



**STATE OF THE
ENVIRONMENT
REPORT 2011**

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Getting Better



Staying The Same



Getting Worse



Not Enough Data

Forward



Councillor Perry, chair of the environment and climate change partnership - cabinet member for planning, conservation & climate

Croydon's Vision

By 2040, Croydon's vision is to be one of the most enterprising and sustainable boroughs in the UK. This ambitious aspiration cannot be achieved by one organization acting in isolation, but by a co-ordinated programme of activity from stakeholders across the borough. The Environment and Climate Change Partnership (ECCP) is one of the theme partnerships within the Local Strategic Partnership (LSP). The ECCP comprises environmental stakeholders from the borough including

Transport for London, the Energy Saving Trust, local businesses, schools and representatives from the faith and voluntary sector. The partnership works to deliver on the key environmental priorities for Croydon, namely:

- Effective communications and marketing for individual behaviour change
- Tackling climate change by reducing CO2 emissions, including domestic emissions
- Facilitating a modal shift to sustainable transport
- Effective management of our natural resources to ensure climate resilience
- Addressing waste and improving environmental quality
- Supporting the low carbon economy

The role of the partnership is to ensure that local activity to achieve the above priorities is co-ordinated at a strategic level and brought together as part of a single integrated programme.

This document has not only been produced for partnership members, but for everyone who works, lives or visits the borough and is keen to learn more about its environment. We all have a part to play in securing a sustainable future for Croydon and ensuring a better quality of life for future generations.

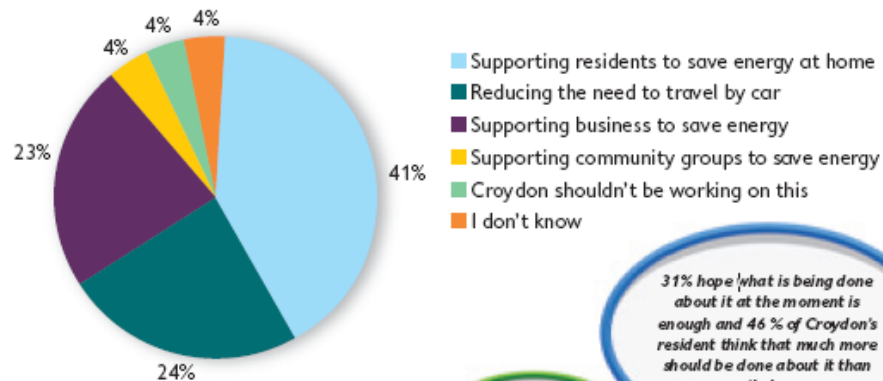
Croydon's Environment and Climate Change Partnership (ECCP) has produced this State of the Environment report in order to better understand the key environmental trends for the borough. It gives a snapshot of local environmental quality to enable the partnership to target improvement work and establish the effectiveness of key strategy and policy documents, including the Climate Change Mitigation and Adaptation Action Plans.

Introduction

What Croydon Residents Think?

TalkAbout Croydon is a panel of 1,500 representative residents who provide the council with reliable feedback on important Croydon issues.

In which areas do you feel Croydon should concentrate its efforts in tackling climate change? (Talkabout Survey Croydon June 2010)



About the State of the Environment Report

This document illustrates Croydon's environmental performance using a summary of environmental data. The indicators have been selected to reflect the priorities of Croydon's Environment and Climate Change Partnership and to give a good indication of where the environment is successfully being protected or enhanced and where more work needs to be done. The information is displayed using a graph or map and a summary description of the trends shown. Case studies are used to give more detail about specific areas of work.

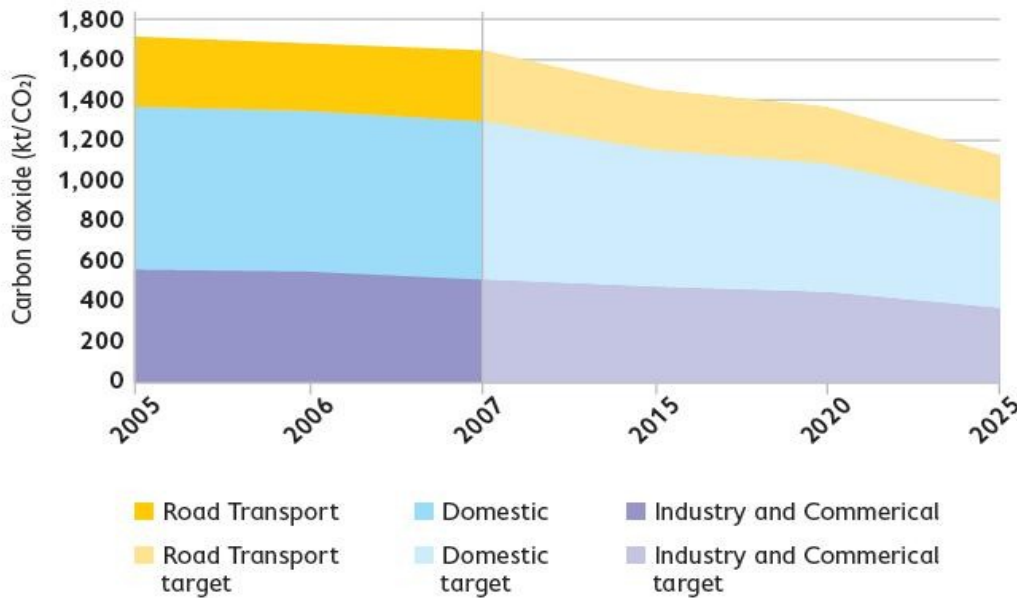
There is common scientific consensus that the climate is changing and this has the potential to pose serious global risks to economic activity and standards of living, it is essential for local authorities and communities to act now to reduce carbon emissions if these risks are to be minimized. The cost of mitigation action now is small in comparison to the cost the impact of climate change will incur if action is delayed. The financial gain from reducing waste, in particular wasted energy, is also a key consideration during these times of economic downturn. For example, domestic energy efficiency programmes introduced in 2005 are enabling local residents to save over £1.4m annually in heating bills¹.

Although the focus of this document is on climate change mitigation and adaptation, its scope is wider than that as it covers areas such as local air quality and access to green space, which have direct links to today's quality of life and the health of Croydon's residents. This report also highlights some significant links between climate change mitigation and adaptation, quality of life, health and financial savings.

This document has been designed for both the partnership and the wider community and will be made accessible online and available in hard copy at libraries and Access Croydon. The partnership would welcome your views and comments:
sustainability@croydon.gov.uk / tel: 020 8760 5791

Croydon's Carbon and Ecological Footprint

Croydon CO₂ emissions 2005-2007 and targets to 2005⁵ Source DECC, 2007



CO₂ Emissions

According to data provided by the Department of Energy and Climate Change (DECC)³, there has been an overall 4.2% decrease of CO₂ emissions between 2005 and 2007. This equates to a reduction in CO₂ emissions in the domestic sector of 2.24%, a decrease of 8.57% in the industrial and commercial sector, and a decrease of 1.43% in the transport sector.

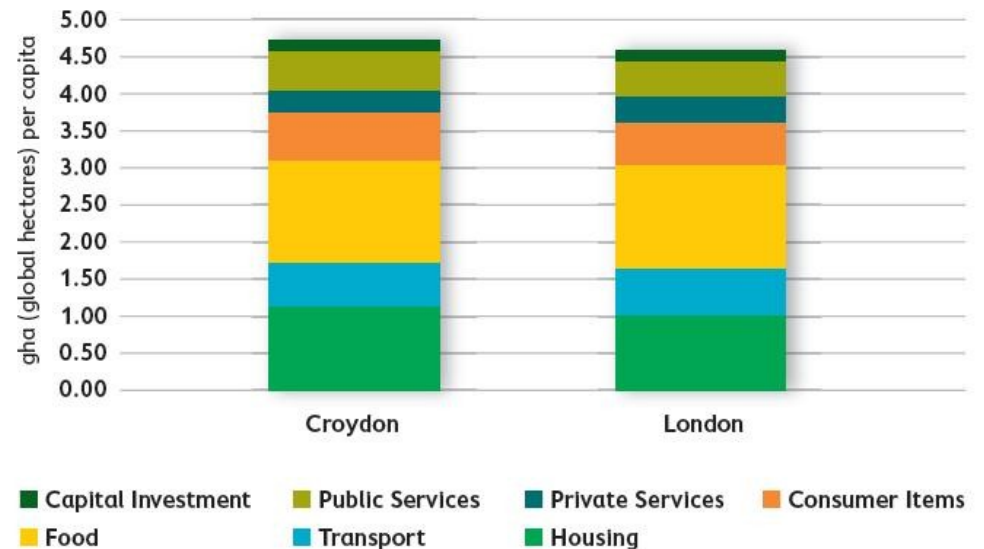
The carbon footprint of Croydon is 11.76 tonnes CO₂ per capita (2006). This carbon footprint is higher than the London average of 11.38 tonnes CO₂ per capita. Energy consumption in Croydon is amongst the highest in London and ranks 5th highest out of all London boroughs (Environment Agency 2010).

Ecological Footprint

The ecological footprint is a measure of human demand on the Earth's ecosystems. The ecological footprint of Croydon is 4.69 global hectares per capita (2006⁴). This footprint is higher than the overall London footprint of 4.54. It is 60% higher than the global bio-capacity of 1.89 hectares per capita – which is the amount per person when divided equally between the global population.

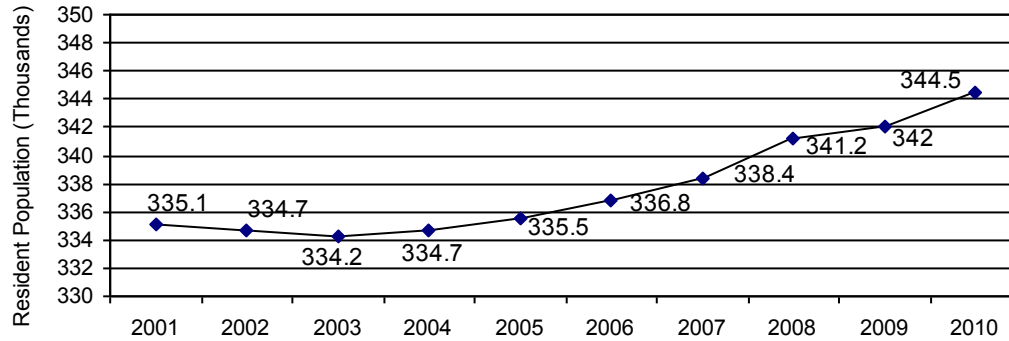
The primary contributors to this footprint are food and housing, accounting for 29% and 23% respectively. This is consistent with London figures. The main contributors in the food sector are fruit and vegetables, and catering services, and for housing it is mainly due to domestic fuel use.

Ecological footprint sector in Croydon and London 2006. Source SEI



A Growing Population

Croydon's Population 2001-2010



What does this graph show?

Population growth

In June 2010 Croydon had an estimated population of 344,500. Population has increased steadily since 2003 and Croydon today has the second largest population of all London boroughs. Population increases in the borough have been driven by longer lives and increasing birth rates rather than migration.

As its population continues to grow, Croydon will also consume more resources.

Population density

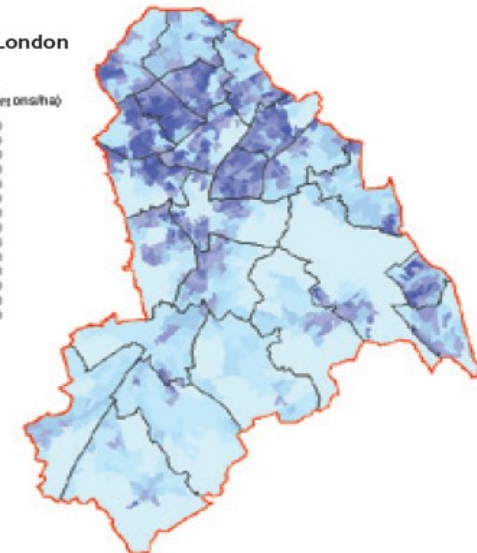
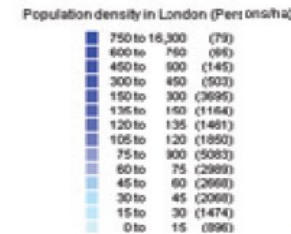
Population density in Croydon is 39.6 people per hectare. The highest population densities are in the north and the west of the borough, with a pocket of high density in New Addington and Fieldway in the east of the borough.

About Croydon

Croydon covers 8,662 hectares including 2,770 hectares of green belt land and is one of the largest boroughs in London. Croydon is an outer London borough bordering Surrey to the south and the boroughs of Lambeth, Lewisham and Southwark to the north, and it is London's southern-most borough. The borough has London's second largest population and it is the ninth largest unitary authority in the country. It is one of London's biggest local retail and commercial centres, with good rail, tram and road links, more than 120 parks and open spaces and some of London's most expensive housing.

Large parts of the borough also have inner-city characteristics. There are areas of affluence and at the same time Croydon has been eligible for Neighbourhood Renewal Funding (NRF) for the past seven years due to severe pockets of deprivation - mostly in the north of the borough and in two wards in the east, New Addington and Fieldway. About a quarter of children in Croydon live in poverty. Black and Minority Ethnic (BME) communities comprise 36% of Croydon residents.

Population density in Croydon & London





Chapter 1

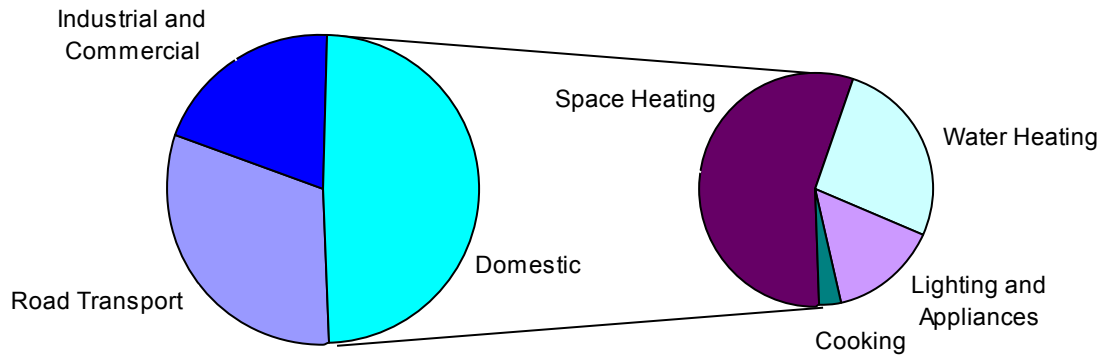
Reducing CO₂ Emissions from our Homes

1 Summary: Reducing CO₂ Emissions from our Homes



Improving: Croydon is taking proper initiatives to decrease CO₂ emissions from homes

Proportional Distribution of CO₂ Emissions by Sector and Domestic Housing



What does this graph show?

The domestic sector contributes 49% of carbon emissions in Croydon, the highest of all sectors.

According to London-wide data (Mayor of London 2010a) the vast majority of energy consumed in a home, just over 80%, is used either for space heating or heating water. The remainder is split between lighting and appliances, which account for 15% of CO₂ emissions, and cooking.

Croydon's Plan

The Mayor of London's vision is that by 2030, all of London's existing homes will be retrofitted with energy efficiency measures and have the potential to generate energy, Londoners will use energy more efficiently and fuel poverty will be eradicated.

What has been achieved so far by the partnership:

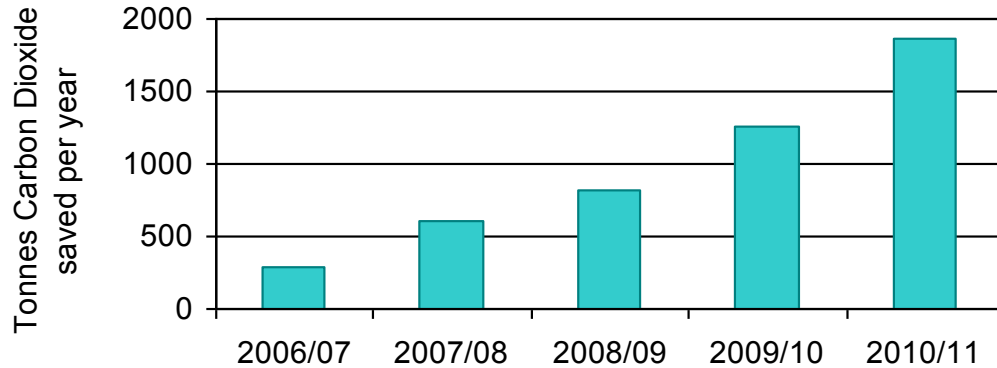
- 100% of all suitable existing council homes have cavity wall insulation and at least 100mm of loft insulation.
- New council homes are built to the highest environmental standards.
- A total of nearly 7,000 installations of energy efficiency measures have been carried out in Croydon's households since 2006.
- These installations provide annual energy bill savings of approximately £455,000 to householders
- The Coldbusters loan scheme and other grant schemes are specifically aimed at installing energy efficient heating and insulation measures in private sector fuel poor properties.
- Croydon was one of the first local authorities to require major housing developments to incorporate renewable energy technologies to reduce site CO₂ emissions by 10%.

2 Private Housing



Improving: The total CO₂ savings have increased

Carbon Dioxide Savings from Home Insulation



What does this graph show?

This is a graph showing cumulative CO₂ savings obtained through fitting energy efficiency measures to houses in Croydon between 2005/06 and 2010/11. The data includes loft and cavity wall insulation installed through partnerships with other organizations including British Gas, Creative Environmental Networks (CEN) and Heatseekers, as well as measures installed by the Council in its own housing stock.

The CO₂ and energy bill savings from measures installed in 2010/11 were greater than in any other previous year, although there is a long way to go before the borough's housing stock can be considered truly efficient in terms of its energy consumption.

The Energy Saving Trust Advice Centre London offers free, personalized and impartial advice on energy efficiency, home energy improvement and associated grants, water, waste and personal transport.

For more information visit the Energy Saving Trust website at www.energysavingtrust.org.uk or call free on 0800 512 012.

RE:NEW and the Home Energy Efficiency Programme demonstration

The forthcoming year will see the delivery of the RE:NEW programme in Norbury. RE:NEW is an area-based programme to provide energy efficiency advice to householders, install simple energy saving measures and provide referrals to other energy efficiency schemes where appropriate. RE:NEW is funded by the London Development Agency and will aim to treat over 1,500 homes in the area, helping to save residents money on energy bills and reduce fuel poverty.

At the same time, Croydon Council has partnered with Heatseekers in the south of the borough to identify homes with high levels of heat loss using unique thermal imaging vehicles. Where appropriate, Heatseekers can provide installations of affordable loft and cavity wall insulation.

For further information, contact Heatseekers free on 0800 111 4968.

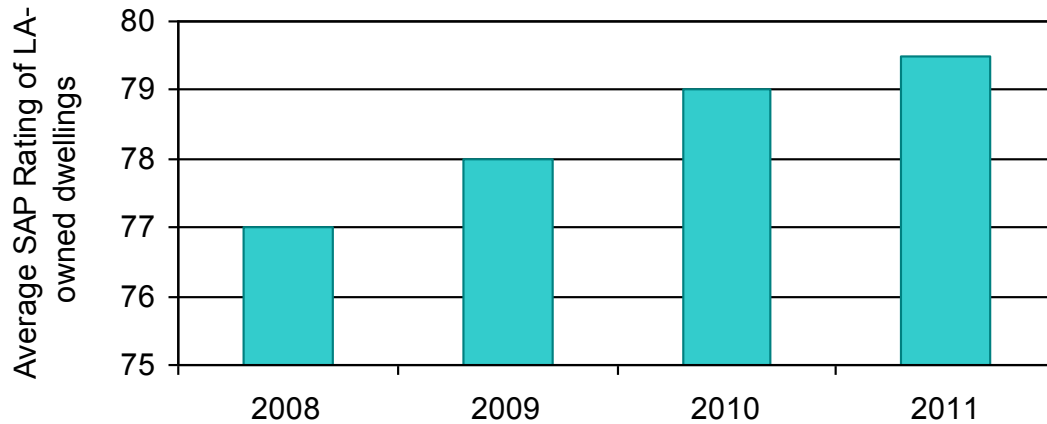


3 Council Run Social Housing



Improving: More homes are becoming more energy efficient

Energy efficiency of Croydon local authority homes



What does this graph show?

SAP ratings measure the energy efficiency of homes. The higher the rating, the more energy efficient are the homes. As of 1st April 2011 Croydon Council's housing stock has an average SAP rating of 79.5. This is one of the highest in London and in the top quartile for the country.

What has Croydon Achieved so Far?

Croydon's drive to cut energy wastage of its housing stock started with its first Energy Strategy in 1995. Today:

- 100% of all suitable homes have cavity wall insulation and at least 100mm of loft insulation
- 99% have a modern form of space heating (107 properties out of a stock of 14,000 do not yet have central heating)
- 88% double glazing

The Council's target is to carry on increasing the average SAP rating by up to 1 point each year.



4 Environmental Impact of Social Housing



Staying the Same: No changes have occurred between 2010 and 2011

Council-Run Social Housing

Croydon has started a programme of building new council homes. We are building all our new homes to a minimum standard of Level 4 Code for Sustainable Homes (CSH). This target has been set above the current government recommendations to build to Level 3.

The Code for Sustainable Homes (CSH) is the national standard for the sustainable design and construction of new homes. The CSH aims to reduce our carbon emissions and create homes that are more sustainable.

During the first phase Croydon Council has built 32 large family eco-friendly homes to Eco Home excellent standard. As part of the second phase 70 new homes will be delivered, of which 23 will achieve CSH Level 5. We handed over 31 of these new homes by March 2011. These homes will include features such as:

- On-site renewable energy sources meeting 15% of domestic energy needs (which will increase in later phases)
- Solar thermal panels to generate hot water
- Solar PV panels to generate electricity
- Whole-house heat recovery ventilation system
- 75% of lighting will be dedicated low energy fittings
- Water saving taps and showers
- Water butts to recycle water
- Bird boxes and bat boxes to encourage wildlife

Some homes are provided with an energy monitoring system.

This system will provide Croydon Council with feedback on how well your home is performing and help the council decide what features should be included in future developments.

Solar Water Heating on Council Houses

Solar water heating uses solar radiation to heat water via solar panels mounted onto the roof (usually south-facing). As water is pumped through them it is heated by the sun.

A typical solar water heating installation will provide around 50% of a property's annual hot water requirements, with up to 100% of hot water in the summer months. Solar thermal panels to heat hot water have been fitted in all 13 homes at Sumner Gardens and in 19 homes in New Addington, which was part of the first phase. Solar thermal panels have also been incorporated into some of the new homes in our second phase.

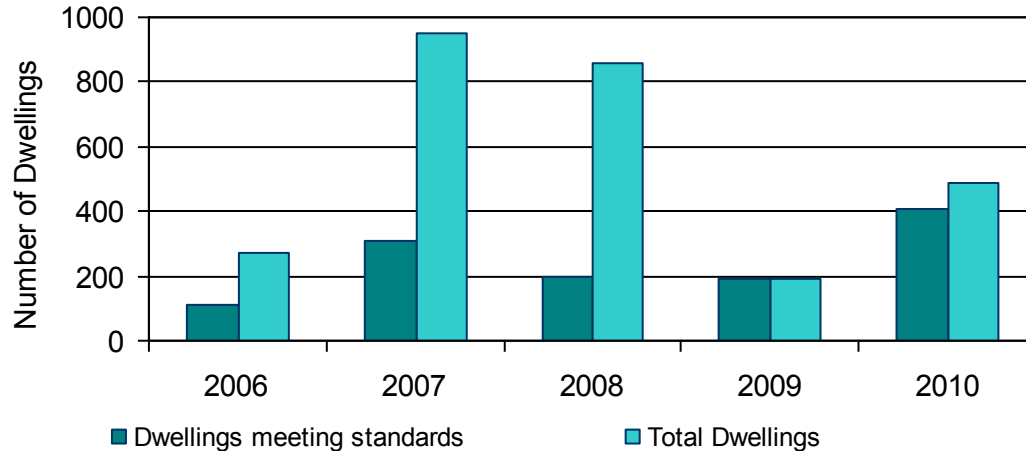


5 Environmental Impact of Private Housing



Improving: The percentage of developments meeting standard has improved

New Developments Achieving Ecohomes Very Good or CSH Level 3



What does this graph show?

In 2010 84% of major housing completions (10 units or more) achieved BREEAM Ecohomes Very Good or Code for Sustainable Homes (CSH) Level 3. This is slightly down on the previous year, although this can be mostly explained by the fact that a number of large developments completed during this time received planning permission before the requirements entered into force.

Croydon was one of the first local authorities to require major housing developments to incorporate renewable energy technologies to reduce site CO₂ emissions by 10% and the first to implement this policy for major non-residential developments. New housing is expected to meet high environmental standards in advance of the national requirement for zero carbon homes from 2016.

Flagship Private Developments

BREEAM (BRE Environmental Assessment Method) is the leading and most widely used environmental assessment method for buildings.

A development in Sanderstead Road, Croydon was given national recognition by scooping one of the top prizes at the BREEAM sustainable building awards 2010. Key environmental features that led to the award include:

- A well located development site with good access to local amenities and public transport
- Use of sustainable drainage techniques
- Energy efficient internal and external lighting
- Solar photovoltaic panels (BREEAM 2010) Homes designed to high environmental standards can become very desirable properties due to the quality of the building and financial savings from reduced utility bills. In a house designed to CSH Level 4, energy bills can be reduced by up 30% or more.





Chapter 2

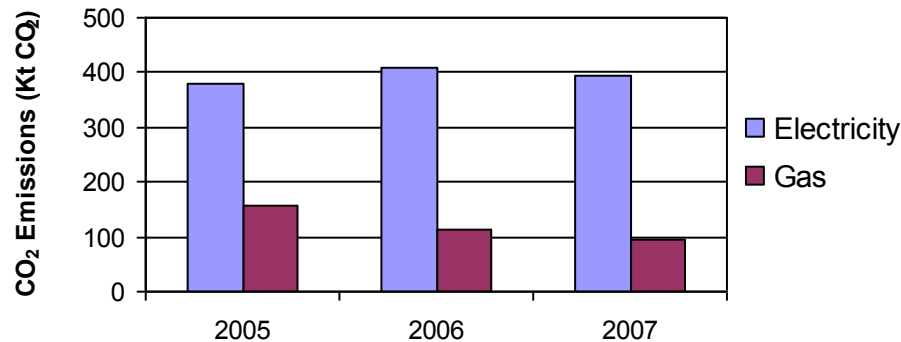
The Low Carbon Economy

6 Summary: The Low Carbon Economy

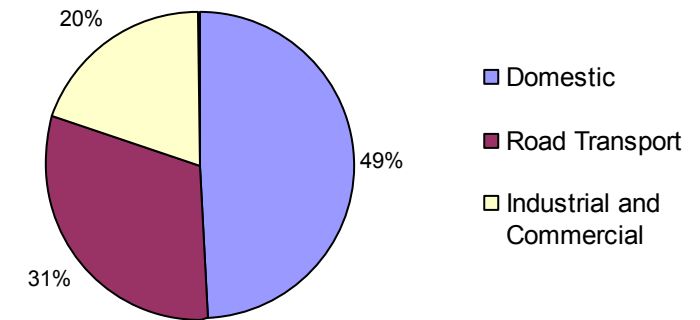


Staying the Same: Overall, carbon reduction in businesses and non-residential homes have stayed the same

CO₂ Emissions from Industry/Commercial Sector



CO₂ Emissions from Industry and the Commercial Sector



What do these graphs show?

According to the most recent available data, the industry and commercial sector constitutes 20% of Croydon's CO₂ emissions.

The majority of these emissions are from commercial electricity use. Gas use in industry and commerce has nearly halved between 2005 and 2007, however electricity use has remained high.

It has been estimated that moves towards a low carbon economy offer London businesses potential opportunities of up to £3.7 billion a year (GLA 2010).

The Croydon metropolitan centre is one of the most significant business, commercial, leisure and entertainment centres in the south east, containing 762,000 m² of retail space and with a GDP of about £2.5 billion, attracting over 140,000 workers and home to 20 "blue-chip" companies.

Croydon has been identified by central government as a growth borough and has been earmarked as the main driver for growth in south London in the period up to 2031. A key challenge will be decoupling economic growth from increased energy demand and associated carbon emissions.

What has Croydon achieved so far?

• CO₂ emission reductions from council operations

A total of over 2,500 tonnes of CO₂ and £320,000 were saved from 2005 to 2010. In 2010/11 we completed four energy efficiency projects resulting in a total annual financial saving of £47,019 and carbon emissions reduction of 312tCO₂/year.

• CO₂ emission reductions from non residential buildings

Major developments in Croydon are expected to meet high sustainable construction standards, including a requirement to achieve a 10% reduction in site CO₂ emissions through the installation of renewable or low carbon technologies on site.

• Working towards sustainable schools

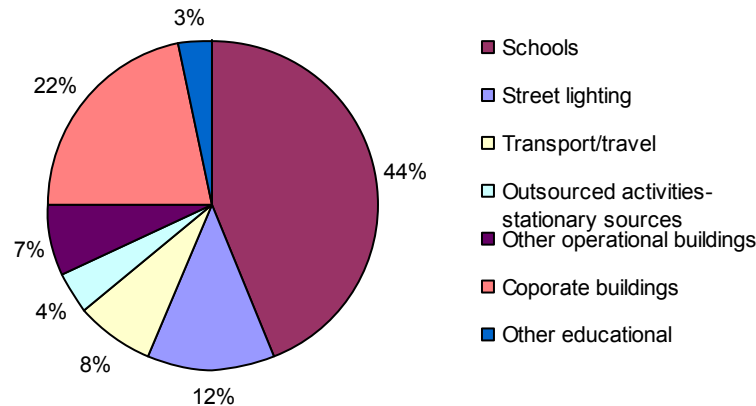
The majority of CO₂ emissions from council operations (53%) comes from the schools sector. Schools in Croydon were saved 2,600 tCO₂ from 2005 to 2010 and energy and through energy efficiency installations.

7 CO₂ Emissions from Croydon Council Operations



Not enough data to determine a trend

Breakdown of Croydon Council CO₂ emissions by category (2009/10 NI 185 data, Croydon sustainable development services)



Carbon Management Energy Efficiency Programme (CMEEP) 2010-2015

The total CO₂ emissions for the year 2009/10 from energy use in the Council's buildings, travel, street lighting and some outsourced activities is 45,625 tCO₂. Building energy use i.e. electricity, gas and oil, accounts for 92% of the total carbon emissions while transport/travel (staff business travel at work and commercial fleet etc) is 8% of the total CO₂ emissions. Schools are the largest contributors to the council's carbon emissions with 44% share of the total carbon footprint.

In October 2010, the Cabinet approved the Carbon Management Energy Efficiency Programme (CMEEP) to achieve a carbon reduction target of 25% by 2015 compared to 2009/10 baseline. The scope of the CMEEP includes carbon emissions from the council's own operations; corporate buildings energy use (including schools), street lighting, transport and emissions from outsourced services (Leisure, Parks, IT etc.)

Full implementation of this programme will result in 25% reduction in the council's carbon footprint and estimated financial savings of £2.16 million per year in energy bills.

Carbon Reduction and Energy Efficiency Projects

The CMEEP is a live programme, projects will be added as they are identified and it will be reviewed annually by CMT and Cabinet to track progress against targets. Ongoing Programme management will be via the CMEEP Board. The projects under this programme will be delivered in three distinct streams:

Stream 1 – Small scale energy efficiency projects with payback of up to 5 years

Stream 2 – Large scale energy efficiency projects undertaken through the RE:FIT scheme [large scale investment in energy efficiency]

Stream 3 – Projects for which no additional financing is required under this programme but will contribute towards reducing council's carbon footprint e.g. property rationalisation etc

What the Council is Doing

In 2010/11 we completed four energy efficiency projects resulting in a total annual financial saving of £47,019 and carbon emissions reduction of 312tCO₂/year. This means that in the last financial year we have achieved approximately 1% of the overall target. All these projects were funded by the Local Authority Energy Finance [LAEF] loan scheme with a maximum pay back period of 5 years or less.

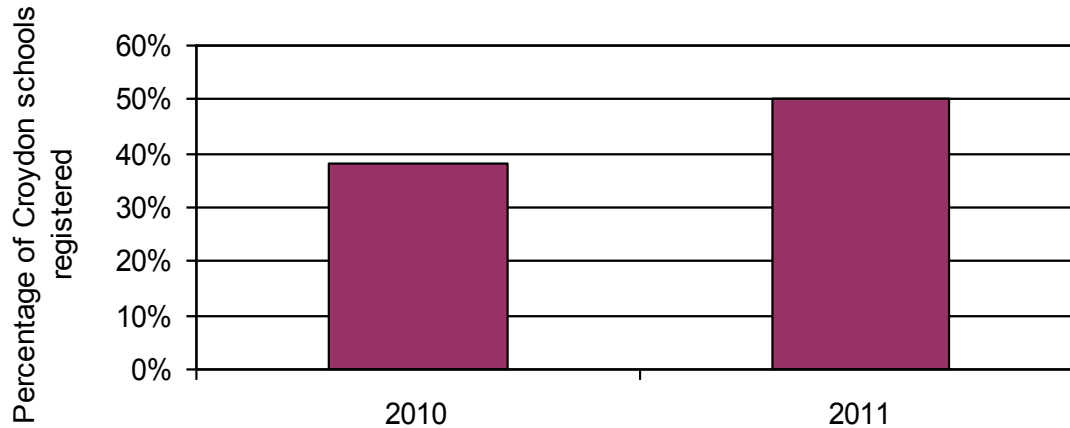
We have already conducted energy audits in 6 Croydon schools and one corporate site and will be looking at the recommendations of those audits to implement energy efficiency projects funded by the Local Authority Energy Finance [LAEF] loan scheme. In order to achieve the over all 25% target, this year we will also be looking at the technical and financial feasibility of a large scale energy efficiency scheme under the LDA supported mechanism called 'REFIT'

8 Sustainable Schools



Improving: The percentage of registered schools has increased

Schools registered on the Eco-Schools scheme



What does this graph show?

50% of schools in Croydon are registered as part of the Eco-schools programme. This is an increase from 38% last year and this now means is doing better than the national average (over 40% of schools in England are registered). Eco-schools is an international award programme that guides schools on their sustainable journey, providing a framework to help embed these principles into the heart of school life and puts students at the forefront of becoming sustainable.

Croydon Sustainable Schools Programme

A programme of work is currently underway to support Croydon schools reduce their energy use and become sustainable. This work is supported by the Carbon Trust and includes regular training sessions, energy surveys to help identify where savings can be made and a managed investment fund to finance the upfront capital costs of measures such as insulation, lighting and boiler controls, and support to achieve eco-school status and beyond. Support is also available from both the water companies in Croydon reduce water consumption and cut waste.

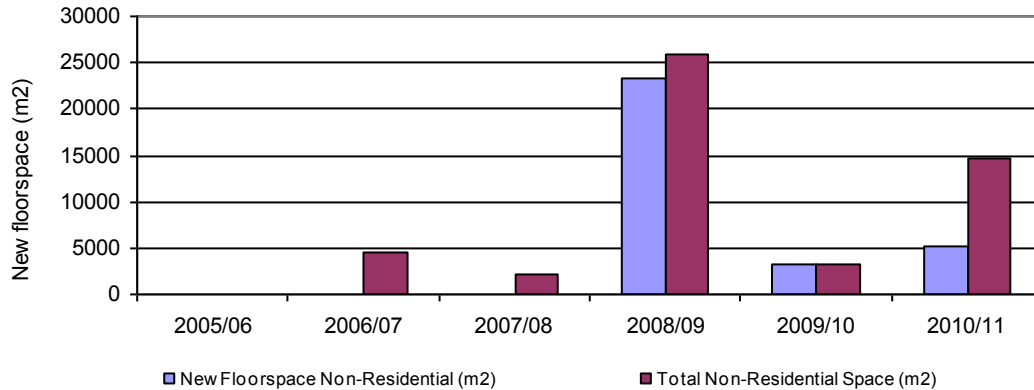


9 CO₂ Emissions from Non-Residential Buildings



Staying the Same: The percentage of homes achieving these standards, overall, has not changed

Floorspace Achieving BREEAM Very Good or Above



What does this graph show?

The Building Research Establishment Environmental Assessment Method (BREEAM) is a tool to measure the sustainability of new non-domestic buildings. In a building designed to BREEAM excellent standard, energy bills can be reduced by up to 20%.

Before 2008, no new developments achieved BREEAM Very Good or above. In 2008/09 more than half of new floorspace in Croydon achieved this. In 2010/11, the proportion of development that achieved this standard was lower than in previous years (see comments on overall trend above).

Major developments in Croydon are expected to meet high sustainable construction standards. Expected elements of this include:

1. Renewable energy production to off-set 10% of carbon emissions – e.g. solar water heating, photovoltaic cells, micro-wind turbines.
2. For non-residential developments $\geq 1,000\text{m}^2$, BREEAM Excellent is expected for all non-residential new build projects, taking account of site constraints.

District Energy

Croydon Council is developing a programme to offer town centre business and residential developments reliable low cost low carbon heat. This scheme will link public buildings, businesses and private houses in a sustainable heating system and will help to establish Croydon town centre as a leading location for the low carbon economy.

District Energy means joining up heating systems through a pipe network, and having a small number of efficient “combined heat & power” (CHP) plants instead of lots of separate boilers.

An initial feasibility study has shown that DE could reduce emissions from Croydon metropolitan centre by 20% & help in delivering 60% reductions by 2025.





Chapter 3

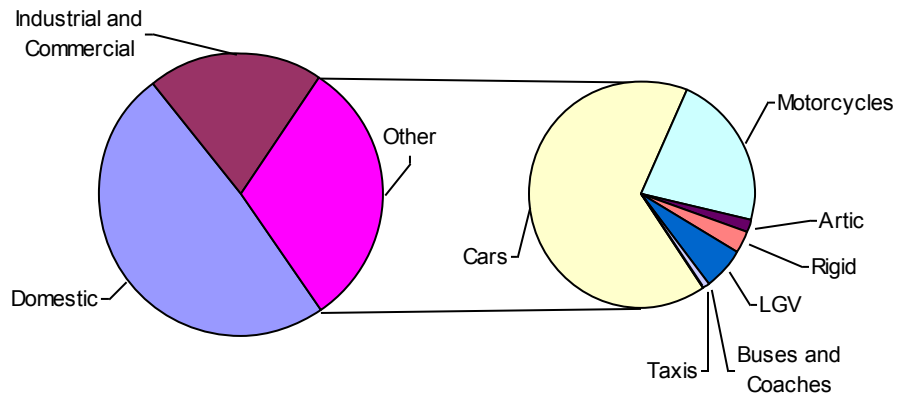
Transport and Air Quality

10 Summary: Transport and Air Quality



Staying the Same: Overall, transportation levels and air quality have stayed the same

Proportional Distribution of CO₂ Emissions From Transport



What does this graph show?

Road transport in 2007 accounted for about 21% of CO₂ emissions in Croydon, which is consistent with the London average of 22%. Over half of this comes from private cars. Under a business-as-usual scenario transport emissions in the UK are expected to continue rising by 35% between 1990 and 2030. Transforming transport is therefore critical in achieving our emissions reduction targets.

Road transport is also a key source of local air pollutants, such as NO₂ and PM₁₀ which have an impact on everyone living and working in Croydon, but mainly on the most vulnerable such as children, older people and those with heart and respiratory conditions.

Croydon Tramlink links parts of the borough and south London previously ill-served by public transport. and there is hope of further extensions.

What has Croydon Achieved so Far?

Croydon is also benefiting from the East London line being opened in the summer of 2010. This has put Croydon on the 'Underground' map and giving a direct connection to Canada Water and on to Shoreditch, Dalston and Islington.

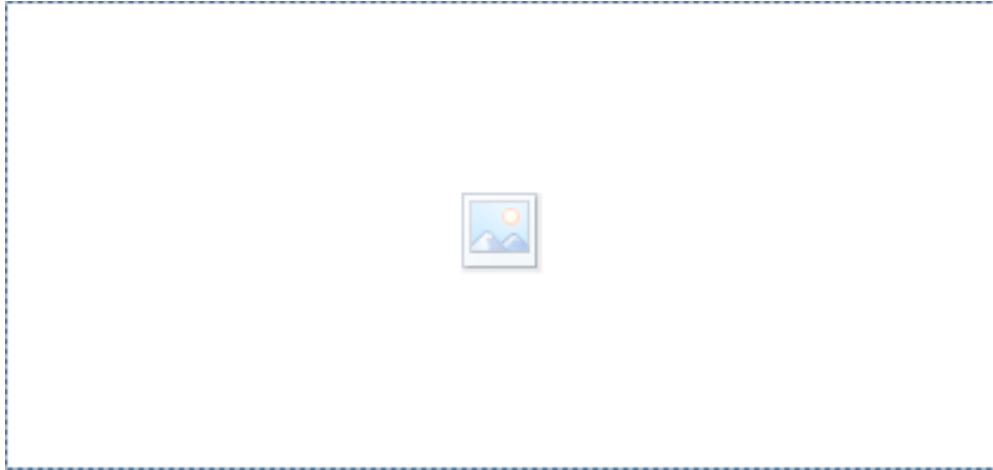
15 electrical vehicle charging points are due to be operation by the end of 2011. Within 5 years each charging point is expected to take up to 25 conventional vehicles off the road (Carplus 2010).

Number of travel plans approved to date: 40 workplace travel plans and 142 school travel plans.



11 Volume of Car Traffic on Croydon's Roads

[Insert Trend Here]



What does this graph show?

[Insert Text Here]

Car Clubs and the Council

Car clubs are an excellent solution for those who would like the flexibility to have access to a car occasionally but would like to save money and explore other transport solutions for the majority of their trips. Research suggests joining a car club could save families £1,000 a year – and also saves you worrying about car tax, parking permits, cleaning and service bills. For more information go to: www.carplus.org.uk

The council has adopted a car club system to provide pool cars for staff. Car clubs reduce the amount of CO₂ produced in local communities as a result of sharing resources and encouraging members to use the car occasionally rather than frequently.

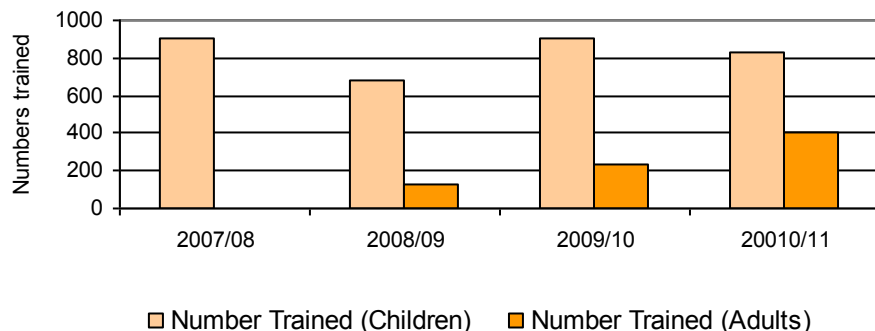


12 Cycling in Croydon



Improving: The number of trained adults and children have increased

Number of adults and children trained in Croydon



What does this graph show?

A total of 3318 children and 770 adults have received cycle training in Croydon since 2007. The number of adults trained increased by 73% between 2009 and 2010. Cycle training increases the rider's confidence and their ability to ride safely in urban areas.

Cycle Training in Croydon

The Bikeability (National Standard) courses, are available to all year 5 and year 6 children across the borough. Children are trained through a variety of disciplines and progress from Level 1 to Level 3.

Adult cycle training courses. Adults and young people who live, work or study in the London Borough of Croydon can book a free two-hour individual lesson online www.cyclinginstructor.com

Cycling for all is a Croydon-based service for people who wish to cycle using trikes and four-wheelers, for example people with mobility impairments or balance difficulties. Sessions are run at the Croydon Sports Arena. For more information see: www.wheelsforwellbeing.org.uk

Levels of Cycling in Croydon

Currently only 1% of trips in Croydon are made by bike. This is lower than the current London average of 2%. The mayor's target is to increase cycling to 5% across London. Analysis of current levels of cycling in Croydon and a review of potential cyclable journeys in the borough has determined that:

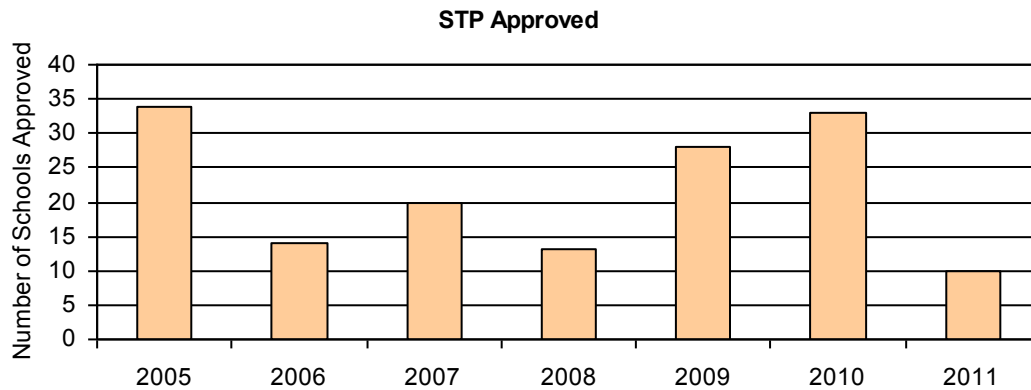
- A very large section of the population in Croydon has never cycled (63%). Regular cycling appears to be highest among the youngest age band (5-19).
- Cycling in Croydon is mainly used for very short trips with 65% of trips below 2km and 20% between 2km and 5km. This is a noticeably higher proportion of shorter trips than in London overall. The proportion of cyclists in Croydon making longer trips (over 8km/5 miles) is lower than that in London – 6% compared to 9%.
- The level of potential cycle trips is in the highest quartile of outer London boroughs, highlighting the high level of potential for cycling in Croydon (Cycling Star Alliance 2010).



13 School Travel



Staying the Same: There is no determinable trend



What does this graph show?

Transport contributes around 40% of all carbon dioxide emissions in the UK. Across the country, the twice daily school run makes a significant contribution to air pollution, congestion and ultimately climate change. An effective school travel plan puts forward a package of measures to improve safety, increase walking, cycling and car sharing and so reduce car use. It is based on consultation with teachers, parents, pupils and governors and local people. A total of 142 school travel plans have been approved in Croydon since 2005, helped by the provision of funding for immediate measures such as fencing, crossings, signs and raised platforms. There has been a gap in resources for renewing travel plans and for providing any changes to local roads in response so no new STPs have yet been approved in 2011. A new effort is now underway to update these plans and integrate them into the good management of each school. We anticipate 5-10 this year.

How children travel to school in Croydon

According to TFL data, as of February 2010, Croydon had the highest number of children travelling to school by car among London boroughs. It also has some of the highest levels of travelling by bus and rail, but the lowest levels of walking and cycling.

Walk to School

The 'Walk to School' project is about parents, guardians and children discovering the benefits of walking to school, helping to reduce traffic congestion and vehicle pollution, and creating the opportunity for children to learn the skills needed to cross roads safely. Each month children who walk to school are given a special badge to reward their efforts. 10% of Croydon schools are currently taking part.

Several walking buses are now in operation in the south of the borough, where each day groups of parents take turns accompanying a group of children to school, picking up children along the route. The benefits are:

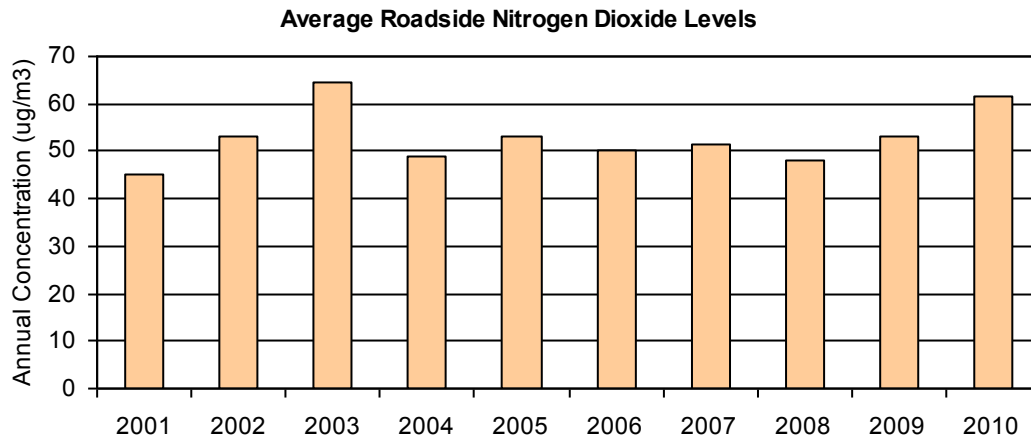
- walking is a good way to keep fit
- they create a chance to teach vital road safety skills
- they reduce pollution and improve air quality, assisting those who suffer from asthma and related problems



14 Air Pollution - NO₂



Staying the Same: There is no determinable trend



What does this graph show?

The graph shows air pollution levels averaged out across the whole year at all roadside sites in Croydon. The current objectives for nitrogen dioxide (NO₂) are not being met. Overall there is no upward or downward trend in NO₂ concentrations since 2001. The compliance date for PM₁₀ and NO₂ has already passed. However, the EU Ambient Air Quality Directive provides for Member States to apply to extend the date for compliance with the limit values for PM₁₀ until May 2011, and for NO₂ until January 2015, provided certain conditions are met - in particular, that a viable action plan to meet the limit values is in place.

The Government has applied to the EC for a time extension to the NO₂ limit values until 2015. The measures in the Mayor's Air Quality Strategy are aimed at working towards achieving the limit levels by 2011 for PM₁₀ and 2015 for NO₂.

Nitrogen Dioxide

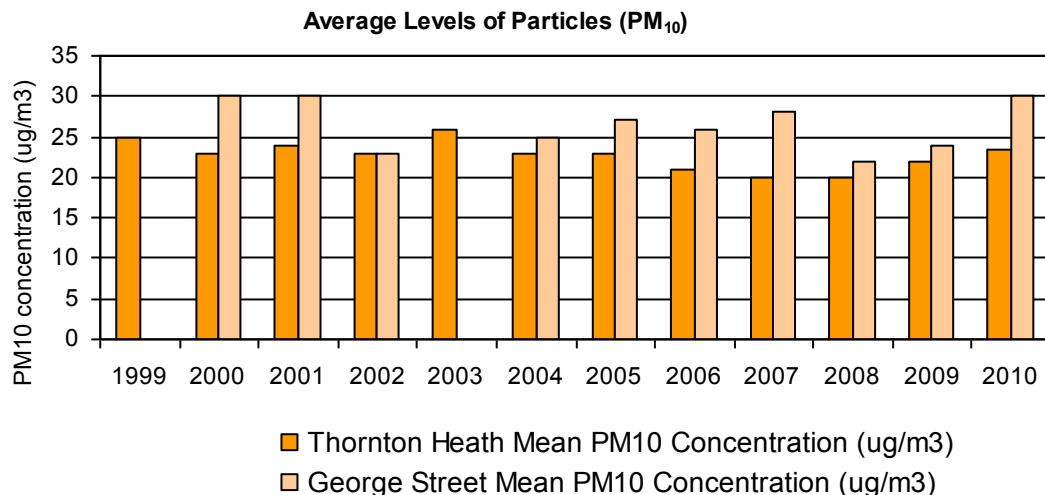
Nitrogen dioxide is a brown gas, with the chemical formula NO₂. Together with Nitrogen monoxide (NO) it is released into the atmosphere when fuels are burned (for example, petrol or diesel in a car engine, or natural gas in a domestic central heating boiler or power station). NO₂ can affect our health. There is evidence that high levels of it can inflame the airways in our lungs and, over a long period of time, affect how well our lungs work. People with asthma are particularly affected. NO₂ can also affect vegetation. (Source: DEFRA Air Quality Expert Group 2004)



15 Air Pollution - PM₁₀ Levels



Staying the Same: There is no determinable trend



What does this graph show?

This graph shows that PM₁₀ levels in Croydon meet the air quality objective. However, we remain concerned that there are no safe levels of PM₁₀ and that we should therefore take proportionate and cost-effective steps to reduce PM₁₀ levels in Croydon. The sources of PM_{2.5} tend to be very similar to the sources of PM₁₀, particularly road transport. We have concerns regarding particulate emissions as there is clear and unequivocal health advice that there are no safe levels of PM_{2.5}. Therefore we need to take proportionate and cost-effective steps to reduce PM_{2.5} levels in Croydon. Croydon was awarded beacon status for 'Delivering Cleaner Air' in 2007-2008. PM stands for "particulate matter".

The compliance date for PM₁₀ and NO₂ has already passed. However, the EU Ambient Air Quality Directive provides for Member States to apply to extend the date for compliance with the limit values for PM₁₀ until May 2011, and for NO₂ until January 2015, provided certain conditions are met - in particular, that a viable action plan to meet the limit values is in place.

AirTEXT

In March 2005 Croydon Council developed an information service called airTEXT in partnership with Cambridge Environmental Research Consultants (CERC). This service sends free air pollution alerts by text message, e-mail or by recorded message to the home phones of residents when air pollution levels are forecast to be moderate, high or very high. The messages enable residents who are vulnerable to high pollution levels, such as people who suffer from asthma, bronchitis, emphysema, heart disease or angina to take the necessary steps to minimise exposure to the pollution episode and better manage their symptoms, improving quality of life and hopefully reducing the need for visits to the doctor or hospital.

In 2007 the airTEXT service was extended to other London boroughs and Slough Borough Council. By the end of March 2011 6580 people were receiving text alerts. AirTEXT is now run and managed by a consortium made up of participating London boroughs.





Chapter 4

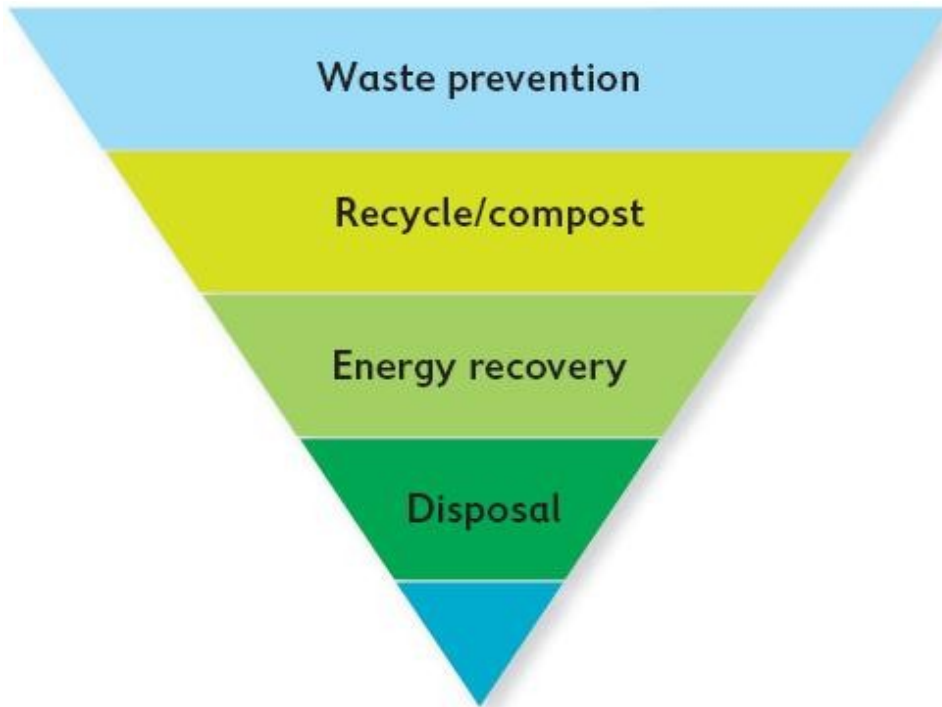
Waste, Recycling and Street Cleanliness

16 Summary: Waste, Recycling and Street Cleanliness



Improving: Overall, the amount of waste has decreased while recycling levels have increased

Waste hierarchy (WRAP-Waste & Resources Action Programme, 2010)



In accordance with this and the Mayor of London's waste strategy, there is a hierarchy for managing waste. Croydon must consider options to reduce and recycle prior to generating energy from waste.

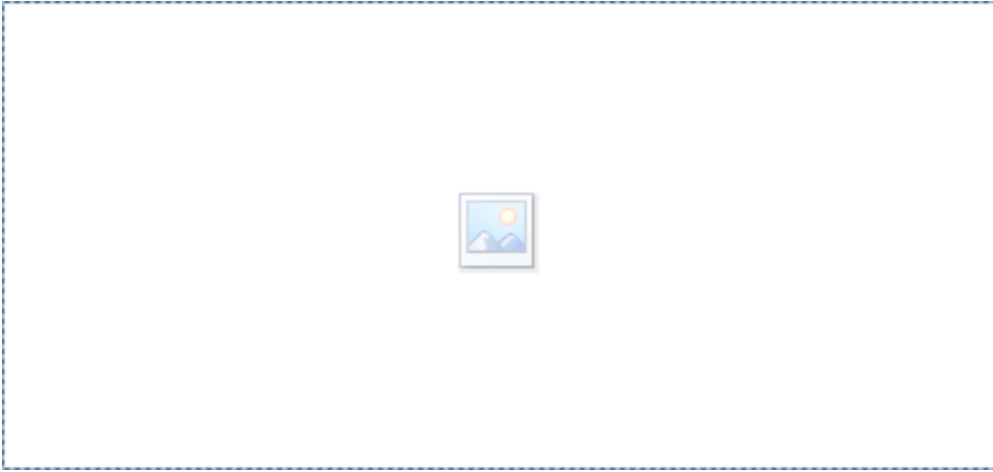
Each year, the UK generates about 100 million tonnes of waste from households, commerce and industry. 22 million tonnes of this are generated in London. Most of this ends up in landfill where the biodegradable part generates methane as it decomposes. Methane is regarded as the most potent greenhouse gas and has a warming potential 21 times more than carbon dioxide, therefore this has a considerable contribution to climate change.

The 2010 Waste Framework Directive (WFD) puts a strong emphasis on waste reduction, re-use and high quality recycling, with separate collections of waste where technically, environmentally and economically practicable. Focus should be on resource efficiency, waste recovery and wider concerns including social, economic and environmental impacts of the methods by which we manage our waste.



17 Household and Municipal Waste

[Insert Trend Here]



[Insert Title Here]

[Insert Text Here]

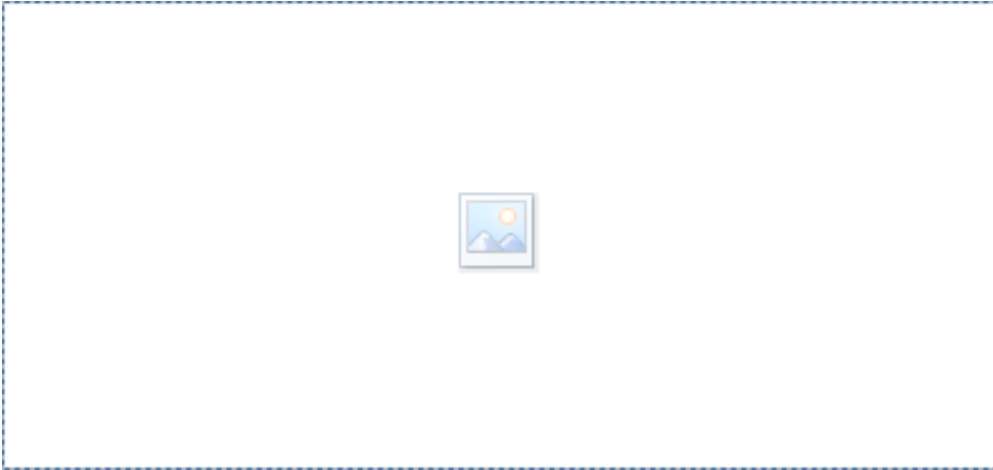
What does this graph show?

[Insert Text Here]



18 Household Waste Management

[Insert Trend Here]



What does this graph show?

[Insert Text Here]

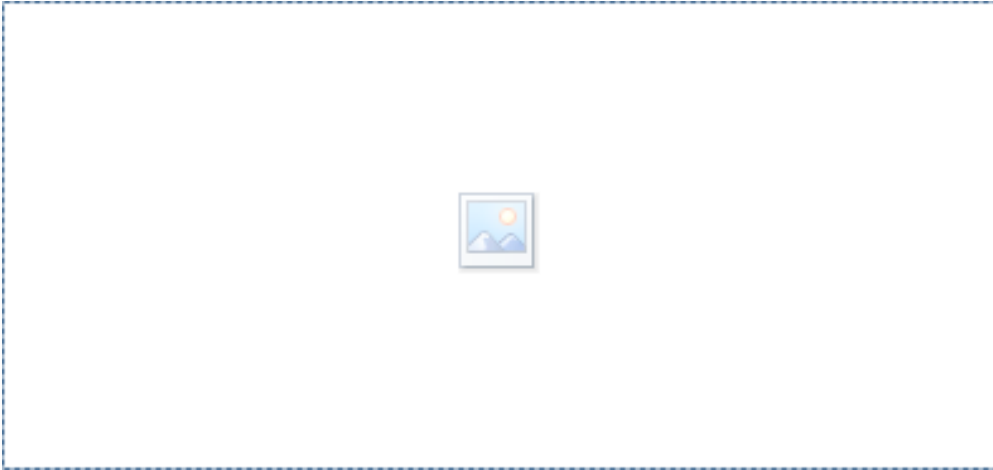
Local Authority Carbon Management Programme

[Insert Text Here]



19 Recycling and Composting Levels

[Insert Trend Here]



[Insert Title Here]

[Insert Text Here]

What does this graph show?

[Insert Text Here]

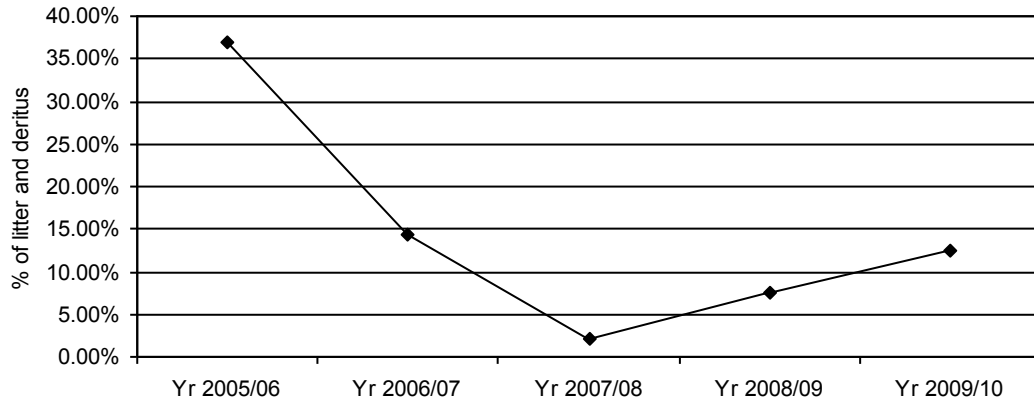


20 Litter and Detritus



The trend shows a slight deterioration but a score of 12.5 is still extremely good

Amount of Litter and Detritus



What does this graph show?

This indicator measures the percentage of relevant land and highways that is assessed as having deposits of litter, detritus, graffiti and fly-posting that fall below an acceptable level.

The above graph highlights the number of streets inspected that are considered to be below an acceptable standard.

There has been a dramatic reduction in the amount of litter and detritus on Croydon streets since 2005. The percentage of streets with unacceptable levels of litter and detritus has decreased from 37% to 12.5% between 05/06 and 09/10.

What the Council is Doing

This has been the result of increasing the frequency of cleansing in addition to clamping down on dropping of litter and fly-tipping.

The council has continued to focus on areas of heavy footfall and rural roads. The lengthiest frequency of cleanse is four weekly with at least two thirds of the borough being swept at least weekly. Some locations such as shopping areas receive cleansing six times a day!





Chapter 5

Green Infrastructure and Climate Change

21 Summary: Green Infrastructure and Climate Change



Staying the Same: The green infrastructure in Croydon has not changed



Climate Adaptation Green Infrastructure Can Provide

Green spaces Mitigation services:

- Carbon storage and sequestration
- Fossil fuel substitution
- Material substitution
- Food production
- Reducing need to travel by car (by providing accessible green spaces)

Green spaces Adaptation services:

- Attenuating high temperatures
- Attenuating flooding
- Mitigating surface water run-off
- Attenuating soil erosion
- Helping other species to adapt
- Producing local food

Climate Change

The three main threats to London from climate change and extreme weather events are:

1. Overheating
2. Flooding
3. Drought

Natural open spaces and green infrastructure (which includes street trees, food growing spaces and green roofs and walls), help to mitigate climate change and also have a key role in adapting to future more extreme weather conditions.

Whilst mitigation measures are aimed at reducing the negative impact of human activity on the climate, adaptation is about responding to the unavoidable changes in climate that are already occurring.



22 Green Infrastructure in Croydon



Staying the Same: No changes have occurred between 2010 and 2011

What Croydon is Doing

Croydon hosts an exceptionally rich range of wildlife habitats and species. Croydon's wildlife habitats and green spaces range from the wildflower rich chalk grassland of the Farthing Downs and Happy Valley to the acid grassland and heaths of Addington Hill and Croham Hurst

There are 120 parks and open spaces in Croydon. 40% of these spaces are natural open spaces, including woodlands, heathlands, chalk grasslands, ponds and lakes. 60% of the borough is made up of residential garden space, recreational space and broad leafed woodland.

Over 200 ha of land in parks is cut for hay that feeds into the agricultural system.

Croydon won in the 'Large City' category for both the London in Bloom and Britain in Bloom competitions. Croydon also won the first place in the London in Bloom Best Public Park and Open Spaces Award for Coombe Wood and the RHS Britain in Bloom Conservation & Environment Award for Happy Valley and Farthing Downs.

Our growing number of Green Flags (Croydon now has a total of 10) are testament to the effort that is made every year to maintaining our green standards.

£1.5million has been allocated to nine parks as part of our parks to be proud of' project – which has seen nearly 10,000 people take part in a major participative budgeting exercise. Addiscombe Railway Park was formally opened by the deputy mayor in March this year demonstrating that Croydon is still acquiring new public open space.

Wandle River Restoration

Exciting plans have been proposed for Croydon's Wandle Park. The London Borough of Croydon will use a £0.4 million grant to contribute towards restoring the River Wandle, which now runs underground in a concrete pipe. Plans include restoring the river as a small stream, developing a lake or pond/wetland, restore a rose garden, developing the skate park and children's playground, improving the signage to the park and establishing community food growing schemes. One of the main additional benefits of restoring urban rivers, such as the Wandle, is in reducing flood risk (see section 31 for more details).

As well as being key to climate adaptation, research shows that green spaces are fundamental to residents' mental and physical well being: they provide spaces for both relaxation and exercise, and also improve air quality.

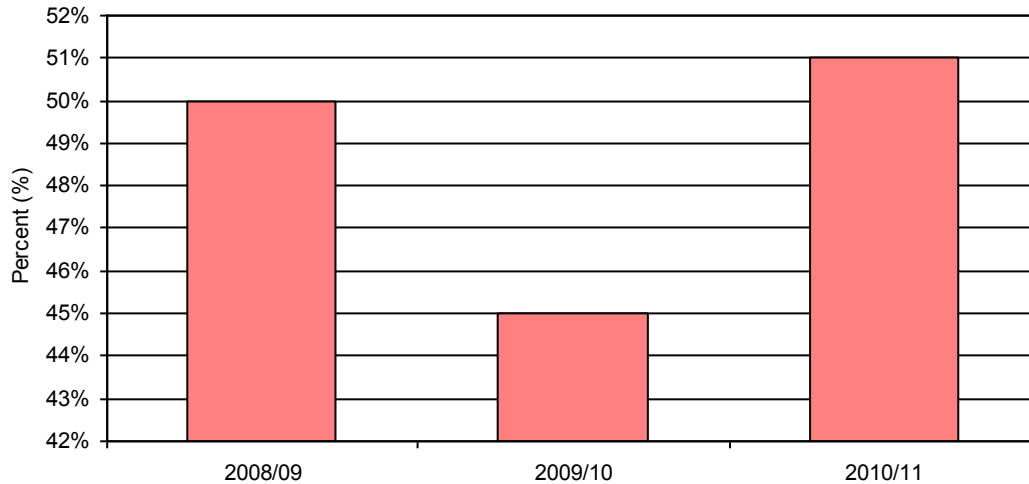


23 Green/Open Spaces for Nature Conservation



Not enough data to determine a trend

Green/Open Spaces Managed for Nature Conservation



What does this graph show?

In Croydon in 2008/09, 50% of open spaces were actively managed for nature conservation, placing it joint 10th among London boroughs. In 2009/10 the score of 45%, which indicated that there was a 10% decrease from the preceding year. The Croydon Biodiversity Partnership has produced the Croydon Biodiversity Action Plan which prioritizes habitats and species for protection and enhancement.

Friends of Groups

Croydon Council supports over 20 'friends of park' groups through its Community Partnership Officer, based in the green spaces team. The officer provides start-up and ongoing group support, funding advice, training events and workshops. This work is also co-ordinated through BTCV, dozens of friends' groups, the National Probation Service and many others. There were over 6,500 volunteer work days in 2010/11 on everything from community clean-ups, to woodland management & training, coppicing and charcoal making.

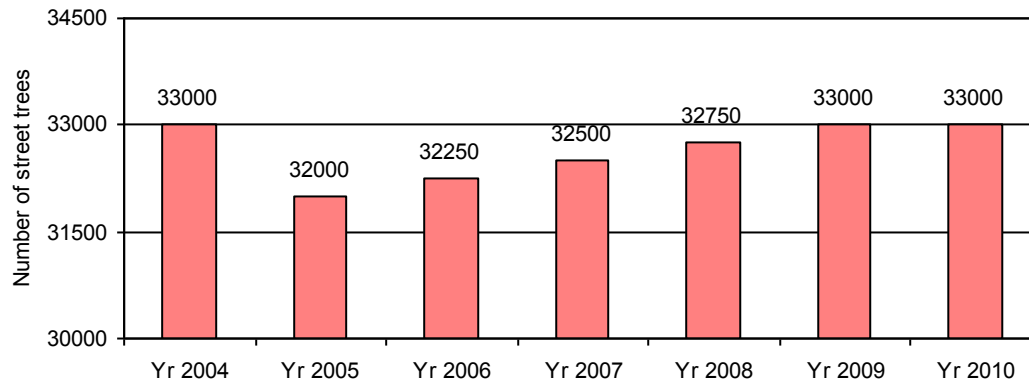


24 Canopy Cover: Street Trees and Woodland



Staying the Same: The number of street trees stayed the same.

Number of Street Trees in Croydon



What does this graph show?

There were approximately 33,000 street trees in Croydon in 2009. There was a 9% decrease in the number of street trees in 2005 due to lack of investment in maintenance, but numbers now have recovered.

Broad Green in the north of the borough has been identified as a street tree priority area by the Mayor of London. The Council is in the process of applying for funding to try to increase the number of street trees, particularly in the north of the borough.

The Benefits of Trees

In the mid 1990's partnership with an Environmental NGO produced a new approach to woodland management supported by accessing external grants, mainly the Forestry Commission's Grant Schemes which has provided the majority of the finance for woodland operations.

All woods now have current management plans and a where viable a programme of regular works by contractors and community organizations is carried out, ranging from coppicing to the installation of nature trails. Community participation is widespread throughout the Borough and occurs at all levels including the active participation of voluntary organizations and community groups including Friend Of groups who are actively linked with particular sites.

Croydon is unusual in that as opposed to using arboriculturalists to work its woodlands it uses forestry contractors. As with other trees in Croydon, woodlands have suffered from a reduction in budget. However, as from April 2006, recent increased allocation has resulted in a programme of inspection and works. Croydon is unique in London and was the second borough in the UK to have its woodlands audited for the quality of management and have held a FSC certificate since 2000.

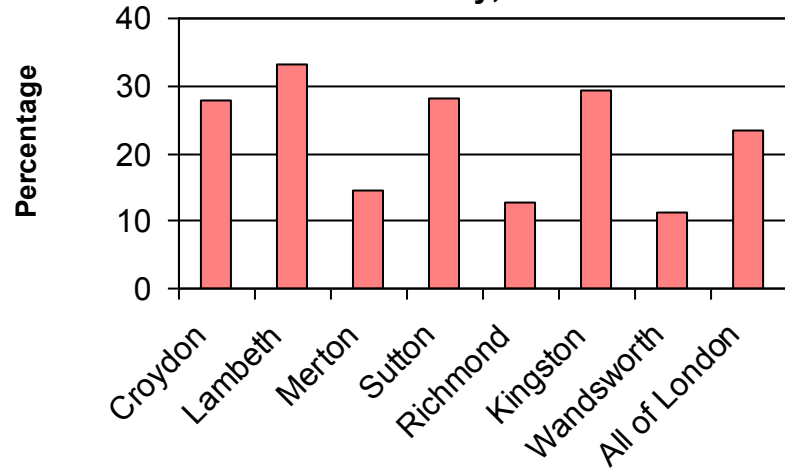
Croydon is committed to maintaining its status as an exemplar of good urban woodland management. This involves increasing the diversity of its woodland structure to achieve a wide range of environments, recruit young replacement trees, and increasingly involve local people in management.

25 Access to Nature



Not enough data to determine a trend

Percentage of non Green Belt and MOL as Area of Deficiency, 2007



What does this graph show?

Croydon is one of the greenest boroughs in London, and offers some of the most rich and diverse habitats. Despite this there remain areas of the borough where access to nature is limited.

In Croydon 28.4% of the borough (Except Green Belt land and Metropolitan Open space) is classified as deficient in access to nature, approximately the same as neighbouring Sutton, lower than neighbouring Lambeth, but higher than neighbouring Merton and the London average.

A number of outer London boroughs are surprisingly deficient in access to nature and in each case it is because of the uneven scatter of wildlife sites, leaving very large areas with little in the way of accessible nature. Croydon Council has started to address this issue through a variety of measures, including prioritising identified areas for tree planting initiatives.

Sustrans Connect2 Project

The Connect 2 project is a national project which aims to improve cycling provision. In Croydon, the scheme will link densely populated parts of the borough to some of the area's finest green spaces. A section of it uses a former rail line to link the communities of Addiscombe and Woodside to South Norwood Country Park, whilst another builds on the success of the Wandle Trail with a connection into East Croydon and a link beside the Croydon tramline. By connecting people to parks, this project creates the opportunity for local people to make numerous journeys on foot or by bicycle to and through the town centre.



26 Urban and Semi-Urban food Growing



Improving: More people are showing interest in allotment sites



Community Food Learning Centre

The Croydon Community Food Learning Centre project (www.goodfoodmatters.org.uk/Siteplans.html) supports disadvantaged and young people to build healthier lifestyles, supporting people of all ages and abilities and backgrounds to learn how to grow, cook and market organic food thus benefiting their physical and mental health and contribution to community cohesion.

Allotment Sites

At present there are 18 allotment sites located within the borough.

The allotment sites include very active sites such as SPA Hill Organic Growers, who also offer a variety of gardening and food growing courses.

Data available however highlights a shortage of allotment spaces throughout the borough. Hundreds of people are on waiting lists for council-owned allotments with the credit crunch thought to be partly behind the increasing demand, with more people wanting to save money by growing their own fruit and vegetables. Waiting lists increasing approximately 300 applicants are waiting for a plot on Council managed sites alone. In some cases, "taster plots" have been introduced so that plot-holders new to gardening can gain knowledge whilst waiting for a half plot. Allotment gardening is not just about saving on purchasing vegetables from the supermarket but eating fresh organic produce whilst enjoying the social, energetic aspects of gardening.

Community Food Learning Centre

Croydon council has also committed to finding 60 spaces for community food gardens in the two years leading up to the 2012 Olympics. These initiatives will particularly benefit those with no access to a private garden. This commitment forms part of 'Capital Growth' an initiative aimed at providing Londoners with 2,012 brand new places to grow their own fruit and vegetables. For more information, visit www.capitalgrowth.org



Chapter 6

Climate Change Adaptation

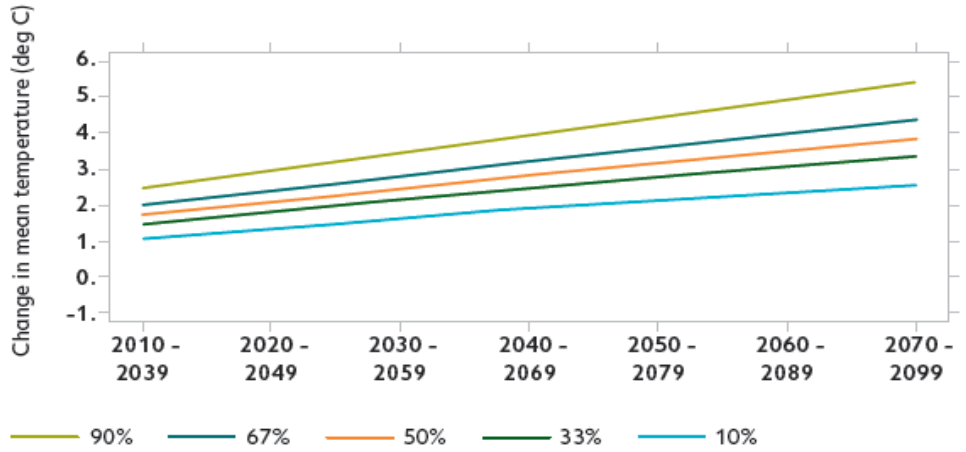
27

Summary: Climate Change Adaptation



Not enough data to determine a trend

% probability of degrees Celsius Temperature change, based on a medium emissions scenario, SRES (UKCP09)*

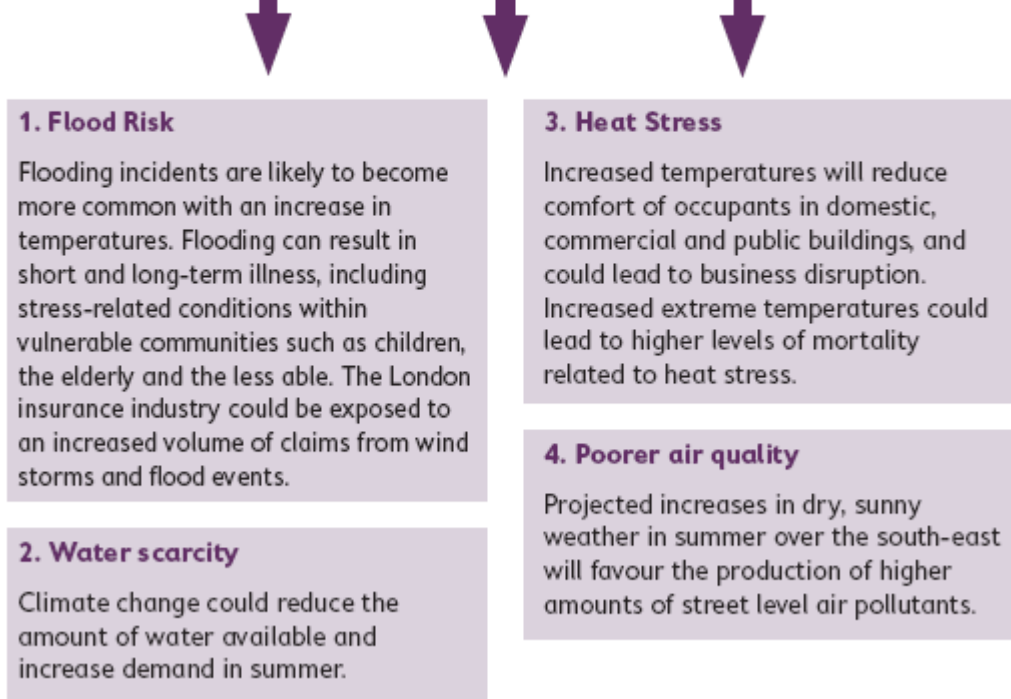


What does this graph show?

Due to the uncertainty attached to modelling climate change projections the graphs show the different probability levels for temperature change from 2010 to 2070. Limitations on our knowledge of how the climate will behave in the future is the cause of this uncertainty (Met, 2010). A probability level of 90% indicates that it would be very unlikely for temperature to be greater than the projection, 50% is the central estimate and 10% indicates that temperature is very unlikely to be less than the projected estimate.

The UK Climate Projections 09 (UKCP09 - DEFRA) models show that there is a high probability of a temperature increase of two degrees Celsius or higher by the end of the century. This temperature change will mean that in the future London will have hotter drier summers and warmer wetter winters, plus more extreme weather events such as storms, floods and heatwaves. What we consider to be a freak or extreme weather event today is likely to become far more frequent.

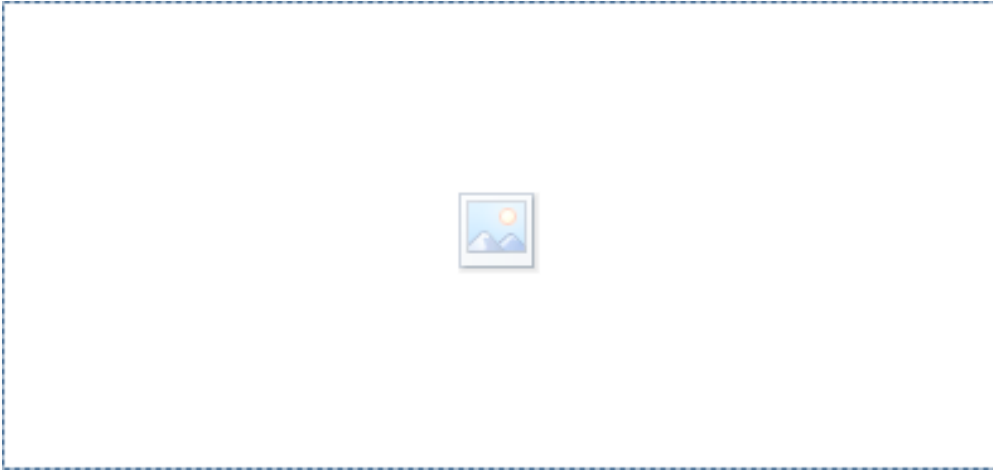
Changes in precipitation patterns
 Wetter winters and drier summers - precipitation levels are projected to increase by up to 33% in winter, with summer rainfall set to fall by up to 40 per cent by 2080 (Islington 2010).



Source: Mayor of London 2010c London Draft Climate Change adaptation strategy

28 Flood Risk

[Insert Trend Here]



What does this graph show?

[Insert Text Here]

River Restoration and Sustainable Urban Drainage

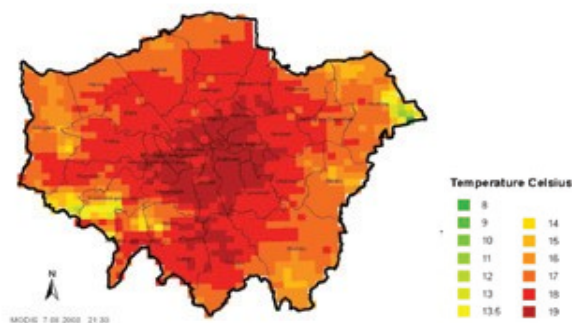
[Insert Text Here]



29 Dealing with Heat Stress



Not enough data to determine a trend



What does this figure show?

The Met Office has reported that the last ten years (2001-2010) were warmer than the previous ten years (1991-2000) by 0.2 °C, with 2010 being the second warmest year on record, globally. Like other countries in Europe, the United Kingdom experienced a record breaking heat wave in early August 2003. In the south east of England, maximum temperatures exceeded 32°C (89.6°F) on a total of eight days between 4 - 12 August, with a peak of 38°C. The map above shows that built up areas are particularly at risk during a heat wave as temperatures in these areas rise even higher (this is part of what is known as the “urban heat island effect”, which means that urban areas tend to be warmer than surrounding rural areas). The August 2003 heat wave was associated with a large short-term increase in mortality, with 600 excess deaths in London alone, and particularly amongst the elderly.

In Croydon, heat waves have also been recorded in July 2006, May 2008 and July 2009 (Croydon Council LCLIP 2010). With climate change, it is likely that by 2040 the temperature reached in the heat wave of 2003 will become the norm. It is predicted that by 2050 summers will be at least 3.5°C warmer than they are today. In dense urban areas the presence of the urban heat island effect could mean temperatures increase by as much as 10°C (London Climate Change Partnership 2010).

Green Spaces and Cooling Effects

Green spaces, street trees and water bodies help to reduce high temperatures in summer by providing shade and by moderating the impacts of the urban heat island as they radiate out less heat than harder man made surfaces. Green roofs assist in the cooling of the urban environment. Linear planting along the Wandle links and Connect2 cycling and walking routes will also play an important role in contributing to cooling within the borough. Additional adaptation services delivered by green spaces include improved air quality (higher temperatures are likely to lead to increased levels of air pollution) and reducing extreme winds (trees in particular will deliver these benefits).

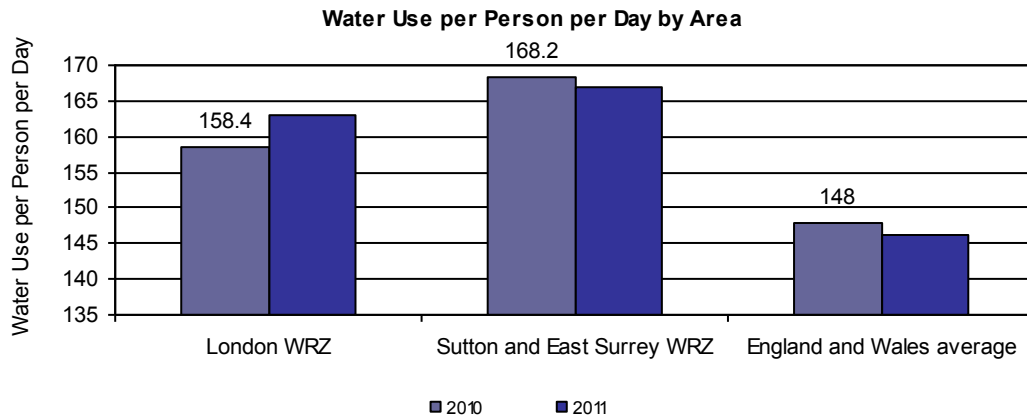
Other ways to keep cool

- Shut windows and pull down the shades when it is hotter outside. If it is safe, open them for ventilation when it is cooler.
- Avoid the heat: stay out of the sun and don't go out between 11am and 3pm (the hottest part of the day).
- Keep rooms cool by using shades or reflective material outside the windows. If this isn't possible, use light-coloured curtains and keep them closed (NHS 2010). For more advice visit <http://www.nhs.uk/Livewell/Summerhealth/Pages/Heatwave.aspx> Residents in priority areas can also register for the mayor's street tree programme to get trees planted in their area www.london.gov.uk/streettrees/areas/croydon.jsp

30 Water management



Not enough data to determine a trend



What does this graph show?

Croydon's water supply is provided by two companies: Thames Water and Sutton and East Surrey Water Plc. The average water use in the London Water Resource Zone is 163 litres per person per day (l/p/d), and 166.8 l/p/d in the Sutton and East Surrey WRZ. This is much higher than the England and Wales average of 146.1 l/p/d.

The south east is an area of serious water stress and water efficiency measures will be essential to support new growth in the borough. Personal water consumption has been rising by 1% a year since 1930. This consumption level is not sustainable in the long-term. The bathroom and toilet use nearly 40% of all water in the home; 15 - 20% is used washing clothes.

The kitchen is a major consumer of water in the home, using around 10% of total household water consumption for cooking, cleaning, washing or drinking (Waterwise, 2010).

Despite having a seemingly wet climate some parts of the UK are experiencing water shortages. The south east of England has less water available per person than Sudan and Syria (Waterwise, 2010).

Transporting and cleaning our water uses lots of energy so by reducing our use of it at home we can also reduce our carbon footprint.

- **Drought resistant planting:** Arid roundabouts have been introduced in the borough where the planting has been designed to be drought tolerant with low maintenance. As well as selecting drought resistant plants for your garden, other easy ways to save money and water in your house include:
 - Invest in a water butt and connect it to your drainpipe in your garden - this can then collect some of the 85,000 litres of rainfall that falls on your roof every year. This water can be used to water your garden, clean your car and wash your windows.
 - If you don't have a dual flushing system, install a cistern displacement device in your toilet – these can be obtained free of charge from your water company and displaces water in your cistern so that the volume of water in your flush is reduced by between 1 – 3 litres.

For more information visit www.waterwise.org.uk

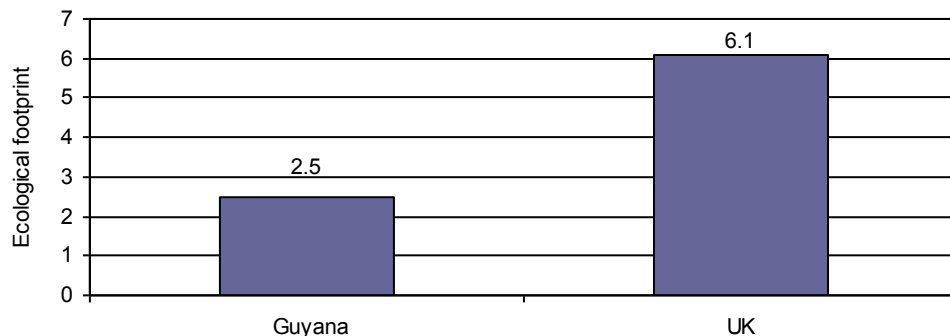


31 Global Climate Dimension



Not enough data to determine a trend

Ecological Footprint 2006



What does this graph show?

The ecological footprint is a measure of human demand on the Earth's ecosystems. It compares human demand with planet Earth's ecological capacity to regenerate. It represents the amount of biologically productive land and sea area needed to regenerate the resources a human population consumes and to absorb and render harmless the corresponding waste. Croydon has nearly double the ecological footprint of a country like Guyana.

Developed countries such as the UK also have a much higher carbon footprint per capita than most developing countries. However the consequences of climate change will be felt most strongly in developing countries.

Guyana - Climate Change is Real

Guyana and the challenge of its environment by Wayne McWatt.

Guyana is situated on the main land of South America. The Amazon and Orinoco rivers shelter the pristine rain forests with unique flora and fauna. This is a strength in its favour which can only be sustained through local and international efforts to respect the ecology and with its rich bio-diversity. Guyana has a challenge to manage and maintain its wilderness and vast waterways.

Climate change has caused a variation in weather patterns upsetting the regularity of the two rainy seasons. Any over abundance of rain water results in flooding, which has implications for health and human welfare; water borne diseases and malaria from mosquito infestations brought on in the wet conditions.

Anyone living or working in Croydon can apply to become a member/ friend of the Link. For further information please contact:

The Coordinator
Croydon Guyana Link
c/o Environment & Sustainability Team
Planning & Transportation
Taberner House
Park Lane
Croydon, CR9 3BT
Email: croydonguyana.link@googlemail.com

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