficial for young people as they can extend the mode options available and give more freedom of choice<sup>6</sup>. Further to this point, it was noted that school travel plans could easily tie into healthy living objectives and fighting childhood obesity, thereby having a positive impact of children's lives.

### **Negative impacts**

This research highlighted that some groups felt unable to fully enjoy the benefits of pedestrian travel, due to a perceived threat to personal safety. For some vulnerable equality groups, including young people, women, older people and some ethnic minority groups, non-motorised transport may be an unattractive option, especially when travelling alone. Equally, both disabled and older groups will require particular consideration in travel plans. This is already established practice in the Borough; the importance of this should continue to be stressed.

### **Mitigation and improvement**

*Encouraging group trips and involving people in travel planning*

It was suggested that it is possible to overcome some safety concerns by including in travel planning firm encouragement to travel in groups, possibly with the organising institution (for example, the school or place of employment) taking a lead in arranging this. As mentioned above, this is already happening in many cases across the Borough. Ensuring that this remains of paramount importance in the development of travel plans will help to maximise both actual and perceived safety.

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<sup>6</sup> It was noted that whilst school travel plans could extend the travel options available to young people the possibility of this positive outcome being realised could be somewhat hindered by parents making decisions for their children.

Similarly travel planning should not be prescriptive but rather appreciative of different circumstances. To help achieve this, direct engagement of particularly vulnerable groups was highlighted as a way in which to tailor travel plans to satisfy particular needs. It was seen that this could ensure travel plans are both realistic and reflective of individuals' capabilities. Consulting directly with disabled or older people, for example, should be promoted. These steps would support the Council's current disability equality objectives of enabling disabled people to get an about more easily.

#### 4.1.2 Public transport

As well as encouraging active modes of travel such as walking and cycling, the promotion of public transport is integral to decreasing private car use and, consequently, the volume of emissions. In addition, a broad range of equality groups using public transport together is good for community cohesion as it creates opportunities for encounters with people from a broad variety of backgrounds.

It is acknowledged that public transport is already widely used in the Borough. However, the Climate Change Strategy places a priority on encouraging its use and on making improvements, particularly to the bus network, which is presently the most popular public mode.

##### **Positive**

*Young, old and disabled people may particularly benefit from public transport improvements*

Generally it is accepted that the concept of improving public transport would have positive effects on LBWF's community. Yet, young, old and disabled people could particularly benefit from a heightened standard of service and more promotion of its use. Across these three groups, reliance on public transport can be higher due to the inability to drive or lack of resources to keep a car on the road. There are also additional economic gains for these groups. Their travel on public transport is free so being able to rely on it could result in personal financial savings. In the case of disabled people this would, however, need to be contrasted with any subsidies that disabled drivers receive. This could offset the economic balance.

## Negative

***Accessibility issues make the use of public transport difficult for certain equality groups***

Negative consequences were not raised in relation to improving public transport services and facilities per se; as mentioned above, this is largely seen as a positive development for all. However, it was noted that encouragement to use public transport, especially prior to any improvements being undertaken, will not have equal outcomes. There could potentially be a disenfranchising impact on people with disabilities or those with mobility problems (for example older people and parents with pushchairs) who find it more difficult to use the bus or the tube than other sections of the population, despite the fact that all London buses are now fully accessible. The same may also be true for some ethnic minority groups who do not have a good grasp of the English language and, therefore, are not confident in navigating the Borough's public transport network.

A particular issue raised by older and disabled people, which should be borne in mind, is also the attitude of staff on public transport. The view was expressed that staff are often not adequately trained to deal with reduced mobility customers and can demonstrate impatience. For example, bus drivers do not always pull into the kerb or they move away sharply before people have been able to take their seats. This does not breed confidence in using bus services within the Borough.

***There are considerable safety concerns relating to the use of public transport***

Added to this, there are also public transport-related safety concerns amongst certain equality groups. It was commented at the workshop that women, both young and old people, the lesbian, gay and bi-sexual community and some racial groups cite this as an issue. Older people, in particular, can find large groups of school children intimidating and can be unwilling to use bus services during school commuting hours. Further to this a 'gang culture' in some areas of the Borough was noted as a particular concern for some members of the black and ethnic minority community. It was reported that certain bus routes are nominally 'owned' by gangs, thereby somewhat limiting their use by young people from other ethnic communities.

A final point raised was that the costs and logistics involved could make travelling by public transport prohibitive for large families. It was noted that some faith and race groups traditionally have bigger family groups and, therefore, may not benefit from choosing public transport as their mode of travel.

## Mitigation and improvement

**Public transport needs to be accommodating of all groups within the Borough**

In the long term justification of an increased promotion of public transport and successful encouragement of modal shift will be dependent on investment in network improvements so that it is truly user-friendly to all members of the community. For public transport to become feasible and attractive to some of LBWF's equality groups it must be accessible to them. For example, it needs to be accommodating of people with all kinds of disabilities and those who speak different languages; people must also feel safe when using it. A central consideration in this regard will be to enhance driver training so that older people or those with a disability can feel more confident about using bus services. As part of a continuous Strategy, LBWF should consider lobbying for such enhancements to Borough's bus and tube network.

**Public transport use must be safe and convenient**

In the short term, whilst the network is gradually made more accessible and inclusive, the Strategy should not shy away from promoting the use of public transport. However, it was suggested that perhaps the stress should be placed on daytime use and when it is convenient. This would demonstrate an understanding that public transport cannot necessarily provide a blanket solution, at least at present. It is not always a viable alternative to all equality groups in the Borough. Suggestions about re-introducing conductors on buses and staff at train/tube stations were made as possible ways in which to appease safety concerns. In addition, the idea was posited about establishing bus services dedicated for school use, thereby limiting the use of general services by school children and encouraging patronage by other community groups.

**Tackling perceptions is critical**

One further key point was made during the discussion of this topic, which would help to realise increased use. It was recognised that some equality groups have historically negative views about public transport. As such, it was recommended that the LSP should proactively highlight what is being done to improve the network in the Borough and its surrounding areas so as to try to tackle perceptions and ensure that any unfounded concerns are addressed.

### 4.1.3 Reducing emissions and discouraging car use

Aside from encouraging the use of public transport, reducing emissions can be tackled by introducing parking policies, which are designed to benefit local residents and businesses; encouraging car clubs or bike pool schemes; promoting and rewarding low emission vehicles; and discouraging those with larger, less fuel efficient vehicles.

## Positive

***Reducing emissions is viewed as positive for all***

Reducing air pollutants, it was accepted, has a generally positive societal effect. Benefits could be particularly pronounced for young, old and disabled residents who tend to suffer disproportionately from respiratory illnesses (such as asthma)<sup>7</sup>.

## Negative

***Penalties for high emission cars could have negative impacts on certain equality groups***

Whilst the outcome of reduced emissions is viewed as broadly positive, the different mechanisms by which this can be achieved are not always universally appealing. It was noted during the consultation that penalising higher emission vehicles would be likely to hit large families harder, and therefore could have a disproportionately adverse impact on some faith/ethnic minority groups who traditionally have larger families. By the same token, some disabled individuals need a certain size of vehicle to transport a wheelchair or other support equipment. It should be noted here, though, that the size of vehicle does not always directly correlate with the volume of emissions.

Whilst not a specific consideration of an EqIA, such penalties could also be socially divisive, hitting poorer families who are more likely to have older, less efficient and more polluting cars. It is worth noting that some equality groups, particularly old, disabled people, lone parents (mostly women) and some ethnic minority groups tend to comprise a fair percentage of the less affluent members of the community and could, therefore, suffer as a result.

***Parking policies could adversely affect people with disabilities or reduced mobility***

Significant concerns were raised about a policy of restricting parking spaces or encouraging car free developments in the Borough, due to potentially negative impacts for disabled and older drivers/passengers who are more reliant on the availability and accessibility of parking due to mobility problems. It was argued that such an approach puts pressure on the most vulnerable sections of society. Whilst some disabled residents will have blue badge permits, many older people and those temporarily disabled will not. A policy of restricting parking in urban areas, therefore, was considered socially disenfranchising. It was highlighted that similar difficulties could be experienced by families with young children.

## Mitigation and improvement

***Incentives are preferred over penalties***

Generally, the idea of developing a programme of incentives, rather than penalties, to tackle emission volumes within the Borough was favoured as it was considered that this would have fewer indirectly adverse effects on some equality groups.

<sup>7</sup> Asthma is more widespread in children than in adults. It is the most common long-term childhood medical condition, affecting 1.1 million in the UK – one in ten children. (Asthma UK)

In terms of restricted car parking, participants in the study suggested that careful consideration needs to be given prior to the introduction of such schemes. At the very least parking is necessary at health facilities, such as GP surgeries; post offices and other essential local amenities should also be served by adequate parking facilities.

***Careful mitigation steps should be taken if restrictive parking schemes are introduced***

Where a restricted parking policy is selected, adequate cycle parking should be provided as a form of compensation for fewer car spaces. The need to ensure an adequate provision of disabled parking spaces was endorsed, and any policy regarding car free developments should include within it a pre-requisite for proximity to effective public transport links.

Some of the suggestions emerging from the study are actually already in place in LBWF. The importance of continued adherence to these principles should be emphasised in the Climate Change Strategy.

#### 4.1.4 Cycling and walking strategies

As non-motorised and non-polluting forms of transport, walking and cycling offer the most environmentally friendly way to make journeys around the Borough. Therefore, not only promoting their use, but also actively seeking improvements to the pedestrian environment and the quality and quantity of cycle ways are likely to form key spokes of any Climate Change Strategy.

##### **Positive**

***Walking and cycling strategies will be broadly welcomed ... young people may see particular benefits***

Similar to the concept of improved public transport in the Borough, few negative comments were made about the objective of increasing walking and cycling's modal share. It is generally seen as beneficial to the Borough and particularly for groups who have no or limited access to a car. Older people could particularly benefit.

Links were again drawn with the ability to tackle the obesity problem and increase exercise. Young people, therefore, are also likely to feel the positive impacts of these policies.

##### **Negative**

However, it was raised throughout the workshop session and extra research that being encouraged to walk to school or work may bring with it safety concerns or risks for young people, women, old people, ethnic minority groups. These groups are more likely to have safety concerns.

A further point was that promotion of walking and cycling are not actually practical options for some individuals. Some disability groups, for example, do not stand to particularly benefit from a policy that promotes cycling. Furthermore, certain faith or ethnic minority communities, depending on their cultural background, may not see cycling as a customary or appropriate form of transport.

### **Mitigation and improvement**

***Addressing safety concerns would increase the attractiveness of walking***

Suggestions were made during discussions at the workshop about ways in which walking and cycling strategies could be improved so as to be more universally appealing. Similar to the conclusions drawn about travel planning above, stakeholders felt that walking strategies should be accompanied by statements about the desirability of walking in groups. This could maximise actual and perceived safety and hopefully encourage socially vulnerable groups to consider pedestrian travel.

***Providing pedestrian amenities is important***

It was noted that a highly important part of encouraging walking amongst older people in particular, is the provision of facilities such as toilets and benches. Installation of such amenities within the pedestrian environment should be a primary consideration if walking is to be maximised amongst all equality groups within the Borough.

***Opportunities to improve community cohesion exist***

Currently free cycle training is offered to all adults who live, work or study in the borough. The majority of adults who take part are women and are from black and minority ethnic groups. The opportunity to actively use this and promote cycling as an integrative tool was identified during the workshop. It was suggested that community cycle training, perhaps centred around a church, mosque, youth club, or school, would provide a way in which to bring together different equality groups who are sometimes on the periphery, with other members of society. This would make a tangible contribution to increasing community cohesion.

## **4.2 Housing and energy**

In preliminary research into housing and energy issues, few specific actions that were under consideration for inclusion into the Climate Change Strategy were viewed as having any disproportionate impacts on equality groups within LBWF. However, it was considered necessary to discuss the general principle of alternative energy use and low carbon lifestyles in the Borough.

## 4.2.1 Alternative energy and micro-generation

Prompting more efficient use of energy sources is clearly important in tackling climate change. Increasing the use of combined heat and power systems (CHP) is a key component of the proposed Strategy; micro-generation, such as solar power, is also promoted. Collective switching to reliance on greener energy sources could, in the long term, make a marked dent on the Borough's carbon footprint.

### Positive

***Alternative energy could realise economic savings for some vulnerable equality groups***

Predicted as a definite positive outcome of both CHP and micro-generation were the potential economic savings to be made following installation. Those most likely to gain are people who traditionally suffer from fuel poverty, notably older and disabled groups.

Savings could also be considerable for households with a high number of residents, which tend to be more prevalent amongst some ethnic minority groups. It was further noted that the prospect of being more energy efficient would be very appealing to BME communities, many of whom have traditional experiences of living in more environmentally friendly ways.

### Negative

***Technology terminology could be confusing for older people or ethnic minority groups ... costs could also be prohibitive***

Whilst the overall rationale behind encouraging alternative energy systems was considered to be beneficial for society, this study has highlighted that some equality groups may be less able than others to take advantage of them. Comments were made about the technology and terminology involved in the adaptation to greener energy, which could be potentially confusing to older people or for those for whom English is not their first language.

Actual installation costs could also be prohibitive. Whilst those most susceptible to fuel poverty may have the most to gain in the long run, this same group, by definition, are also least likely to be able to find the resources to make the transition. Response to this policy, and receipt of its advantages, could be perceived to be based on the ability to pay. As such, traditionally less affluent groups like older and disabled people may miss out on the opportunity.

In addition, it is worth noting that recouping any personal investment in the form of energy bill savings is likely to be over the medium/long-term and, therefore, may be of no benefit to older people.

## Mitigation and improvement

***The Council could play a role in raising awareness about and providing guidance on alternative energy sources***

Despite the fact that some potentially negative impacts were raised in relation to alternative energy and domestic generation, several mitigation and improvement options were posited, which could lead to increased equality of outcomes. Key to this was the need to raise awareness about, first and foremost, energy efficiency and then also about CHP and micro-generation, and their cost-effectiveness.

It was suggested that there is a key role for the LSP to take a lead on providing more information on the different options available, how to undertake a switch to another energy source and the particular planning requirements (if any) required to carry this out.

At least, it was suggested, LBWF could play a sign-posting role, pointing people towards the right information to limit risks and instil confidence. Provision of this guidance in a range of languages and formats would go further to reaching some equality groups within the Borough.

***Financial assistance packages would help equal access to micro-generation***

To address the issues of affordability and so not to exacerbate any social divisions in the Borough, the provision of installation subsidies, grants or loans was also suggested. One caveat was mentioned regarding subsidy schemes. It was noted that they would not help the most economically challenged in the Borough if they were dependent on a personal contribution; many older people in the Borough may own their own home but would not have the disposal income necessary to part fund the transition.

A further comment was made that not everyone within the Borough will have the same options open to them; it very much depends on the house that you live in. Newer houses are likely to be more efficient and are also usually more capable of accommodating changes. Moreover, many residents in the Borough live in rented accommodation, so the extent to which they can effect change in their own home is limited.

***Lessons can be learnt from cultural groups within LBWF's community***

More positively, however, participants identified that there exists an opportunity to learn from the untapped wisdom of some equality groups in society. The point was made, for example, that older people, who are likely to have lived through periods of war/rationing may have constructive and innovative ideas about minimising energy use and leading lower carbon lifestyle. Different ethnic groups may also be able to draw on their heritage and customs, sharing lessons about relying on less energy in domestic situations. Other communities that could be worth consulting include the gypsy and travelling community.

Harnessing the cultural strengths of LBWF, and making the most of its diversity would have benefits for tackling climate change and in terms of integrating some equality groups into policy making. The net benefit for community cohesion of such an approach is also clear.

## 4.3 Waste and recycling

### 4.3.1 Recycling

As with many of the actions and policies which are suggested to tackle climate change, the principle of recycling is broadly accepted as a universally positive activity for LBWF's resident communities. Whilst it did not precipitate any major concerns, stakeholders at the workshop did identify that several improvements could be included in the Strategy to maximise equality of outcomes.

*Not all equality groups find it easy to recycle*

Most notably, it was pointed out that the actual ability to recycle is far from equal. There are some equality groups, for example, that suffer mobility or physical problems which can prohibit them from participating fully in recycling activities, especially if doorstep recycling is not offered at their residence. Older and disabled people, for example, do not find it easy to carry the recycling box provided.

In addition, non-English ethnic minority communities may be less likely to understand Borough recycling instructions. New migrants are seldom fully clear about what is required. It was suggested during the consultation that this language barrier prevents otherwise willing people from recycling more.

#### Mitigation and improvement

*Providing accessible information to aid recycling*

Overcoming these issues, however, was not considered a difficult feat. Workshop participants drew attention to the assisted collections that LBWF run to help those people unable to recycle independently. These could be more widely advertised and extended where necessary.

*Images are a powerful and universal informative tool*

Translation of recycling information into key languages spoken in the Borough and, particularly, the use of images and pictures to better highlight recycling procedures are both measures that would make a considerable difference in maximising the equality of recycling opportunities. Consistent symbols are considered very effective in breaking down barriers and making information more decipherable.

Inclusion of translated material into housing packs issued by the Council was suggested. Recycling information could also usefully be included in the planned welcome packs for new arrivals which are being developed as part of the new community strategy.

*Once engaged,  
young people can  
help to promote  
recycling*

Overall a clear message was communicated that the LSP and the Council need to take a lead on this issue to ensure that recycling is a viable choice for everyone in the community. This should be incorporated within the Climate Change Strategy itself.

The consultation with stakeholders further suggested that the principle of recycling should be mainstreamed into education, with exemplary practice in schools. This, it was suggested, would have a positive impact on young people in terms of nurturing them as responsible citizens. The objective would be to enthuse and engage them, helping to make recycling part of their daily lives and put them in a position to ‘educate’ older generations of their family. This approach, therefore, could be mutually beneficial.

*Re-use schemes  
could help to foster  
better community  
cohesion*

Finally, participants were keen to retain some focus on ‘re-use’ as the first component in the waste strategy and spoke enthusiastically about schemes for swapping, selling and trading. These, it was argued, should be encouraged. Reference was made to a case study in Barcelona whereby on specific days throughout the year any items unwanted by their owners are left outdoors for others to take and use. It was identified that this could have benefits for young people due to the sense of fun involved in the event. There are potential benefits for older people, some ethnic groups with large families and any other residents who experience occasional or frequent financial problems. It would also be extremely positive for community cohesion if developed into a community event.

#### 4.3.2 Waste minimisation

##### **Positive impacts**

Encouraging waste minimisation in households is a further way to reduce the amount of rubbish being sent to landfill. It was considered by BME stakeholders that minimisation of waste would be a welcome idea for members of ethnic communities, who sometimes perceive modern British society as wasteful and not making maximum use of resources, especially compared to practice in their country of origin.

##### **Negative impacts**

Participants have one warning about waste minimisation policies. It was highlighted that should a penalty or ‘maximum’ collection policy be imposed, this could be disadvantageous to those with larger families – into which group some faith and ethnic communities traditionally fall.

## 4.4 Water

### 4.4.1 Recycling

*An awareness raising role for the Council*

#### **Mitigation and improvement**

The practice of recycling rainwater / bathwater for use in flushing toilets is a policy promoted to ease the demand on water resources and make more efficient use of supply. No major impact on any equality group is likely to be experienced, however, this study has usefully uncovered that there is a potential need for ‘myth-busting’ to highlight that ‘grey water’ is perfectly safe to use. Again, there is a signposting role for the LSP to play in terms of directing people to the relevant information.

### 4.4.2 Water metering

*Water metering could have a negative impact on some faith groups, older and disabled people*

#### **Mitigation and improvement**

Water metering is, again, intended to minimise water usage and demand. This assessment has revealed that implementation of this policy could have some negative consequences for some equality groups. For example, some faith groups, according to their religion, are required to wash several times a day and, therefore, have far higher water needs. The size of households is also a key factor and some ethnic groups with traditionally larger households may stand to suffer negative economic consequences of universal water metering.

There is also an issue for some disabled people, and indeed older people, who may need to bathe more than others due to a health condition or who are unable to take a shower, which is more water efficient, due to a physical impairment. These potential impacts will require careful consideration if water metering is recommended in the Borough.

## 4.5 Bio-diversity

### 4.5.1 Recreation areas and parks

#### **Positive impacts**

Expansion and careful management of natural habitats and greenfield areas play an important part in tackling climate change. Maintenance and improving recreational areas and parks form part of this strategy. Although beneficial to all of society, the space that is offered for leisure pursuits is considered particularly attractive to young people. Meanwhile, it was also mentioned that older people would be welcoming of more quiet areas in parks.

***More green space  
will benefit young  
and old people ...  
they should be  
encouraged to get  
involved with  
planning***

To maximise these potential benefits stakeholders suggested early engagement of both young and older people in park management and improvement plans. This would ensure that recreational areas suited their needs as far as possible. To the benefit of older people it would be preferable to have a system to control the use of bicycles within parks, limiting their use to designated areas so as to provide safe walking environments. In general, it was considered that park wardens would be welcomed by a range of equality groups to allay any safety concerns.

In addition to the above benefits, it is considered that involving young people in planning and park management would provide an education in bio-diversity issues and engender a spirit of collective care for the surrounding environment.

#### **4.5.2 Allotment land**

##### **Mitigation and improvement**

Allotment land is already protected in LBWF, however there are ways in which this action could be improved so as to benefit equality groups and realise community cohesion benefits. The joint management of allotments could be encouraged. This could increase inter-generational communication and working, to the benefit of both younger and older people and, indeed, all members of the community who choose to be involved.

Community allotments could further be supported by an inter-generational project to support the development of cooking skills amongst the younger generation who may be inexperienced in making meals from seasonal/locally grown food.

## 5 Concluding observations

This Chapter summarises the main findings of this EqIA, presents some of the over-arching messages and provides some recommendations for action based on the evidence contained within this report.

### 5.1 Findings and Climate Change Strategy recommendations

Based on the research undertaken for this assessment, the following Action Plan makes a number of suggestions. Where the proposed action in the middle column is incorporated into the Strategy, the recommendations on the right will help to ensure that equality of outcomes is maximised as far as is possible.

*Table 3 Action plan*

THEME	POSSIBLE ACTION	RECOMMENDATION
TRANSPORT	The promotion of school or work TRAVEL PLANS.	Reflect the need for safety of travel to be prioritised and encourage trips in groups. Include equality groups in planning to ensure personal circumstances and capabilities are reflected.
TRANSPORT	Promote and lobby for investment in the Borough's PUBLIC TRANSPORT.	Ensure reference is made to the need for investment in making public transport accessible for all residents in the Borough to overcome physical and language barriers. Lobby for the need for safety improvements, including the possible introduction of bus conductors and more station staff. Lobby for more staff training to make services more accessible to older, disabled and reduced mobility individuals. Stress the use of public transport during the daytime and when journeys are easily undertaken by a public mode. Stress the need to tackle historically held perceptions and highlight improvements.
TRANSPORT	REDUCING EMISSIONS	Develop an incentive, rather than penalty, programme to tackle vehicle emissions. Emphasise the need for cycling facilities, geographically close public transport links and the adequate provision of disabled bays where restrictive parking is used. Stress the need to retain parking at key local amenities.
TRANSPORT	Promote WALKING AND CYCLING through development of specific strategies.	Maintain the need for careful safety considerations. Promote the provision of more toilets and resting facilities on pedestrian routes. Suggest community cycle training programmes to integrate age and cultural groups and promote community cohesion.
ENERGY	Promoting RENEWABLE ENERGY	Assign responsibility to the LSP for raising awareness of energy efficiency measures and alternative energy and for providing guidance and information in accessible formats. Sign-posting residents towards possible financial help (subsidies / grants / loans) to extend access to domestic renewable energy systems.

THEME	POSSIBLE ACTION	RECOMMENDATION
ENERGY	Promoting LOW CARBON LIFESTYLES	Identify and promote stories and practices from older people and people from different ethnic backgrounds who have experience of low energy/low carbon lifestyles.
WASTE	INCREASING RECYCLING	Assign responsibility to the LSP for making available pictorial information to aid people for whom English is not their first language and those who have learning or reading difficulties.  Promote and extend assisted collections.  Promote recycling through schools for the benefit of young people and so they can educate their families at home.
WASTE	MINIMISATION	Learn from different cultures and generations on re-use and efficient utilisation/consumption of products.
WATER	WATER RECYCLING	Stress the need for awareness-raising to dispel any myths.
BIO-DIVERSITY	Management of GREEN SPACE	Suggest the inclusion of young and old people in the management and improvement of parks and recreational land to ensure it meets their needs and they learn to care for their surrounding environment.  Encourage community allotment / food growing schemes.

## 5.2 The main messages

***Where negative impacts are expected mitigating actions have been identified***

***Making a shift towards low carbon lifestyles will be a long-term process***

***Several ways in which to maximise equality of outcomes have been suggested***

- This EqIA has revealed some adverse impacts of the proposed Climate Change Strategy on equality groups within the Borough. Where disadvantages have been identified for one or more equality groups, in most cases these tend to be quite minor. In all cases, however, mitigating actions have been identified to redress any imbalance. It is also worth noting the range of positive impacts that have been identified through this study.
- Even though recent rises in fuel and food prices could accelerate movement towards greener lifestyles, a societal cultural shift towards lower carbon lifestyles is likely to require cultivating over the medium-long term. A variety of ‘carrot and stick’ approaches will be required to attain Borough objectives, however, each of these should recognise the specific concerns of equality groups, especially where potentially adverse consequences have been identified.
- The assessment has revealed several ways the Climate Change Strategy could be modified in order for it to fully take into account equalities considerations and maximise the equality of outcomes for the more vulnerable groups within LBWF’s society. Adherence to some of these suggestions would demonstrate a protection and celebration of the Borough’s diversity.

***There are opportunities to improve community cohesion***

***Engaging with young people represents an important step forward***

***LBWF Council has a critical forward role to play in ensuring the involvement of equality groups***

***Using the voluntary sector to reach out to equality groups***

- The Climate Change Strategy has the potential to open up many opportunities through which community cohesion could be strengthened, particularly through working with certain equality groups to learn from them. Responding to some of these would benefit the Borough overall, rather than just the equality groups within it. Some care must be taken in the deployment of the Strategy, however, not to aggravate any economic / class divides within the Borough. This EqIA has exposed some areas of risk in this regard.
- Young people stand to benefit from the actions which are proposed within the Strategy. There is also a consistent message about fully engaging young people to enthuse them about addressing climate change issues, thereby making it part of their every day lives and encouraging them to ‘educate’ others within the community.
- An overwhelming message was received about the need for the Council and the LSP to take a lead in ensuring equality groups within its borders are able to participate in, and benefit from, the execution of the Strategy to the same extent as everybody else. The LSP can take a lead through the provision of support, guidance and information they need. Messages need to be consistent, easy to consume and, critically, the Council must lead by example.

Appropriate mediums through which to disseminate information should be thought through. Whilst a non-complicated, clear website will be useful, some people may not be IT literate and may not have access to a computer. Leaflets may work for some, but there is cross section of people in the Borough, particularly those with disabilities or from non-English speaking ethnic backgrounds, for whom they will have no benefit.

It should be recognised that local authority does not have a ‘friendly face’ in the view of some equality groups. As such, a more universally effective way of reaching out to equality groups within the Borough could be through the voluntary sector; the Council and LSP could make more use of representative bodies, working with them to communicate guidance, advice or information. It was considered that adopting creative ways to engender partnerships to address climate change, rather than any form of dictatorial approach, would be most likely to realise results.

There would be sense in the LSP beginning to think about how to involve and consider equality groups as it develops future projects to support the Climate Change Strategy.

***Monitoring future  
effects on equality  
groups would be  
advisable***

- Finally, it is recommended that an annual performance review assessing the progress and impacts of the Climate Change Strategy from an equalities perspective should be undertaken. This could help to gauge whether anticipated impacts have been realised, whether appropriate mitigation measures have been taken and the extent to which they have been successful. It is critical that equality groups themselves are consulted during this process.

## Appendix A – Workshop invitees

*Table 4 Workshop invitees*

Age Concern
Ashiana (Women's Group)
Barnardo's Children's Rights
Black People's Mental Health Association
BME Alliance
Charis Christian Centre
Chingford Mosque
Disability Action
East London Out Project
Kiran Asian Women's Aid
LBWF Officers: <ul style="list-style-type: none"> <li>• Children's Services</li> <li>• Equalities and diversity</li> <li>• Green space</li> <li>• Procurement</li> <li>• Property</li> <li>• Public Realm</li> <li>• Sustainable Communities</li> <li>• Transportation</li> </ul>
MENCAP
Noor Ul Islam Mosque
Refugee Advice
Waltham Forest Faith Forum & Methodist Church
Walthamstow Citizens' Advice Bureau

## Appendix B – Equality impact assessment matrices

The following equality impact assessment matrices combine the findings of the study; they are organised under actions which have been proposed for the Climate Change Strategy. Where a particular equality strand is not featured in a matrix, this does not mean that it has not been considered. Rather it indicates that DISPROPORTIONATE positive or negative impacts have NOT been identified for this group. Grey shaded boxes indicate that the issue is not applicable to that particular equality group. Mitigating measures that were identified during the study have been included. Some ways in which equality of outcomes can be maximised are also featured, but a more in depth discussion of these can be found in Section 4.

*Table 5 Travel plans*

TRAVEL PLANS		Women	Ethnic minority groups	Young people	Older people	People with disabilities	Faith/ religious groups	Lesbians / gay men / bisexuals
POSITIVE IMPACTS	Will any of the equality groups be primary beneficiaries of the scheme?	N	N	Y	N	N	N	N
	In what ways will they benefit?			Can provide more travel choices. Can help feed into healthy living and tackle childhood obesity.				
	Will these benefits have a high, medium or low impact?			M				
NEGATIVE IMPACTS	Will any of the equality groups be negatively affected by the proposals?	Y	Y	Y	Y	Y	Y	Y
	How will particular groups be affected - what negative impacts could they experience?	May feel vulnerable when using non-motorised transport, especially when alone.			May feel vulnerable when using non-motorised transport, especially when alone. May not physically be able to participate in a travel plan scheme due to mobility and/or other impairment.		May feel vulnerable when using non-motorised transport, especially when alone.	
	Will these negative consequences have a high, medium or low impact?	L	L	L	M	M	L	L
	Is there any way in which the negative consequences could be mitigated / equality of impacts could be maximised?	Encouragement to travel in groups rather than alone, to tackle actual and perceived safety concerns. Organising institution could help to arrange this. Engaging equality groups within travel planning to ensure that the resulting plans reflect their specific issues and their capabilities.						

**Table 6 Promotion of and improvement to public transport**

PROMOTION OF AND IMPROVEMENT TO PUBLIC TRANSPORT		Women	Ethnic minority groups	Young people	Older people	People with disabilities	Faith/ religious groups	Lesbians / gay men / bisexuals
POSITIVE IMPACTS	Will any of the equality groups be primary beneficiaries of the scheme?	N	N	Y	Y	Y	N	N
	In what ways will they benefit?			Young, old and disabled people tend to have a higher reliance on public transport due to their inability to drive or a lack of resources to own their own vehicle. There are economic gains for this group as travel on most public transport modes is free.				
	Will these benefits have a high, medium or low impact?			M	M	M		
NEGATIVE IMPACTS	Will any of the equality groups be negatively affected by the proposals?	Y	Y	Y	Y	Y	Y	Y
	How will particular groups be affected - what negative impacts could they experience?	Women may have safety concerns about using public transport, especially alone or at night.	For ethnic minorities for whom English is not their first language, navigating the public transport system may be difficult. This could affect confidence in using public modes. Ethnic minority groups may have safety concerns about using public transport, especially alone or at night. Larger families tend to be more prevalent amongst ethnic groups. As such the cost of using public transport may be prohibitive.	There may be safety concerns amongst young people about using public transport alone or at night.	Older people with mobility problems can find it difficult to use public transport. Attitudes of staff and a lack of training dissuade older people from using public transport.	Public transport can be inaccessible to many people with disabilities; promotion of public transport without accessibility improvements would not be practical or beneficial to disabled residents. People with disabilities may share safety concerns about using public transport. Attitudes of staff and a lack of training dissuade disabled people from using public transport.	Faith groups may have safety concerns about using public transport, especially at night or alone. Amongst some faith groups it is more of a tradition to have large families. As such the costs of using public transport may be prohibitive.	As with other equality groups, the lesbian, gay and bisexual may have some safety concerns about using public transport, especially at night or when alone.

<b>PROMOTION OF AND IMPROVEMENT TO PUBLIC TRANSPORT</b>		<b>Women</b>	<b>Ethnic minority groups</b>	<b>Young people</b>	<b>Older people</b>	<b>People with disabilities</b>	<b>Faith/ religious groups</b>	<b>Lesbians / gay men / bisexuals</b>
	Will these negative consequences have a high, medium or low impact?	L	M	L	M	H	L	L
	Is there any way in which the negative consequences could be mitigated?	Lobbying for investment in improvements to public transport to address safety concerns; also for and inaccessibility improvements for disabled, older people and those for whom English is not their first language. Prior to adequate improvements, stress public transport for daytime use or when convenient to allay safety concerns. Take steps to address historically negative attitudes towards public transport amongst certain equality groups, particularly people with disabilities.						

**Table 7 Reducing emissions and discouraging car use**

REDUCING EMISSIONS AND DISCOURAGING CAR USE		Ethnic minority groups	Young people	Older people	People with disabilities	Faith/ religious groups
POSITIVE IMPACTS	Will any of the equality groups be primary beneficiaries of the scheme?	N	Y	Y	Y	N
	In what ways will they benefit?		Fewer cars on the road is likely to lead to fewer accidents and deaths. Reducing emissions could be particularly beneficial to these equality groups, as they are more prone to suffer from respiratory illnesses such as asthma.	Reducing emissions could be particularly beneficial to these equality groups, as they are more prone to suffer from respiratory illnesses such as asthma.		
	Will these benefits have a high, medium or low impact?		M	M	M	
NEGATIVE IMPACTS	Will any of the equality groups be negatively affected by the proposals?	Y	N	Y	Y	Y
	How will particular groups be affected - what negative impacts could they experience?	If penalties are introduced to tackle higher emissions vehicles this could hit people with large families, who need bigger cars. Large families tend to be more prevalent amongst some ethnic minority groups.		Restrictive car parking policies could impact on older people who can rely on the accessibility and availability of parking bays due to mobility difficulties. This is especially the case at key local amenities.	Penalties for higher emission vehicles may impact upon some disabled people who may have to rely on a certain size of vehicle for carriage of a wheelchair or other support equipment. Restrictive car parking policies could impact on people with disabilities who can rely on the accessibility and availability of parking bays due to mobility difficulties.	If penalties are introduced to tackle higher emissions vehicles this could hit people with large families, who need bigger cars. Large families tend to be more prevalent amongst some faith minority groups.
	Will these negative consequences have a high, medium or low impact?	M		M	M	M
	Is there any way in which the negative consequences could be mitigated?	Develop a package of incentives, rather than penalties to help decrease the number of higher emission vehicles.		Develop a package of incentives, rather than penalties to help decrease the number of higher emission vehicles. Where car parking is restricted ensure the adequate provision of cycle racks and disabled bays, and ensure that effective public transport links are in close proximity.		

**Table 8 Cycling and walking strategies**

CYCLING AND WALKING STRATEGIES		Women	Ethnic minority groups	Young people	Older people	People with disabilities	
POSITIVE IMPACTS	Will any of the equality groups be primary beneficiaries of the scheme?	Y	N	Y	N	N	
	In what ways will they benefit?	Encouraging the use of these modes could raise awareness using modes of transport, other than the car, to do the school run. This could be more economical and less stressful.		Increasing opportunities for walking and cycling was seen to have benefits for young people, due to their reliance on these modes. Such strategies would also help tackle childhood obesity and encourage healthy living.			
	Will these benefits have a high, medium or low impact?	M		M			
NEGATIVE IMPACTS	Will any of the equality groups be negatively affected by the proposals?	Y	Y	Y	Y	Y	
	How will particular groups be affected - what negative impacts could they experience?	There may be safety concerns amongst these equality groups about using non-motorised forms of transport, especially when alone or at night.				There may be safety concerns amongst these equality groups about using non-motorised forms of transport, especially when alone or at night. Walking and cycling may not actually be a practical possibility for older or disabled people.	
	Will these negative consequences have a high, medium or low impact?	L	L	L	L	L	
	Is there any way in which the negative consequences could be mitigated?	Walking strategies should be accompanied by statements about the desirability of walking to reduce real and safety concerns. Ensure the adequate provision of pedestrian facilities such toilets and benches on pedestrian routes. There is an opportunity to improve community cohesion within development of cycle strategies by initiating community cycle training, which could bring together all sections of the community.					

**Table 9 Alternative energy and micro-generation**

ALTERNATIVE ENERGY AND MICRO-GENERATION		Ethnic minority groups	Older people	People with disabilities	Faith/ religious groups
POSITIVE IMPACTS	Will any of the equality groups be primary beneficiaries of the scheme?	Y	Y	Y	Y
	In what ways will they benefit?	Likely to be welcomed by ethnic minority who are from backgrounds that makes more efficient use of energy. In addition, as these groups traditionally have larger families, they could benefit significantly from a reduction in future energy costs.	Older people and people with disabilities are amongst those most susceptible to fuel poverty, often due to their low incomes and/or need to use more fuel for heating or lighting due to their physical condition.		Certain faith groups traditionally have larger families, therefore could benefit significantly from a reduction in future energy costs.
	Will these benefits have a high, medium or low impact?	M	M	M	M
NEGATIVE IMPACTS	Will any of the equality groups be negatively affected by the proposals?	Y	Y	Y	N
	How will particular groups be affected - what negative impacts could they experience?	For those for whom English is not their first language, the terminology and technology involved in a switch to micro-generation may act as a disincentive to switch.	For older people, the terminology and technology involved in a switch to micro-generation may act as a disincentive to switch. Those most at risk from fuel poverty will find it more difficult to find the funds required to switch their energy supply.	Those most at risk from fuel poverty will find it more difficult to find the funds required to switch their energy supply.	
	Will these negative consequences have a high, medium or low impact?	L	L	L	

ALTERNATIVE ENERGY AND MICRO-GENERATION		Ethnic minority groups	Older people	People with disabilities	Faith/ religious groups
	Is there any way in which the negative consequences could be mitigated?	<p>The Council /LSP should take a lead on raising awareness and promoting energy efficiency measures and the cost-effectiveness of micro-generation. Information should be available to a variety of languages and formats. This will help to develop a better understanding of the concept.</p> <p>An opportunity to learn from ethnic minority groups was suggested; their various cultural experiences and backgrounds could highlight ways in which to lead lower carbon lifestyles.</p>	<p>The Council/LSP should take a lead in raising awareness and promoting energy efficiency measures and the cost-effectiveness of micro-generation. Information should be available in a variety of languages and formats. This will help to develop a better understanding of the concept.</p> <p>Grants or subsidies to help with installation costs would especially benefit those for whom fuel poverty tends to be a problem.</p> <p>An opportunity to learn from older people was identified; their experiences from periods of war or rationing could help to expose less energy-rich lifestyles.</p>	<p>The Council/LSP should take a lead in awareness raising role to promote energy efficiency measures and the cost-effectiveness of micro-generation. Information should be available in a variety of languages and formats. This will help to develop a better understanding of the concept.</p> <p>Grants or subsidies to help with installation costs would especially benefit those for whom fuel poverty tends to be a problem.</p>	

**Table 10 Recycling and waste minimisation**

RECYCLING AND WASTE MINIMISATION		Ethnic minority groups	Young people	Older people	People with disabilities	Faith/ religious groups
POSITIVE IMPACTS	Will any of the equality groups be primary beneficiaries of the scheme?	Y	N	N	N	N
	In what ways will they benefit?	Waste minimisation is likely to be welcomed by some BME communities as they may originally from backgrounds that waste less and maximise the use of resources.				
	Will these benefits have a high, medium or low impact?	L				
NEGATIVE IMPACTS	Will any of the equality groups be negatively affected by the proposals?	Y	N	Y	Y	Y
	How will particular groups be affected - what negative impacts could they experience?	Those for whom English is not their first language often experience difficulties in understanding Borough recycling instructions. It was highlighted that if a 'maximum' refuse collection was introduced with corresponding penalties, this would disproportionately impact upon larger families – more prevalent amongst certain ethnic minority communities.		Older people and those with disabilities can often experience difficulties in recycling due to mobility difficulties or another impairment. The recycling boxes can be difficult to lift/move. This can especially be in the case when such individuals live in a flat or an apartment complex where doorstep recycling is not guaranteed.	It was highlighted that if a 'maximum' refuse collection was introduced with corresponding penalties, this would disproportionately impact upon larger families – more prevalent amongst certain faith groups.	
	Will these negative consequences have a high, medium or low impact?	M		M	M	M

RECYCLING AND WASTE MINIMISATION		Ethnic minority groups	Young people	Older people	People with disabilities	Faith/ religious groups
	Is there any way in which the negative consequences could be mitigated?	The Council/LSP should take the lead on providing recycling guidelines in common languages across the Borough and include the use of easy to understand images or pictures. Translated material should also be provided in housing packs for Council tenants. Ethnic minority groups could be consulted so that any waste minimisation customs could be shared.	Recycling initiatives should be mainstreamed into school activities to educate young people and encourage young people to educate their families at home.	LBWF's assisted recycling scheme should be extended to all those that need it. Information on this should be readily available.		

Table 11 Water metering

WATER METERING		Ethnic minority groups	Older people	People with disabilities	Faith/ religious groups
POSITIVE IMPACTS	Will any of the equality groups be primary beneficiaries of the scheme?	N	N	N	N
	In what ways will they benefit?				
	Will these benefits have a high, medium or low impact?				
NEGATIVE IMPACTS	Will any of the equality groups be negatively affected by the proposals?	Y	Y	Y	Y
	How will particular groups be affected - what negative impacts could they experience?	Some ethnic minority groups traditionally have larger families so have higher demand for water. As such, metering would be likely to increase costs for these families and, therefore, a negative impact.	Older people and people with disabilities may be required to bathe more often and also, due to a physical impairment, may not be able to take a shower, which would be more water efficient. As such, water metering could impact negatively upon these groups.		Individuals from some faith groups are required to wash several times a day due to their religion. Water metering, therefore, would also impact negatively on these groups. In addition, some faith groups traditionally have larger families so have higher demand for water. As such, metering would be likely to increase costs for these families, and therefore a negative impact.
	Will these negative consequences have a high, medium or low impact?	M	M	M	M
	Is there any way in which the negative consequences could be mitigated?	Provision of information about how to be water-wise, plus the use of grey water.			

Table 12 Bio-diversity

BIO-DIVERSITY		Ethnic minority groups	Young people	Older people	People with disabilities
POSITIVE IMPACTS	Will any of the equality groups be primary beneficiaries of the scheme?	Y	Y	Y	Y
	In what ways will they benefit?	Creating spaces where a diversity of people can encounter each other is good for promoting good race relations and for general cohesion.	Increasing the amount of parks and recreational space that are available in the Borough will be particularly beneficial to young people for their leisure use.	Older people will benefit from the increases in the opportunities to enjoy safe/quiet outside space.	Being outdoors can be positive in terms of mental health and well-being.
	Will these benefits have a high, medium or low impact?	L	M	L	L
NEGATIVE IMPACTS	Will any of the equality groups be negatively affected by the proposals?	N	N	N	N
	How will particular groups be affected - what negative impacts could they experience?				
	Will these negative consequences have a high, medium or low impact?				
	Is there any way in which the negative consequences could be mitigated?	Involving equality groups in park planning and management will help to ensure their specific concerns are addressed.			